UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(B) OR 12(G) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2021.

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

Date of event requiring this shell company report _____________

For the transition period from _____________to _____________

Commission file number: 001-35729

JOYY INC.
(Exact name of Registrant as specified in its charter)

N/A
(Translation of Registrant's name into English)

Cayman Islands
(Jurisdiction of incorporation or organization)

30 Pasir Panjang Road #15-31A Mapletree Business City,
Singapore 117440
(Address of principal executive offices)

David Xueling Li,
Chief Executive Officer,
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(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading symbol(s)	Name of Exchange on Which Registered
American depositary shares (each representing 20 Class A common shares, par value US$0.00001 per share)	YY	The Nasdaq Stock Market LLC
Class A common shares, par value US$0.00001 per share*		The Nasdaq Stock Market LLC

* Not for trading, but only in connection with the listing on The Nasdaq Stock Market LLC of the American depositary shares ("ADSs").

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None
(Title of Class)

Indicate the number of outstanding shares of each of the Issuer's classes of capital or common stock as of the close of the period covered by the annual report. 1,146,336,305 Class A common shares, par value US$0.00001 per share, and 326,509,555 Class B common shares, par value US$0.00001 per share, were outstanding as of December 31, 2021.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ No ☒

Note – Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ | Accelerated filer ☐
Non-accelerated filer ☐ | Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act. ☐

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☒ | International Financial Reporting Standards as issued by the International Accounting Standards Board ☐ | Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes ☐ No ☐

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INTRODUCTION

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 20-F to:

- "active user" for any period means a registered user account that has logged onto our platforms at least once during such relevant period;

- "concurrent users" for any point in time means the total number of users that are simultaneously logged onto at least one of our platforms at such point in time;

- "paying user" for any period means a registered user account that has purchased virtual items or other products and services on our platforms at least once during the relevant period. A paying user is not necessarily a unique user, however, as a unique user may set up multiple paying user accounts on our platforms; thus, the number of paying users referred to in this annual report may be higher than the number of unique users who are purchasing virtual items or other products and services;

- "registered user account" means a user account that has downloaded, registered and logged onto our platforms at least once since registration. We calculate registered user accounts as the cumulative number of user accounts at the end of the relevant period that have logged onto our platforms at least once after registration. Each individual user may have more than one registered user account, and consequently, the number of registered user accounts we present in this annual report may overstate the number of unique individuals who are our registered users; and

- "we," "us," "our company," "the Company," and "our" refer to JOYY Inc., a Cayman Islands company, its subsidiaries, and, in the context of describing our operations and consolidated financial statements, also include the variable interest entities and the subsidiaries of the variable interest entities in the PRC that we control through a series of contractual arrangements.

Historically, we presented our financial results in Renminbi. Starting from January 1, 2021, we changed our reporting currency from Renminbi to U.S. dollars since a majority of our revenues and expenses are now denominated in U.S. dollars. We believe the alignment of the reporting currency with the underlying operations would better illustrate our results of operations for each period. We have applied the change of reporting currency retrospectively to our historical results of operations and financial statements included in this annual report.

On November 16, 2020, we entered into definitive agreements with Baidu, Inc. (Nasdaq: BIDU), or Baidu. Pursuant to the agreements, Baidu would acquire JOYY's PRC video-based entertainment live streaming business, or YY Live, which includes YY mobile app, YY.com website and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. Subsequently, the sale was substantially completed as of February 8, 2021, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. As a result, the historical financial results of YY Live are reflected in our consolidated financial statements as discontinued operations and we ceased consolidation of YY Live business since February 8, 2021.

The financial information and other relevant information disclosed in this annual report is presented on a continuing operations basis, unless otherwise specifically stated. For the avoidance of confusion, the continuing operations for the year ended December 31, 2019, 2020 and 2021 as presented in this annual report primarily consisted of BIGO, and did not include Huya or YY Live. Due to the reasons mentioned above, the results of operations for the year ended December 31, 2019 presented in this annual report are not identical to the ones disclosed in our annual report for the year ended December 31, 2019.

FORWARD-LOOKING STATEMENTS

This annual report contains forward-looking statements that involve risks and uncertainties. All statements other than statements of historical facts are forward-looking statements. These forward-looking statements are made under the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements.

You can identify these forward-looking statements by words or phrases such as "may," "will," "expect," "is expected to," "anticipate," "aim," "estimate," "intend," "plan," "believe," "is/are likely to" or other similar expressions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements include, but are not limited to, statements about:

- our growth strategies;
- our ability to retain and increase our user base and expand our product and service offerings;
- our ability to monetize our platforms;
- our future business development, results of operations and financial condition;
- competition from companies in a number of industries, including internet companies that provide online voice and video communications services, social networking services and online games;
- expected changes in our revenues and certain cost or expense items;
- global economic and business condition; and
- assumptions underlying or related to any of the foregoing.

You should thoroughly read this annual report and the documents that we refer to herein with the understanding that our actual future results may be materially different from and/or worse than what we expect. Other sections of this annual report, including "Item 3. Key Information—D. Risk Factors" and "Item 5. Operating and Financial Review and Prospects" sections, discuss factors which could adversely impact our business and financial performance. Moreover, we operate in an evolving environment. New risk factors emerge from time to time and it is not possible for our management to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of our forward-looking statements by these cautionary statements.

You should not rely upon forward-looking statements we make as predictions of future events. The forward-looking statements made in this annual report relate only to events or information as of the date on which the statements are made in this annual report. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

Our Holding Company Structure and Contractual Arrangements with the Variable Interest Entities

JOYY Inc. is a Cayman Islands holding company that does not have substantive operations on its own. We conduct our operations primarily through (i) our subsidiaries in Singapore, the United States, the United Kingdom, and other jurisdictions for a majority of our global business; and (ii) the variable interest entities with which we have maintained contractual arrangements and their subsidiaries for some of our remaining business in China. PRC laws and regulations prohibit or restrict foreign investment in certain internet-related business, value-added telecommunication services and other-related businesses. Accordingly, we operate these businesses in China through the variable interest entities, and rely on contractual arrangements among our PRC subsidiaries, the variable interest entities and their shareholders to control the business operations of the variable interest entities. Revenues contributed by the variable interest entities accounted for 31.4%, 20.7% and 17.1% of our total revenues for the year ended December 31, 2019, 2020 and 2021, respectively. As used in this annual report, "we," "us," "our company" and "our" refers to JOYY Inc., its subsidiaries, and, in the context of describing our operations and consolidated financial information, also including the variable interest entities and their subsidiaries in China, primarily including Guangzhou Huaduo Network Technology Co., Ltd. and Guangzhou BaiGuoYuan Network Technology Co., Ltd. Investors in our ADSs are purchasing equity interest in a holding company incorporated in the Cayman Islands that holds equity interests in its subsidiaries in various jurisdictions. JOYY Inc. does not hold any equity interest in the variable interest entities in China so investments in our ADSs would not render the investors any equity interest in the variable interest entities.

A series of contractual agreements, including voting rights proxy agreements, exclusive service agreements, equity interest pledge agreements, and exclusive option agreements, have been entered into by and among our subsidiaries, the variable interest entities and their respective shareholders. Terms contained in each set of contractual arrangements with the variable interest entities and their respective shareholders are substantially similar. As a result of the contractual arrangements, we have effective control over and are considered the primary beneficiary of these companies, and we have consolidated the financial results of these companies in our consolidated financial statements. For more details of these contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements."

However, the contractual arrangements may not be as effective as direct ownership in providing us with control over the variable interest entities and we may incur substantial costs to enforce the terms of the arrangements. If the variable interest entities or the nominee shareholders fail to perform their respective obligations under the contractual arrangements, we could be limited in our ability to enforce the contractual arrangements that give us effective control over the variable interest entities. Meanwhile, there are very few precedents as to whether contractual arrangements would be judged to form effective control over the variable interest entities through the contractual arrangements, or how contractual arrangements in the context of a variable interest entity should be interpreted or enforced by the PRC courts. Furthermore, if we are unable to maintain effective control, we would not be able to continue to consolidate the financial results of these entities in our financial statements. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our Corporate Structure—We rely on contractual arrangements with the variable interest entities and their shareholders for some of our operation in China, which may not be as effective as direct ownership. If the variable interest entities and their shareholders fail to perform their obligations under these contractual arrangements, we may have to resort to litigation or other legal proceedings to enforce our rights, which may be time-consuming, unpredictable, expensive and damaging to our operations and reputation" and "Item 3. Key Information—D. Risk Factors—Risks Related to Our Corporate Structure— Our existing shareholders have substantial influence over our company and their interests may not be aligned with the interests of our other shareholders, which may discourage, delay or prevent a change in control of our company, which could deprive our shareholders of an opportunity to receive a premium for their securities."

There are also substantial uncertainties regarding the interpretation and application of current and future PRC laws, regulations and rules regarding the status of the rights of our Cayman Islands holding company with respect to its contractual arrangements with the variable interest entities and their shareholders. It is uncertain whether any new PRC laws or regulations relating to variable interest entity structures will be adopted or if adopted, what they would provide. If we or any of the variable interest entities is found to be in violation of any existing or future PRC laws or regulations, or fail to obtain or maintain any of the required permits or approvals, the relevant PRC regulatory authorities would have broad discretion to take action in dealing with such violations or failures. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Corporate Structure— If the PRC government finds that the structure we have adopted for our business operations does not comply with PRC laws and regulations, or if these laws or regulations or interpretations of existing laws or regulations change in the future, we could be subject to severe penalties, including the shutting down of our platforms and our business operations currently operated in China” and “Item 3. Key Information—D. Risk Factors—Risks Related to Our Corporate Structure— If the variable interest entities fail to obtain and maintain the requisite licenses and approvals required under the complex regulatory environment for internet-based businesses in China, our business, financial condition and results of operations in China may be adversely affected.”

Our corporate structure is subject to risks associated with our contractual arrangements with the variable interest entities. If the PRC government deems that our contractual arrangements with the variable interest entities do not comply with PRC regulatory restrictions on foreign investment in the relevant industries, or if these regulations or the interpretation of existing regulations change or are interpreted differently in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations. Our holding company, our PRC subsidiaries and consolidated variable interest entities, and investors of our company face uncertainty about potential future actions by the PRC government that could affect the enforceability of the contractual arrangements with the variable interest entities and, consequently, significantly affect the financial performance of the variable interest entities and our company as a whole. For a detailed description of the risks associated with our corporate structure, please refer to risks disclosed under “Item 3. Key Information—D. Risk Factors—Risks Related to Our Corporate Structure.”

These risks could result in a material adverse change in our operations and the value of our ADSs, significantly limit or completely hinder our ability to continue to offer securities to investors, or cause the value of such securities to significantly decline or become worthless. For a detailed description of risks related to doing business in multiple jurisdictions, please refer to risks disclosed under “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate.”

Permissions Required from the PRC Authorities for Our Operations

We conduct a portion of our business primarily through our subsidiaries and variable interest entities in China. Our operations in China are governed by PRC laws and regulations. As of the date of this annual report, our PRC subsidiaries and variable interest entities have obtained the requisite licenses and permits from the PRC government authorities that are material for the business operations of our holding company, our subsidiaries and the variable interest entities in China, including, among others, the Internet Culture Operation License, the Value-added Telecommunications Business Operation License (ICP License), the Radio and Television Program Production and Operating Permit, the License for Online Transmission of Audio-Visual Programs and the License for Surveying and Mapping. Given the uncertainties of interpretation and implementation of relevant laws and regulations and the enforcement practice by relevant government authorities, we may be required to obtain additional licenses, permits, filings or approvals for the functions and services of our platform in the future. For more detailed information, see “Item 3. Key Information—D. Risk Factors— Risks Related to Our Corporate Structure — If the variable interest entities fail to obtain and maintain the requisite licenses and approvals required under the complex regulatory environment for internet-based businesses in China, our business, financial condition and results of operations in China may be adversely affected.”

Furthermore, on December 24, 2021, the China Securities Regulatory Commission, or the CSRC, published the draft Provisions of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments), or the Administrative Provisions, and the draft of Administration Measures for the Filing of Overseas Securities Offering and Listing by Domestic Companies (Draft for Comments), or the Draft Administration Measures, for public comments. Pursuant to these drafts, “PRC domestic companies” that seek to directly or indirectly issue or list their securities overseas must file with CSRC certain required documents and “PRC domestic companies” are defined to include both (i) PRC companies limited by shares, and (ii) offshore-incorporated companies whose main business operations are in China that seek issuance of shares and listing overseas based on their onshore equity, assets or similar interests. More specifically, a “PRC domestic company” that seeks an initial public offering overseas, or a “PRC domestic company” already listed overseas who seeks to list its securities in another overseas market, must file the required documents with CSRC within three (3) business days after submitting the application documents for the foregoing transactions.

As of the date of this annual report, it remains uncertain when the final Administrative Provisions and Filing Measures will be adopted and whether they will be adopted in the current draft form. Although a majority of our business is conducted outside China, because we still have some remaining business and a substantial number of employees in China, if the Administrative Provisions and the Filing Measures are adopted in the current form, it is possible that we may be required to file the relevant documents with the CSRC, in connection with our proposed offering and listing outside China in the future.

In addition, on December 28, 2021, the Cyberspace Administration of China, or the CAC, and several other administrations jointly promulgated the Measures for Cybersecurity Review, or the Cybersecurity Review Measures, which became effective on February 15, 2022, superseding and replacing the current cybersecurity review measures that had been in effect since June 2020. The Cybersecurity Review Measures provide that (i) a "network platform operator" holding over one million users' personal information shall apply for a cybersecurity review when listing their securities "in a foreign country" (ii) a critical information infrastructure operator, or a CIIO, that intends to purchase internet products and services that affect or may affect national security should apply for a cybersecurity review, and (iii) a "network platform operator" carrying out data processing activities that affect or may affect national security should apply for a cybersecurity review. Since the Cybersecurity Review Measures are relatively new, significant uncertainties remain in relation to their interpretation and implementation. Additionally, the Cybersecurity Review Measures do not provide the exact scope of "network platform operator" or the criteria for determining which circumstance falls within the definition of "holding over one million users' personal information." Furthermore, on November 14, 2021, the CAC commenced to publicly solicit comments on the Regulations on the Administration of Cyber Data Security (Draft for Comments), or the Draft Cyber Data Security Regulation. The Draft Cyber Data Security Regulation provides that, among others, data processors that handle personal information of more than one million people contemplating to list its securities on a foreign stock exchange shall apply for cybersecurity review. As a result, it is possible that we may be required to go through cybersecurity review by the CAC. However, the Draft Cyber Data Security Regulation has not been officially enacted as of the date of this annual report and the Cybersecurity Review Measures is relatively new. It remains unclear on how these regulations will be interpreted, amended and implemented by the relevant PRC governmental authorities, how PRC governmental authorities will regulate overseas listing in general and whether we are required to obtain any specific regulatory approvals from the CSRC, CAC or any other PRC governmental authorities for our offerings outside China. Therefore, there can be no assurance that we will not be required to apply for a cybersecurity review pursuant to the Cybersecurity Review Measures. To the extent any cybersecurity review is required, we cannot assure you that we will able to complete it in a timely manner, or at all, and such approvals may be rescinded even if obtained. As of the date of this annual report, we have not been subject to any cybersecurity review under the Cybersecurity Review Measures.

If we fail to obtain the relevant approval or complete other filing or review procedures for any future offshore offering or listing, we may face sanctions by the CSRC or other PRC regulatory authorities, which may include warnings, fines, suspension of business to rectify, revocation of licenses, cancellation of filings, shutdown of our platform or even criminal liability, limitations on our operating privileges in China, restrictions on or prohibition of the payments or remittance of dividends by our subsidiaries in China, restrictions on or delays to our future financing transactions outside China, or other actions that could have a material and adverse effect on our business, financial condition, results of operations, reputation and prospects, as well as the trading price of our ADSs. For more detailed information, see "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—The approval of the CSRC or other PRC government authorities may be required in connection with our offerings outside China under PRC law, and, if required, we cannot predict whether or for how long we will be able to obtain such approval."

We currently operate in several key markets across the globe, such as North America, Europe, the Middle East, Southeast Asia, Eastern Pacific regions, and others. We face various risks and uncertainties related to doing business in multiple jurisdictions across the globe. In particular, for our operations in China, we are subject to complex and evolving PRC laws and regulations to the extent applicable. For example, we face risks associated with regulatory approvals on offerings outside China, anti-monopoly regulatory actions, and oversight on cybersecurity and data privacy. In the meanwhile, our auditor, PricewaterhouseCoopers Zhong Tian LLP, and its audit work is currently unable to be inspected independently and fully by the Public Company Accounting Oversight Board, or the PCAOB. These may impact our ability to conduct certain businesses, accept foreign investments, or list on a United States or other foreign exchange. PRC government's significant authority in regulating our operations and its oversight over offerings conducted overseas and foreign investment could significantly limit or completely hinder our ability to offer or continue to offer securities to investors. Implementation of industry-wide regulations, including data security or anti-monopoly related regulations, in this nature may cause the value of such securities to significantly decline or become worthless. Risks and uncertainties arising from the legal system in China, including risks and uncertainties regarding the enforcement of laws and quickly evolving rules and regulations in China, could result in a material adverse change in our operations in China and the value of our ADSs.

The Holding Foreign Companies Accountable Act

The Holding Foreign Companies Accountable Act, or the HFCAA, was enacted on December 18, 2020. The HFCAA states that if the SEC determines that we have filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the PCAOB for three consecutive years beginning in 2021, the SEC shall prohibit our shares or ADSs from being traded on a national securities exchange in the United States. Since our auditor is located in China, a jurisdiction where the PCAOB has been unable to conduct inspections without the approval of the Chinese authorities, our auditor is not currently inspected by the PCAOB, which may impact our ability to remain listed on a United States exchange. The related risks and uncertainties could cause the value of our ADSs to significantly decline or become worthless. For more details, see "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—The PCAOB is currently unable to inspect our auditor in relation to their audit work performed for our financial statements and the inability of the PCAOB to conduct inspections over our auditor deprives our investors of the benefits of such inspections" and "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate — Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024 if the PCAOB is unable to inspect or fully investigate auditors located in China, or in 2023 if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment."

Furthermore, on December 2, 2021, the SEC adopted final amendments implementing the disclosure and submission requirements under the HFCAA, pursuant to which the SEC will identify a "Commission-Identified Issuer" if an issuer has filed an annual report containing an audit report issued by a registered public accounting firm that the PCAOB has determined it is unable to inspect or investigate completely because of a position taken by an authority in the foreign jurisdiction, and will then impose a trading prohibition on an issuer after it is identified as a Commission-Identified Issuer for three consecutive years.

Cash and Asset Flows through Our Organization

JOYY Inc. is a holding company with no material operations of its own. We conduct our operations primarily through our subsidiaries, the variable interest entities and their subsidiaries incorporated under the laws of various jurisdictions where we have business presence. As a result, JOYY Inc.'s ability to pay dividends depends upon dividends paid by our subsidiaries, which is subject to restrictions imposed by the applicable laws and regulations in these jurisdictions. In certain jurisdictions, such as Singapore, there are currently no foreign exchange control regulations which restrict the ability of our subsidiaries in these jurisdictions to distribute dividends to us. However, the relevant regulations may be changed and the ability of these subsidiaries to distribute dividends to us may be restricted in the future. As for the jurisdiction of PRC, under the PRC laws and regulations, if our existing PRC subsidiaries or any newly formed ones incur debt on their own behalf in the future, the instruments governing their debt may restrict their ability to pay dividends to us. In addition, our wholly foreign-owned subsidiaries in China are permitted to pay dividends to us only out of its retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under the PRC laws and regulations, each of our subsidiaries and the variable interest entities in China is required to make appropriations to certain statutory reserve funds or may make appropriations to certain discretionary funds, which are not distributable as cash dividends except in the event of a solvent liquidation of the companies. For more details, see "Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources—Holding Company Structure."

We have established stringent controls and procedures for cash flows within our organization. Each transfer of cash between our Cayman Islands holding company and our subsidiaries, the variable interest entities or the subsidiaries of the variable interest entities is subject to internal approval. The cash inflows of the Cayman Islands holding company were primarily generated from the proceeds we received from our public offerings of common shares, our offerings of convertible senior notes and other financing activities.

Under the PRC laws and regulations, JOYY Inc. may provide funding to its PRC subsidiaries only through capital contributions or loans, and to the variable interest entities only through loans, subject to satisfaction of applicable government registration and approval requirements. Currently, there is no statutory limit to the amount of funding that we can provide to our PRC subsidiaries through capital contributions. However, the maximum amount we can loan to our PRC subsidiaries and the variable interest entities is subject to statutory limits. According to current PRC laws and regulations, we can provide funding to our PRC subsidiaries through loans of up to either (i) the amount of the difference between the respective registered total investment amount and registered capital of each of our PRC subsidiaries, or the Total Investment and Registered Capital Balance, or (ii) two times, or the then applicable statutory multiple, the amount of their respective net assets, calculated in accordance with PRC GAAP, or the Net Assets Limit, at our election. We may also fund the variable interest entities through cross-border loans and the maximum amount would be their respective Net Assets Limit. Increasing the Total Investment and Registered Capital Balance of our PRC subsidiaries is subject to governmental procedures and may require a PRC subsidiary to increase its registered capital at the same time. If we choose to make a loan to a PRC entity based on its Net Assets Limit, the maximum amount we would be able to loan to the relevant PRC entity would depend on the relevant entity's net assets and the applicable statutory multiple at the time of calculation. For details, see "Item 3. Key Information—D. Risk Factors— Risks Related to Doing Business in Jurisdictions We Operate— PRC regulation of direct investment and loans by offshore holding companies to PRC entities may delay or limit us from using the proceeds of public offerings to make additional capital contributions or loans to our PRC subsidiaries."

For the years ended December 31, 2019, 2020 and 2021, JOYY Inc., through its intermediate holding companies, provided capital contributions of US$0.1 million, US$7.2 million and US$7.8 million, respectively, to our subsidiaries in China.

For the years ended December 31, 2019, 2020 and 2021, JOYY Inc. provided loans of US$1,010.4 million, US$954.1 million and nil, respectively, to our intermediate holding companies and subsidiaries, and received repayments of nil, nil and US$723.3 million, respectively.

For the years ended December 31, 2019, 2020 and 2021, cash paid by the variable interest entities to our subsidiaries for the settlement of technical support fees and software transactions were US$101.3 million, US$423.6 million and US$114.6 million, respectively. For the years ended December 31, 2019, 2020 and 2021, cash received by the variable interest entities from our subsidiaries were US$26.3 million, US$25.0 million and US$129.4 million, respectively, as the revenues earned from our subsidiaries. In the future, to the extent there is any fee owed to our PRC subsidiaries under the contractual arrangements with the variable interest entities, the variable interest entities intend to settle it.

For the years ended December 31, 2019, 2020 and 2021, the variable interest entities' cash flows for investing activities provided to our subsidiaries were net cash outflows of US$84.4 million, US$104.1 million and US$35.6 million, respectively. For the year ended December 31, 2019, the variable interest entities' cash flows for financing activities provided to our subsidiaries were net cash outflows of US$51.8 million. For the years ended December 31, 2020 and 2021, the variable interest entities' cash flows for financing activities provided by our subsidiaries were net cash inflows of US$25.2 million and US$5.4 million, respectively.

For the years ended December 31, 2019, 2020 and 2021, no assets other than cash were transferred between the Cayman Islands holding company and a subsidiary, a variable interest entity or its subsidiary within our corporate structure, and no subsidiaries paid dividends or made other distributions to the holding company. For details of the financial position, cash flows and results of operations of the variable interest entities, see "—Financial Information Related to the Variable Interest Entities" and Note 4(a) to our consolidated financial statements included elsewhere in this annual report.

Under PRC laws and regulations, our PRC subsidiaries and the variable interest entities are subject to certain restrictions with respect to paying dividends or otherwise transferring any of their net assets to us. Remittance of dividends by a wholly foreign-owned enterprise out of China is also subject to examination by the banks designated by SAFE. Current PRC regulations permit our PRC subsidiaries to pay dividends to us only out of their accumulated after-tax profits upon satisfaction of relevant statutory condition and procedures, if any, determined in accordance with Chinese accounting standards and regulations. In addition, each of our PRC subsidiaries is required to set aside at least 10% of its accumulated profits each year, if any, to fund certain reserve funds until the total amount set aside reaches 50% of its registered capital. As of December 31, 2021, appropriations to statutory reserves amounting to US$26.8 million were made by twenty-nine variable interest entities. These reserves are not distributable as cash dividends. Furthermore, if our PRC subsidiaries and the variable interest entities incur debt on their own behalf in the future, the instruments governing the debt may restrict their ability to pay dividends or make other payments to us, which may restrict our ability to satisfy our liquidity requirements. In addition, the EIT Law, and its implementation rules provide that withholding tax rate of 10% will be applicable to dividends payable by Chinese companies to non-PRC-resident enterprises unless otherwise exempted or reduced according to treaties or arrangements between the PRC central government and governments of other countries or regions where the non-PRC-resident enterprises are incorporated. For details, see "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—Our PRC subsidiaries and the variable interest entities are subject to restrictions on paying dividends or making other payments to us, which may restrict our ability to satisfy our liquidity requirements." With the sale of YY Live to Baidu being substantially completed with certain customary matters, including necessary regulatory approvals from government authorities, remaining to be completed in the future, the majority of our revenue and operating cash would be from non-PRC subsidiaries, and our reliance on dividends from PRC subsidiaries would be limited.

JOYY Inc. has declared cash dividends from time to time, and plans to continue to pay cash dividends on its common shares in the foreseeable future. On August 11, 2020, our board of directors approved a quarterly dividend policy for the next three years commencing in the second quarter of 2020. Under the policy, total cash dividend amount expected to be paid will be approximately US$300 million and quarterly dividends will be set at approximately US$25 million in each fiscal quarter. On November 20, 2020, our board of directors approved an additional quarterly dividend policy for the next three years, under which the total cash dividend amount expected to be paid will be approximately US$200 million and quarterly dividend set at a fixed amount of approximately US$16.67 million in each fiscal quarter. As of March 31, 2022, we have paid dividends in an aggregate amount of US$160.1 million. See "Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Dividend Policy." For the material Cayman Islands, Singapore, PRC and U.S. federal income tax consequences of an investment in our ADSs or common shares, see "Item 10. Additional Information—E. Taxation."

Financial Information Related to the Variable Interest Entities

The following table presents the condensed consolidating schedule of financial information of JOYY Inc., the variable interest entities, the primary beneficiaries of the variable interest entities, and other equity subsidiaries for the periods and as of the dates presented.

Selected Condensed Consolidated Statements of Operations and Comprehensive Loss Data

	For the Year Ended December 31, 2021					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Inter-company revenues [1]	—	13,995	239,595	109,618	(363,208)	—
Third-party revenues	—	2,170,655	925	447,471	—	2,619,051
Total revenue	—	2,184,650	240,520	557,089	(363,208)	2,619,051
Cost of revenue	—	(1,490,718)	(62,644)	(407,727)	179,939	(1,781,150)
Total operating expenses	—	(685,945)	(201,770)	(293,959)	211,755	(969,919)
Gain (loss) on disposal of business	—	13,039	—	(8,080)	—	4,959
Other income	—	1,503	11,841	13,663	(6,631)	20,376
Share of loss of subsidiaries VIEs [2]	(117,603)	(134,745)	(104,447)	—	356,795	—
Operating income (loss)	(117,603)	(112,216)	(116,500)	(139,014)	378,650	(106,683)
Non-operating income (expense)	(6,068)	11,866	6,175	17,097	24	29,094
Loss before income tax	(123,671)	(100,350)	(110,325)	(121,917)	378,674	(77,589)
Income tax expense	—	(13,222)	(8,289)	(4,234)	—	(25,745)
loss before share of income (loss) in equity method investments, net of income taxes	(123,671)	(113,572)	(118,614)	(126,151)	378,674	(103,334)
Share of income (loss) in equity method investments, net of income taxes	7,811	(37,887)	—	3,859	—	(26,217)
Net loss from continuing operations	(115,860)	(151,459)	(118,614)	(122,292)	378,674	(129,551)
Net income from continuing operations attributable to the non-controlling interest shareholders and the mezzanine equity classified non-controlling interest shareholders	—	11,977	—	1,714	—	13,691
Net loss from continuing operations attributable to controlling interest of JOYY Inc.	(115,860)	(139,482)	(118,614)	(120,578)	378,674	(115,860)
Net income from discontinued operations attributable to controlling interest of JOYY Inc.	—	—	—	—	—	35,567
Net loss attributable to controlling interest of JOYY Inc.	—	—	—	—	—	(80,293)

	For the Year Ended December 31, 2020					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Inter-company revenues [1]	—	379,331	189,743	79,609	(648,683)	—
Third-party revenues	—	1,521,123	678	396,343	—	1,918,144
Total revenue	—	1,900,454	190,421	475,952	(648,683)	1,918,144
Cost of revenue	—	(1,094,930)	(17,938)	(515,411)	250,133	(1,378,146)
Total operating expenses	—	(700,171)	(100,985)	(514,889)	361,172	(954,873)
Other income (loss)	—	5,863	(3,950)	8,226	(2,044)	8,095
Share of loss of subsidiaries/VIEs [2]	(208,247)	(463,276)	(523,848)	—	1,195,371	—
Operating loss	(208,247)	(352,060)	(456,300)	(546,122)	1,155,949	(406,780)
Non-operating income (expense)	187,044	186,879	(875)	46,957	432	420,437
Income (Loss) before income tax	(21,203)	(165,181)	(457,175)	(499,165)	1,156,381	13,657
Income tax expense	—	(7,332)	(1,491)	(19,002)	—	(27,825)
Loss before share of income (loss) in equity method investments, net of income taxes	(21,203)	(172,513)	(458,666)	(518,167)	1,156,381	(14,168)
Share of income (loss) in equity method investments, net of income taxes	2,462	2,841	—	(12,937)	—	(7,634)
Net loss from continuing operations	(18,741)	(169,672)	(458,666)	(531,104)	1,156,381	(21,802)
Net income from continuing operations attributable to the non-controlling interest shareholders and the mezzanine equity classified non-controlling interest shareholders	—	415	—	2,646	—	3,061
Net loss from continuing operations attributable to controlling interest of JOYY Inc.	(18,741)	(169,257)	(458,666)	(528,458)	1,156,381	(18,741)
Net income from discontinued operations attributable to controlling interest of JOYY Inc.	—	—	—	—	—	1,391,638
Net income attributable to controlling interest of JOYY Inc.	—	—	—	—	—	1,372,897

	For the Year Ended December 31, 2019					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Inter-company revenues [1]	—	60,321	111,943	29,581	(201,845)	—
Third-party revenues	—	617,658	—	283,044	—	900,702
Total revenue	—	677,979	111,943	312,625	(201,845)	900,702
Cost of revenue	—	(447,605)	(17,790)	(281,599)	90,074	(656,920)
Total operating expenses	—	(564,079)	(93,487)	(232,406)	113,409	(776,563)
Gain on disposal of business	—	—	—	11,754	—	11,754
Other income	—	1,429	325	3,920	—	5,674
Share of loss of subsidiaries VIEs [2]	(25,303)	(165,818)	(168,385)	—	359,506	—
Operating income (loss)	(25,303)	(498,094)	(167,394)	(185,706)	361,144	(515,353)
Non-operating (expense) income	(39,477)	421,600	198	38,246	44	420,611
Loss before income tax	(64,780)	(76,494)	(167,196)	(147,460)	361,188	(94,742)
Income tax benefit (expenses)	—	23,127	(50)	(2,979)	—	20,098
Loss before share of income (loss) in equity method investments, net of income taxes	(64,780)	(53,367)	(167,246)	(150,439)	361,188	(74,644)
Share of income (loss) in equity method investments, net of income taxes	—	25,880	—	(19,906)	—	5,974
Net loss from continuing operations	(64,780)	(27,487)	(167,246)	(170,345)	361,188	(68,670)
Net income from continuing operations attributable to the non-controlling interest shareholders and the mezzanine equity classified non-controlling interest shareholders	—	499	—	3,391	—	3,890
Net loss from continuing operations attributable to controlling interest of JOYY Inc.	(64,780)	(26,988)	(167,246)	(166,954)	361,188	(64,780)
Net income from discontinued operations attributable to controlling interest of JOYY Inc.	—	—	—	—	—	574,592
Net income attributable to controlling interest of JOYY Inc.	—	—	—	—	—	509,812

Notes:

(1) Represents the elimination of the intercompany transaction and service charge at the consolidation level. The VIEs recognized inter-company cost of revenues and operating expenses in the amounts of US$77.7 million, US$447.3 million and US$35.9 million for the years ended December 31, 2019, 2020 and 2021, respectively, for technical support services.

(2) Represents the elimination of investments among JOYY Inc., the primary beneficiaries of VIEs, the other subsidiaries, and VIEs and their subsidiaries that we consolidate.

Selected Condensed Consolidated Balance Sheets Data

	As of December 31, 2021					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Assets						
Cash and cash equivalents	615	1,287,290	115,875	433,405	—	1,837,185
Restricted cash	—	289,658	—	7,364	—	297,022
Short-term deposits	—	1,263,843	31,369	308,986	—	1,604,198
Restricted short-term deposits	—	285	—	—	—	285
Short-term investments	193,925	400,744	62,930	288,944	—	946,543
Accounts receivable	—	108,469	23	5,880	—	114,372
Prepayments and other current assets	—	106,748	5,812	101,173	—	213,733
Amounts due from Group companies [1]	1,416,481	69,112	242,517	263,373	(1,991,483)	—
Investments in subsidiaries [2]	4,211,891	2,444,874	53,357	—	(6,710,122)	—
Investments in VIEs [2]	—	—	1,929,014	—	(1,929,014)	—
Long-term investments	648,153	104,655	34,370	235,277	—	1,022,455
Property, plant and equipment, net	—	117,037	76,524	171,831	—	365,392
Land use rights, net	—	—	—	370,052	—	370,052
Intangible assets, net	—	266,375	10,261	58,893	(23,447)	312,082
Goodwill	—	1,958,263	—	—	—	1,958,263
Other assets	—	14,296	48,484	15,650	—	78,430
Total assets						9,120,012
Liabilities and shareholders'equity Liabilities						
Convertible bonds	924,077	—	—	—	—	924,077
Deferred tax liabilities	—	27,109	—	9,105	—	36,214
Accounts payable	—	3,454	357	14,200	—	18,011
Deferred revenue	—	49,119	491	17,722	—	67,332
Income taxes payable	13,573	26,322	237	25,606	—	65,738
Accrued liabilities and other current liabilities	5,087	2,160,029	66,397	114,325	—	2,345,838
Amounts due to Group companies [1]	—	1,822,123	37,475	131,887	(1,991,485)	—
Other liabilities	—	12,345	7,348	14,811	—	34,504
Total liabilities						3,491,714
Mezzanine equity	—	65,833	—	—	—	65,833
Shareholders' equity						
Total JOYY Inc.'s shareholders' equity	5,528,328	4,235,336	2,498,231	1,929,014	(8,662,581)	5,528,328
Non-controlling interests	—	29,979	—	4,158	—	34,137
Total shareholders' equity	5,528,328	4,265,315	2,498,231	1,933,172	(8,662,581)	5,562,465
Total liabilities, mezzanine equity and shareholders' equity						9,120,012

	As of December 31, 2020					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Assets						
Cash and cash equivalents	2,416	1,307,477	184,556	248,300	—	1,742,749
Restricted cash	—	13,197	—	536	—	13,733
Short-term deposits	—	640,000	15,326	669,742	—	1,325,068
Restricted short-term deposits	—	639	198	30,652	—	31,489
Short-term investments	51,000	72,499	98,955	266,647	—	489,101
Accounts receivable	—	117,073	41	25,885	—	142,999
Prepayments and other current assets	312	34,446	12,521	55,593	—	102,872
Amounts due from Group companies [1]	1,952,122	51,380	314,587	364,025	(2,682,114)	—
Investments in subsidiaries [2]	4,395,322	2,516,501	16,988	—	(6,928,811)	—
Investments in VIEs [2]	—	—	2,033,976	—	(2,033,976)	—
Long-term investments	631,387	187,487	38,613	381,867	—	1,239,354
Property, plant and equipment, net	—	165,453	79,714	156,494	—	401,661
Land use rights, net	—	—	—	258,770	—	258,770
Intangible assets, net	—	283,854	15,687	84,236	(39,563)	344,214
Goodwill	—	1,872,083	—	—	—	1,872,083
Other assets	—	37,251	1,219	14,366	—	52,836
Assets held for sale						78,028
Total assets						8,094,957
Liabilities and shareholders' equity Liabilities						
Convertible bonds	779,225	—	—	—	—	779,225
Deferred tax liabilities	—	31,556	—	10,866	—	42,422
Accounts payable	—	4,433	478	16,045	—	20,956
Deferred revenue	—	51,132	603	18,627	—	70,362
Income taxes payable	13,861	6,340	21,202	19,492	—	60,895
Accrued liabilities and other current liabilities	4,063	273,917	98,020	108,450	—	484,450
Short-term loans	—	—	10,011	102,538	—	112,549
Amounts due to Group companies [1]	—	2,383,285	147,392	151,073	(2,681,750)	—
Other liabilities	—	16,877	1,186	8,987	—	27,050
Liabilities held for sale						183,524
Total liabilities						1,781,433
Mezzanine equity	—	72,617	—	—	—	72,617
Shareholders' equity						
Total JOYY Inc.'s shareholders' equity	6,235,410	4,458,482	2,533,489	2,033,976	(9,025,947)	6,235,410
Non-controlling interests	—	5,862	—	(365)	—	5,497
Total shareholders' equity	6,235,410	4,464,344	2,533,489	2,033,611	(9,025,947)	6,240,907
Total liabilities, mezzanine equity and shareholders' equity						8,094,957

Notes:

(1) Represents the elimination of intercompany balances among JOYY Inc., the primary beneficiaries of VIEs, the other subsidiaries, and the VIEs and their subsidiaries that we consolidate. Unsettled balance related to technology service fees payable by VIEs to our subsidiaries amounted to US$121.4 million and US$66.8 million as of December 31, 2020 and 2021, respectively.

(2) Represents the elimination of investments among JOYY Inc., the primary beneficiaries of VIEs, the other subsidiaries, and VIEs and their subsidiaries that we consolidate.

Selected Condensed Consolidated Cash Flows Data

	For the Year Ended December 31, 2021					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Net cash provided by (used in) transactions with external parties	—	393,061	(400,649)	153,715	—	146,127
Net cash provided by (used in) transactions with intra-Group entities	—	(302,728)	225,409	77,319	—	—
Net cash provided by (used in) continuing operating activities [1]	—	90,333	(175,240)	231,034	—	146,127
Net cash provided by (used in) discontinued operating activities	—	(1,404)	37,207	28,486	—	64,289
Net cash provided by (used in) operating activities	**—**	**88,929**	**(138,033)**	**259,520**	**—**	**210,416**
Net cash provided by (used in) transactions with external parties	(104,264)	(978,039)	65,334	170,112	—	(846,857)
Net cash provided by (used in) transactions with intra-Group entities	—	(758,196)	47,051	(35,559)	746,704	—
Net cash provided by (used in) continuing investing activities [1]	(104,264)	(1,736,235)	112,385	134,553	746,704	(846,857)
Net cash provided (used in) discontinued investing activities	—	1,831,847	(11,403)	(183,994)	—	1,636,450
Net cash provided by (used in) investing activities	**(104,264)**	**95,612**	**100,982**	**(49,441)**	**746,704**	**789,593**
Net cash provided by (used in) transactions with external parties	(620,839)	5,508	(11,007)	(97,198)	—	(723,536)
Net cash provided by (used in) transactions with intra-Group entities	723,302	60,137	(42,113)	5,378	(746,704)	—
Net cash provided by (used in) continuing financing activities [1]	102,463	65,645	(53,120)	(91,820)	(746,704)	(723,536)
Net cash used in discontinued financing activities	—	—	—	—	—	—
Net cash provided by (used in) financing activities	**102,463**	**65,645**	**(53,120)**	**(91,820)**	**(746,704)**	**(723,536)**

	For the Year Ended December 31, 2020					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Net cash provided by (used in) transactions with external parties	—	(32,982)	104,095	(73,830)	—	(2,717)
Net cash provided by (used in) transactions with intra-Group entities	—	314,557	30,301	(344,858)	—	—
Net cash provided by (used in) continuing operating activities (1)	—	281,575	134,396	(418,688)	—	(2,717)
Net cash provided by discontinued operating activities	—	89,804	—	408,059	—	497,863
Net cash provided by (used in) operating activities	**—**	**371,379**	**134,396**	**(10,629)**	**—**	**495,146**
Net cash provided by (used in) transactions with external parties	760,322	(16,184)	(6,181)	(47,787)	—	690,170
Net cash (used in) provided by transactions with intra-Group entities	(954,102)	16,776	(49,718)	(104,111)	1,091,155	—
Net cash provided by (used in) continuing investing activities (1)	(193,780)	592	(55,899)	(151,898)	1,091,155	690,170
Net cash provided by (used in) discontinued investing activities	262,681	(177,572)	—	7,262	—	92,371
Net cash provided by (used in) investing activities	**68,901**	**(176,980)**	**(55,899)**	**(144,636)**	**1,091,155**	**782,541**
Net cash (used in) provided by transactions with external parties	(66,743)	(130,275)	38,594	21,690	—	(136,734)
Net cash provided by transactions with intra-Group entities	—	1,019,855	46,081	25,219	(1,091,155)	—
Net cash (used in) provided by continuing financing activities (1)	(66,743)	889,580	84,675	46,909	(1,091,155)	(136,734)
Net cash provided by discontinued financing activities	—	1,232	—	—	—	1,232
Net cash provided by (used in) financing activities	**(66,743)**	**890,812**	**84,675**	**46,909**	**(1,091,155)**	**(135,502)**

	For the Year Ended December 31, 2019					
	The Company	Equity Subsidiaries	Primary Beneficiaries of VIEs	VIEs and VIEs' Subsidiaries	Eliminations	Consolidated
	(US$ in thousands)					
Net cash used in transactions with external parties	—	(79,011)	(67,152)	(31,422)	—	(177,585)
Net cash provided by (used in) transactions with intra-Group entities	—	(4,647)	35,825	(31,178)	—	—
Net cash used in continuing operating activities [(1)]	**—**	(83,658)	(31,327)	(62,600)	—	(177,585)
Net cash provided by discontinued operating activities	**—**	35,567	77,068	731,078	—	843,713
Net cash provided by (used in) operating activities	**—**	**(48,091)**	**45,741**	**668,478**	**—**	**666,128**
Net cash used in transactions with external parties	(1,572)	(1,163,957)	9,637	(546,963)	—	(1,702,855)
Net cash provided by (used in) transactions with intra-Group entities	(1,010,395)	51,397	(7,769)	(84,393)	1,051,160	—
Net cash used in continuing investing activities [(1)]	(1,011,967)	(1,112,560)	1,868	(631,356)	1,051,160	(1,702,855)
Net cash used in discontinued investing activities	—	(295,286)	(208,933)	(301,566)	242,951	(562,834)
Net cash used in investing activities	**(1,011,967)**	**(1,407,846)**	**(207,065)**	**(932,922)**	**1,294,111**	**(2,265,689)**
Net cash provided by transactions with external parties	1,012,072	14,756	—	39,458	—	1,066,286
Net cash provided by (used in) transactions with intra-Group entities	—	1,073,697	29,311	(51,848)	(1,051,160)	—
Net cash provided by continuing financing activities [(1)]	1,012,072	1,088,453	29,311	(12,390)	(1,051,160)	1,066,286
Net cash provided by (used in) discontinued financing activities	—	418,515	132,730	(75)	(242,951)	308,219
Net cash provided by financing activities	**1,012,072**	**1,506,968**	**162,041**	**(12,465)**	**(1,294,111)**	**1,374,505**

Note:

(1) Represents the elimination of the net cash provided by (used in) operating activities, investing activities and financing activities of JOYY Inc., the primary beneficiaries of VIEs, the other subsidiaries, and the VIEs and their subsidiaries that we consolidate. For the years ended December 31, 2019, 2020 and 2021, cash paid by the VIEs to our subsidiaries for the settlement of technical support fees were US$57.5 million, US$369.9 million and US$52.1 million, respectively.

A. Reserved

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Summary of Risk Factors

An investment in our ADSs is subject to a number of risks, including risks related to our business and industry, risks related to doing business in jurisdictions we operate, risks related to our corporate structure and risks related to our ADSs. The following summarizes some, but not all, of these risks. Please carefully consider all of the information discussed in “Item 3. Key Information—D. Risk Factors” in this annual report for a more thorough description of these and other risks.

Risks Related to Our Business and Industry

- We are subject to risks associated with operating in a rapidly developing industry and an evolving market.
- If we fail to effectively manage our growth or implement our business strategies, our business and results of operations may be materially and adversely affected.
- We face risks associated with the sale of YY Live to Baidu.
- We have a limited operating history for some of our businesses, and you should consider our prospects in light of the risks and uncertainties which early-stage companies in evolving industries globally may be exposed to or encounter, including possible volatility in the trading prices of our ADSs.
- We generate a substantial majority of our revenue from live streaming services. If our live streaming revenue declines in the future, our results of operations may be materially and adversely affected.
- We may face significant risks related to the content and communications on our platforms.
- The revenue model for each of our live streaming and our membership program may not remain effective, which may affect our ability to retain existing users and attract new users and materially and adversely affect our business, financial condition and results of operations.
- We generate a portion of our revenues from online advertising. If we fail to attract more advertisers to our platforms or if advertisers are less willing to advertise with us, our revenues may be adversely affected.
- Our business is subject to complex and evolving Chinese and international laws and regulations regarding cybersecurity, information security, privacy and data protection. Many of these laws and regulations are subject to change and uncertain interpretation, and any failure or perceived failure to comply with these laws and regulations could result in claims, changes to our business practices, negative publicity, legal proceedings, increased cost of operations, or declines in user growth or engagement, or otherwise harm our business.
- We face competition in several major aspects of our business. If we fail to compete effectively, we may lose users and advertisers which could materially and adversely affect our business, financial condition and results of operations.

Risks Related to Doing Business in Jurisdictions We Operate

- We are subject to the risks of doing business globally.
- We face risks and uncertainties to comply with the laws, regulations and rules in various aspects in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. Failure to comply with such applicable laws, regulations and rules may subject our global operations to strict scrutiny by local authorities, which in turn may materially and adversely affect our globalized operations.
- Fluctuations in foreign currency exchange rates may adversely affect our operational and financial results, which we report in U.S. dollars.

- The PRC government's significant oversight over our business operation could result in a material adverse change in our operations in China and the value of our ADSs and common shares.
- The PCAOB is currently unable to inspect our auditor in relation to their audit work performed for our financial statements and the inability of the PCAOB to conduct inspections over our auditor deprives our investors with the benefits of such inspections.
- Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024 if the PCAOB is unable to inspect or fully investigate auditors located in China, or in 2023 if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment.
- The approval of the CSRC or other PRC government authorities may be required in connection with our offerings outside China under PRC law, and, if required, we cannot predict whether or for how long we will be able to obtain such approval.

Risks Related to Our Corporate Structure

- If the PRC government finds that the structure we have adopted for our business operations does not comply with PRC laws and regulations, or if these laws or regulations or interpretations of existing laws or regulations change in the future, we could be subject to severe penalties, including the shutting down of our platforms and our business operations currently operated in China.
- We rely on contractual arrangements with the variable interest entities and their shareholders for some of our operation in China, which may not be as effective as direct ownership. If the variable interest entities and their shareholders fail to perform their obligations under these contractual arrangements, we may have to resort to litigation or other legal proceedings to enforce our rights, which may be time-consuming, unpredictable, expensive and damaging to our operations and reputation.
- Our existing shareholders have substantial influence over our company and their interests may not be aligned with the interests of our other shareholders, which may discourage, delay or prevent a change in control of our company, which could deprive our shareholders of an opportunity to receive a premium for their securities.
- The shareholders of our PRC variable interest entities may have potential conflicts of interest with us, and if any such conflicts of interest are not resolved in our favor, our business may be materially and adversely affected.

Risks Related to Our ADSs

- The trading prices of our ADSs are likely to be volatile, which could result in substantial losses to investors.
- Techniques employed by short sellers may drive down the market price of our listed securities.
- We may be named as a defendant in putative shareholder class action lawsuits and may be subject to the SEC or third-party investigations which could have a material adverse impact on our business, financial condition, results of operation, cash flows and reputation.
- We believe that we were a passive foreign investment company, or PFIC, for United States federal income tax purposes for the taxable year ended December 31, 2021, which could subject United States holders of our ADSs or Class A common shares to significant adverse United States income tax consequences.
- Our dual class common share structure with different voting rights will limit your ability to influence corporate matters and could discourage others from pursuing any change of control transactions that holders of our Class A common shares and ADSs may view as beneficial.

Risks Related to Our Business and Industry

We are subject to risks associated with operating in a rapidly developing industry and an evolving market.

Many of the elements of our business are unique, evolving and relatively unproven. Our business and prospects depend on continuing development of the online social entertainment industry of the world. The market for our services is rapidly developing and evolving, also subject to significant challenges. The success of our business heavily relies on the size and engagement level of our user base, and our ability to successfully monetize our user base and products and services. Developing and integrating new content and services could be expensive and time-consuming, and our efforts in those aspects may not yield the benefits we expect to achieve in a timely manner, or at all. We cannot assure you that we will continue to succeed in the online social entertainment industry or such industry will continue to grow as rapidly as it did in the past.

As users are facing a growing number of entertainment options that directly or indirectly compete with online social entertainment services that we offer, such as live streaming, these services may not maintain or increase their current popularity. Growth of the online social entertainment industry is affected by numerous factors, such as content quality, user experience, technological innovations, development of internet and internet-based services, regulatory environment, and macroeconomic environment. If the online entertainment services that we offer, such as live streaming, as forms of entertainment lose their popularity due to changing social trends and consumer preferences, or if the global online social entertainment market does not grow as quickly as expected, our results of operation and financial condition may be materially and adversely affected.

If we fail to effectively manage our growth or implement our business strategies, our business and results of operations may be materially and adversely affected.

We have experienced a period of significant rapid growth and expansion that has placed, and continues to place, significant strain on our management and resources. We cannot assure you that this level of significant growth will be sustainable or achieved at all in the future. We believe that our continued growth will depend on our ability to develop new sources of revenue, increase monetization, attract new users, retain and expand paying users, encourage additional purchases by our paying users, continue developing innovative products, services and technologies in response to user demand, increase brand awareness through marketing and promotional activities, react to changes in user access to and use of the internet, expand into new market segments, integrate new devices, platforms and operating systems, develop new advertising and promotion methods, attract new advertisers and retain existing advertisers and take advantage of any growth in the relevant markets. We cannot assure you that we will achieve any of the above or achieve any of the above in a cost-effective manner.

To manage our growth and maintain profitability, we anticipate that we will need to continue to implement, from time to time, a variety of new and upgraded operational and financial systems, procedures and controls on an as-needed basis. We will also need to further expand, train, manage and motivate our workforce and manage our relationships with users, performers, third-party game developers, advertisers media platforms and other business partners. All of these endeavors involve risks and will require substantial management efforts and skills and significant additional expenditures. We cannot assure you that we will be able to effectively manage our growth or implement our future business strategies, and failure to do so may materially and adversely affect our business and results of operations.

We face risks associated with the sale of YY Live to Baidu.

On November 16, 2020, we entered into definitive agreements with Baidu, Inc., or Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu agreed to acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. In August 2021, December 2021 and April 2022, we and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties. As of the date of this annual report, Baidu has paid an aggregate amount of US$1.9 billion to us and our designated escrow account, and the necessary regulatory approval with respect to the proposed acquisitions has not been obtained yet.

On November 18, 2020, Muddy Waters Capital LLC, an entity unrelated to us, issued the Muddy Water short seller report (the "Report") containing certain allegations against us, including YY Live business. Our audit committee has conducted an independent review of the allegations raised in the Report related to our YY Live business, with the assistance of independent counsel, working with a team of experienced forensic auditors and data analytics experts. Our announcement dated February 8, 2021 disclosed the conclusion of the independent review, which concluded that the allegations raised and conclusions reached in the Report about our YY Live business were not substantiated. But even if the allegations against us may ultimately be proven to be groundless, we have incurred and may continue to incur resources to address fallout from the Report. On November 20, 2020, we and certain of our directors and officers were named in a federal putative securities class action alleging that we have made material misstatements and omissions in documents filed with the SEC regarding certain of the allegations contained in the Report. On March 9, 2022, the court granted the defendants' motion to dismiss and dismissed the operative complaint in its entirety with prejudice. On April 8, 2022, the co-lead plaintiffs filed a notice of appeal. We are not able to predict the final outcome of such class action and there might be other class actions or regulatory enforcement actions in connection with such allegations. We are not able to predict the possible consequence that may arise from or relate in any way to the allegations contained in the Report. Any adverse outcome as a result of the Report, or any class action or regulatory enforcement action in connection thereof, could have a material adverse effect on our and YY Live's business, financial condition, results of operation, cash flows, and reputation.

The sale of YY Live to Baidu, which was substantially completed though certain customary matters remaining to be completed in the future, may adversely affect our business, financial condition or results of operations, and could result in the loss of our online users and key employees for our remaining business in China. The deconsolidation of YY Live may adversely affect our results of operations and future development strategy. Together with the transaction, we have entered into a non-compete undertaking with Baidu and its affiliates, which may pose potential restrictions to our video-based entertainment livestreaming business in China and may adversely affect our relationship with existing partners and may have an adverse effect on our future growth prospects in the China market. After the closing and certain customary matters to be completed, there can be no assurance that we may achieve anticipated strategic benefits and we may still experience negative reactions as a result of the sale of the business of YY Live.

We have a limited operating history for some of our businesses, and you should consider our prospects in light of the risks and uncertainties which early-stage companies in evolving industries globally may be exposed to or encounter, including possible volatility in the trading prices of our ADSs.

We have a limited operating history upon which to evaluate the viability and sustainability of our businesses. Our historical results may not be indicative of our future performance. We introduced Bigo in 2019 and has been evolving constantly with the introduction of new businesses globally. As a result of our relatively short history and introduction of new businesses, our historical results of operations may not provide a meaningful basis for evaluating our business, financial performance and future prospects. We may not be able to achieve similar growth rates in future periods as we had witnessed historically. Accordingly, you should not rely on our results of operations for any prior periods as an indication of our future performance. We may again incur net losses and experience adverse impact on our results of operations brought on by our new businesses in the future and you should consider our prospects in light of the risks and uncertainties which early-stage companies in evolving industries globally with limited operating history may be exposed to or encounter, including risks associated with being a public company with global business operations. See "—Risks Related to Our ADSs—The trading prices of our ADSs are likely to be volatile, which could result in substantial losses to investors."

As we have discontinued Huya and YY Live from our results of operations in August 2020 and February 2021, respectively, our results of operations have been and may continue to be adversely affected by such dispositions. As a result of the discontinuation of Huya and YY Live, we recorded net losses of US$125.1 million from continuing operations attributable to common shareholders of JOYY in 2021. Therefore, we were not profitable on a continuing operation basis in 2021. Although our core business segment Bigo has started to generate profit and achieved net income of US$103.8 million in 2021, Bigo historically incurred net losses or had relatively lower profit margins, and it is possible that it may continue to have similar impact to our results of operations in the future due to relatively lower margins or loss making. We may incur significant costs and expenses in many aspects of our business, such as sales and marketing expenses to acquire users and raise our brand awareness, as well as research and development costs to update existing services and launch new services and rising bandwidth costs to support our video function, grow our user base and generally expand our business operations.

Our profitability is also affected by other factors beyond our control, such as the continual development of the industries in which we operate in multiple countries, changes in the macroeconomic and regulatory environment or competitive dynamics and our inability to respond to these changes in a timely and effective manner. The continued success of our business depends on our ability to identify which services will appeal to our user base and to offer such services on commercially acceptable terms. Our ability to finance our planned expansion also depends in part on our ability to convert active users into paying users and increase the average revenue per paying user, or ARPU, and successfully compete in a very competitive market. We may continue to incur net losses in the future.

We generate a substantial majority of our revenue from live streaming services. If our live streaming revenue declines in the future, our results of operations may be materially and adversely affected.

Historically, a substantial majority of our revenues are from live streaming service, membership subscription fees and advertisement. In the year ended December 31, 2021, revenues from live streaming constituted 94.6% of our total net revenue. We expect that the majority of our revenue will continue to be contributed from live streaming services in the near future. Any decline in live streaming revenues may materially and adversely affect our results of operations. See "—The revenue model for each of our live streaming and our membership program may not remain effective, which may affect our ability to retain existing users and attract new users and materially and adversely affect our business, financial condition and results of operations."

We may face significant risks related to the content and communications on our platforms.

Our live streaming, short-form video and video communication platforms enable users to exchange information, generate and distribute content, advertise products and services, conduct business and engage in various other online activities. However, because a majority of the communications on our platforms are conducted in real time, we are unable to verify the sources of all information posted thereon or examine the content generated by users before it is posted. Therefore, it is possible that users may engage in illegal, obscene or incendiary conversations or activities, including the publishing of inappropriate, infringing or illegal content on our platforms that may be deemed unlawful. If any content on our platforms is considered or deemed illegal, obscene, infringing or incendiary, or if appropriate licenses and third-party consents have not been obtained, allegations or claims may be brought against us for defamation, libel, negligence, copyright, patent or trademark infringement, other unlawful activities or based on other theories. For example, we have occasionally received fines for certain inappropriate materials placed by third parties on our platforms, and may be subject to similar fines and penalties in the future. In April 2019, Bilin, a mobile instant communication application of ours that contributed an insignificant portion of our total revenues, in accordance with the requirements of the Office of the Cyberspace Affairs Commission, ceased its services. Additionally, in September 2021, *Hello*, our real-time voice interactive platform operated in China was temporarily removed from the app store at the request of the Office of the Central Cyberspace Affairs Commission and is rectifying proactively. We also may face liability for copyright or trademark infringement, fraud, and other claims based on the nature and content of the materials that are delivered, shared or otherwise accessed through or published on our platforms. Defending any such actions could be costly and involve significant time and attention of our management and other resources. If they find that we have not adequately managed the content on our platforms, or if any of our platforms fails to comply with any of such provisions, jurisdictional authorities in various regions may impose legal sanctions on us, including, interviews held by relevant cyberspace authorities, warnings, information update suspension, and in serious cases, suspending or revoking the licenses necessary to operate our platforms, restriction from engaging in internet information services, online behavior restrictions or industry bans.

In addition, our content monitoring system may not be effective in preventing misconduct by our platform users and misuse of our platform and such misconduct or misuse may materially and adversely impact our brand image, business, financial condition and results of operations. Because we do not have full control over how and what users will use our platform to communicate, our platform may be misused by individuals or groups of individuals to engage in immoral, disrespectful, fraudulent or illegal activities. For example, we detect spam accounts through which illegal or inappropriate content is streamed or posted and illegal or fraudulent activities are conducted on a timely basis. Media reports and internet forums have covered some of these incidents, which have in some cases generated negative publicity about our platform and brand. We have implemented control procedures to detect and block illegal or inappropriate content and illegal or fraudulent activities conducted through the misuse of our platform, but such procedures may not prevent all such content from being broadcasted or posted or activities from being carried out. Moreover, as we have limited control over real-time and offline behavior of our users, to the extent such behavior is associated with our platform, our ability to protect our brand image and reputation may be limited. Our business and the public perception of our brand may be materially and adversely affected by misuse of our platform. In addition, if any of our users suffers or alleges to have suffered physical, financial or emotional harm following contact initiated on our platform or after watching unsettling or inappropriate content that our content monitoring system failed to filter out, we may face civil lawsuits or other liabilities initiated by the affected viewer, or governmental or regulatory actions against us. In response to allegations of illegal or inappropriate activities conducted through our platform or any negative media coverage about us, government authorities may intervene and hold us liable for non-compliance with relevant laws and regulations concerning the dissemination of information on the internet and subject us to administrative penalties or other sanctions, such as requiring us to restrict or discontinue some of the features and services provided on our website and mobile application, or even revoke our licenses or permits to provide internet content service. We endeavor to ensure all users are in compliance with relevant regulations, but we cannot guarantee that all users will comply with all the relevant laws and regulations. Therefore, we may be subject to investigations or subsequent penalties if content displayed on our platform is deemed to be illegal or inappropriate under relevant laws and regulations. As a result, our business may suffer and our user base, revenues and profitability may be materially and adversely affected.

As our international operations continue to expand, we face significant challenges to ensure the content and communications on our platform are in compliance with local jurisdiction's regulatory framework and social environment, many of which could be substantially different from each other due to the differences in, among others, the legal system, political environment, culture and religion. Such differences may impose more stringent requirements and restrictions to the content we presented. In addition, the regulatory framework for live streaming, short-form video or video communication is still developing and remains uncertain in several countries where we have operations, including, but not limited to, countries such as Saudi Arabia, Indonesia and India. New laws and regulations may also be adopted from time to time to address new issues that come to the government authorities' attention. Considerable uncertainties still exist with respect to the interpretation and implementation of existing and future laws and regulations governing our business activities in these areas. In addition, we may be required to impose more stringent content monitoring measures, be in compliance with relevant content regulatory regime, obtain relevant licenses or permits or renew or expand the coverage of our existing licenses, and we cannot assure you that we will be able to timely obtain or maintain all the required licenses or permits or make any necessary filings applicable in the future, or comply with other relevant regulatory requirements. If we fail to obtain, hold or maintain any of the required licenses or permits or make the necessary filings on time or at all, or fail to comply with other regulatory requirements, we may be subject to various penalties, including fines, discontinuation restriction of our operations as well as reputation damage. Cultural differences may also impose additional challenges to our efforts in content control. Therefore, such different and possibly more stringent regulatory and cultural environments may increase the risk exposure to our daily operations in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. We have experienced incidents in the past where our application was temporarily suspended in certain markets due to inappropriate content being displayed on our platform. We have also received claims in connection with intellectual property infringement and entered into settlement or license agreements with third parties or are in the process of negotiating such agreements with third parties to resolve such claims. Such incidents or similar incidents related to our failure to comply with laws, regulations and rules in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. could materially and adversely affect our business, results of operations, global reputation and global growth efforts. Requirements of entering into license or settlement agreements may also significantly increase our costs of operations and adversely affect our business results. In addition, each jurisdiction may have a different regulatory framework, implementation and enforcement for live streaming or short-form video or video communication business, which may substantially increase our compliance costs to obtain, maintain or renew requisite licenses and permits or fulfill any required administrative procedures.

The revenue model for each of our live streaming and our membership program may not remain effective, which may affect our ability to retain existing users and attract new users and materially and adversely affect our business, financial condition and results of operations.

We offer live streaming services to our users through multiple platforms using a virtual items-based revenue model whereby users can make real-time broadcast to share life moments, show their talents, interact and send virtual gifts, and enjoy fun live sessions with people worldwide. We have generated, and expect to continue to generate, a substantial majority of our live streaming revenues using this revenue model. In 2021, revenues from live streaming contributed 94.6% of our total net revenues. Our live streaming business has experienced significant growth in recent years, but we cannot assure you that we will continue to achieve a similar growth rate in the future, as the user demand for this service may change, decrease substantially or dissipate, or we may fail to anticipate and serve user demands effectively.

We may not be able to continue to successfully implement the virtual items-based revenue model for live streaming, as users may not be able to develop new relationships in the community, or popular performers, channel owners, and famous professional game teams may leave our platforms and we may be unable to attract new talent that can attract users or cause such users to increase the amount of time spent engaging and money spent on purchasing in-channel virtual items on our platforms. In addition, certain content on our live streaming platforms, such as certain online games owned by or licensed to certain gaming companies or publishers, may not continue to be available to our users for live streaming purposes. Failure to keep our users engaged in the live streaming service may result in reducing average revenue per user and the number of paying users, which may adversely affect our financial condition and results of operations.

Furthermore, under our current arrangements with certain talent performers, agencies, channel owners and famous professional game teams, we share with them a portion of the revenues we derive from the sales of in-channel virtual items on our live streaming platform. In turn, this may affect the user and revenue growth in this business, which may materially and adversely affect our financial condition and results of operations.

In addition, we have been a pioneer in offering an online concert platform to music performers and platform users. We also continue to focus on the development of professionally-curated user generated content, or PUGC, and professionally generated content, or PGC, as well as introducing more e-sports content on our platforms. However, if our users decide to access live streaming content provided by our current or future competitors, our business, financial condition and results of operations could be materially and adversely affected.

Users may also purchase time-based virtual items from us, such as the membership subscription service with the designation of Noble Members for themselves. We offer a range of privileges and benefits, such as virtual items exclusively available to members, dedicated customer services specialist and priority entrance to certain live performances. However, we may not be able to further build or maintain our membership base in the future for various reasons—for example, if we fail to continue to provide innovative products and services that are attractive to members, we may not be able to retain them and our business, financial condition and results of operations could be adversely affected.

We generate a portion of our revenues from online advertising. If we fail to attract more advertisers to our platforms or if advertisers are less willing to advertise with us, our revenues may be adversely affected.

We generate a portion of our revenues from online advertising. Although we have become less dependent upon online advertising revenues due to a shift in the majority of our revenues from online advertising to live streaming service, our revenues still partly depend on the continual development of the online advertising industry and advertisers' allocation of budgets to internet advertising. In addition, companies that decide to advertise or promote online may utilize more established methods or channels for online advertising, such as more established internet portals or search engines, over advertising on our platforms. If the online advertising market size does not increase from current levels, or if we are unable to capture and retain a sufficient share of that market, our ability to maintain or increase our current level of online advertising revenues and our profitability and prospects could be adversely affected.

We offer advertising services substantially through contracts entered into with third-party advertising agencies and by way of displaying advertisement on our websites and platforms or providing promotion integrated into the programs, shows or other content offered on our platforms. We cannot assure you that we will be able to retain existing direct advertisers or advertising agencies or attract new direct advertisers and advertising agencies. Since our arrangements with third-party advertising agencies typically involve one-year framework agreements, these advertising arrangements may be easily amended or terminated without incurring liabilities. If we fail to retain existing advertisers and advertising agencies or attract new direct advertisers and direct advertising agencies or any of our current advertising methods or promotion activities become less effective, our business, financial condition and results of operations may be adversely affected.

Our business is subject to complex and evolving Chinese and international laws and regulations regarding cybersecurity, information security, privacy and data protection. Many of these laws and regulations are subject to change and uncertain interpretation, and any failure or perceived failure to comply with these laws and regulations could result in claims, changes to our business practices, negative publicity, legal proceedings, increased cost of operations, or declines in user growth or engagement, or otherwise harm our business.

Our business generates and processes a large quantity of data. We face risks inherent in handling and protecting large volume of data. In particular, we face a number of challenges relating to data from transactions and other activities on our platforms, including:

- protecting the data in and hosted on our system, including against attacks on our system by outside parties or fraudulent behavior or improper use by our employees;
- addressing concerns related to privacy and sharing, safety, security and other factors; and
- complying with applicable laws, rules and regulations relating to the collection, use, storage, transfer, disclosure and security of personal information, including any requests from regulatory and government authorities relating to these data.

In general, we expect that data security and data protection compliance will receive greater attention and focus from regulators, both domestically and globally, as well as attract continued or greater public scrutiny and attention going forward, which could increase our compliance costs and subject us to heightened risks and challenges associated with data security and protection. If we are unable to manage these risks, we could become subject to penalties, including fines, suspension of business and revocation of required licenses, and our reputation and results of operations could be materially and adversely affected.

For our operations in China, the PRC regulatory and enforcement regime with regard to data security and data protection is evolving and may be subject to different interpretations or significant changes. Moreover, different PRC regulatory bodies, including the Standing Committee of the NPC, the Ministry of Industry and Information Technology, or the MIIT, the CAC, the Ministry of Public Security, or the MPS, and the State Administration for Market Regulation, or the SAMR, have enforced data privacy and protections laws and regulations with varying standards and applications. See “Item 4. Information on the Company—B. Business Overview—Regulations—PRC Regulation—Information Security and Censorship,” “Item 4. Information on the Company—B. Business Overview—Regulations—PRC Regulation—Privacy Protection,” and “Item 4. Information on the Company—B. Business Overview—Regulations—PRC Regulation— Regulations on Overseas Listing by Domestic Companies.” The following are examples of certain recent PRC regulatory activities in this area:

Data Security

- In June 2021, the Standing Committee of the NPC promulgated the PRC Data Security Law, which took effect in September 2021. The PRC Data Security Law, among other things, provides for security review procedure for data-related activities that may affect national security. In July 2021, the State Council promulgated the Regulations on Protection of Critical Information Infrastructure, which became effective on September 1, 2021. Pursuant to this regulation, critical information infrastructure means key network facilities or information systems of critical industries or sectors, such as public communication and information service, energy, transportation, water conservation, finance, public services, e-government affairs and national defense science, the damage, malfunction or data leakage of which may endanger national security, people's livelihoods and the public interest. In December 2021, the CAC, together with other authorities, jointly promulgated the Cybersecurity Review Measures, which became effective on February 15, 2022 and replaces its predecessor regulation. Pursuant to the Cybersecurity Review Measures, critical information infrastructure operators that procure internet products and services, and operators of network platforms conducting data processing activities must be subject to the cybersecurity review if their activities affect or may affect national security. The Cybersecurity Review Measures further stipulates that network platform operators that hold personal information of over one million users shall apply with the Cybersecurity Review Office for a cybersecurity review when listing their securities "in a foreign country." Given that the Cybersecurity Review Measures was recently promulgated, there are substantial uncertainties as to its interpretation, application, and enforcement. On November 14, 2021, the CAC published a draft of the Administrative Measures for Internet Data Security, or the Draft Data Security Regulations, for public comments. The Draft Data Security Regulations provides that data processors refer to individuals or organizations that, during their data processing activities such as data collection, storage, utilization, transmission, publication and deletion, have autonomy over the purpose and the manner of data processing. In accordance with the Draft Data Security Regulations, data processors conducting the following activities must apply for cybersecurity review: (i) merger, reorganization, or division of internet platform operators that have acquired a large number of data resources related to national security, economic development, or public interests, which affects or may affect national security; (ii) a foreign listing by a data processor processing personal information of over one million users; (iii) a listing in Hong Kong which affects or may affect national security; or (iv) other data processing activities that affect or may affect national security. There have been no further clarifications from the authorities as of the date of this annual report as to the standards for determining such activities that "affects or may affect national security." In addition, the Draft Data Security Regulations requires that data processors that process "important data" or are listed overseas must conduct an annual data security assessment by itself or commission a data security service provider to do so, and submit the assessment report of the preceding year to the municipal cybersecurity department by the end of January each year. The period for which the CAC solicited comments on this draft ended on December 13, 2021, but there is no timetable as to when the draft regulations will be enacted. As such, substantial uncertainties exist with respect to the enactment timetable, final content, interpretation, and implementation of the draft regulations, including the standards for determining activities that "affects or may affect national security." As the Draft Data Security Regulations have not been adopted and it remains unclear whether the formal version adopted in the future will have any further material changes, it is uncertain how the draft regulations will be enacted, interpreted or implemented and how they will affect us.

Personal Information and Privacy

- The Anti-monopoly Guidelines for the Platform Economy Sector published by the Anti-monopoly Committee of the State Council, effective on February 7, 2021, prohibits collection of unnecessary user information through coercive means by online platforms operators.

- In August 2021, the Standing Committee of the NPC promulgated the PRC Personal Information Protection Law, which integrates the scattered rules with respect to personal information rights and privacy protection and took effect on November 1, 2021. We update our privacy policies from time to time to meet the latest regulatory requirements of PRC government authorities and adopt technical measures to protect data and ensure cybersecurity in a systematic way. Nonetheless, the PRC Personal Information Protection Law elevates the protection requirements for personal information processing, and many specific requirements of this law remain to be clarified by the CAC, other regulatory authorities, and courts in practice. We may be required to make further adjustments to our business practices to comply with the personal information protection laws and regulations.

Many of the data-related legislations are relatively new and certain concepts thereunder remain subject to interpretation by the regulators. If any data that we possess belongs to data categories that are subject to heightened scrutiny, we may be required to adopt stricter measures for protection and management of such data. The Cybersecurity Review Measures and the Draft Data Security Regulations remain unclear on whether the relevant requirements will be applicable to companies that are already listed in the United States, such as us, if we were to pursue another listing outside of the PRC. We cannot predict the impact of the Cybersecurity Review Measures and the Draft Data Security Regulations, if any, at this stage, and we will closely monitor and assess any development in the rule-making process. If the Cybersecurity Review Measures and the enacted version of the Draft Data Security Regulations mandate clearance of cybersecurity review and other specific actions to be taken by issuers like us, we face uncertainties as to whether these additional procedures can be completed by us timely, or at all, which may delay or disallow our future listings (should we decide to pursue them), subject us to government enforcement actions and investigations, fines, penalties, suspension of our non-compliant operations, or removal of our apps from the relevant application stores, and materially and adversely affect our business and results of operations. As of the date of this annual report, we have not been involved in any formal investigations on cybersecurity review made by the CAC on such basis.

In general, compliance with the existing PRC laws and regulations, as well as additional laws and regulations that PRC regulatory bodies may enact in the future, related to data security and personal information protection, may be costly and result in additional expenses to us, and subject us to negative publicity, which could harm our reputation and business operations. There are also uncertainties with respect to how such laws and regulations will be implemented and interpreted in practice.

Legal developments in Europe have created compliance uncertainty regarding the processing of personal data. For example, the General Data Protection Regulation, or GDPR, which came into application in the European Union, or EU, on May 25, 2018, applies to all of our activities conducted from an establishment in the EU or related to products and services that we offer to EU users. The GDPR creates significant new requirements regarding the protection of personal data and significantly increases the financial penalties for noncompliance. We may be considered in violation of the GDPR and thus be required to adopt additional measures in the future. If we fail to comply with the requirements stipulated by the GDPR in a timely manner, or at all, we may be subject to significant penalties and fines, which may in turn adversely affect our business, reputation, financial condition and operating results.

In addition to the new requirements imposed by the GDPR, the privacy requirements and expectations created in the EU by the GDPR are stricter than certain other regions. These requirements include rules restricting the flow of data across borders. These restrictions may cause companies to localize data, and may otherwise impact the use of our services.

Additionally, California enacted legislation that has been dubbed the first “GDPR-like” law in the United States. Known as the California Consumer Privacy Act, or CCPA, it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA, which went into effect on January 1, 2020, requires covered companies to provide new disclosures to California consumers, and provides such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States, which could increase our potential liability and adversely affect our business.

Furthermore, we may also be subject to the Information Technology Act 2000 of India, which primarily provides for (i) civil liability to compensate for wrongful loss or gain to any person arising from negligence in implementing and maintaining reasonable security practices and procedures with respect to sensitive personal data or information that we possess, deal with or handle in our computer systems, networks, databases and software, and (ii) criminal punishment if, in the course of performing a contract, a service provider discloses personal information without the consent of the person concerned or is in breach of a lawful contract and does so with the intention to cause, or knowing it is likely to cause, wrongful loss or wrongful gain. As our global expansion evolves, we may, from time to time, be subject to data protection regulations from other jurisdictions, which may impose additional and more stringent requirements. See "Item 4. Information on the Company—B. Business Overview—Regulations—Regulations in Multiple Jurisdictions Where We Operate (other than China)—Regulations on Data Privacy and Protection."

We make statements about our use and disclosure of PII through our privacy policy, information provided on our internet platform and press statements. Any failure by us to comply with these public statements or with international privacy-related or data protection laws and regulations could result in proceedings against us by governmental entities or others. In addition to reputational impacts, penalties could include ongoing audit requirements and significant legal liability. None of the data security measures can provide absolute security, and losses or unauthorized access to or releases of confidential information, in particular PII, may still occur, which could materially and adversely affect our reputation, financial condition and operating results.

From time to time, concerns may be expressed about whether our products, services, or processes compromise the privacy of users, customers, and others. Concerns about our practices with regard to the collection, use, disclosure, or security of PII or other privacy related matters, even if unfounded, could damage our reputation and adversely affect our operating results.

We face competition in several major aspects of our business. If we fail to compete effectively, we may lose users and advertisers which could materially and adversely affect our business, financial condition and results of operations.

We face competition in several major aspects of our business, particularly from companies that provide social media services. Some of our competitors may have longer operating histories and significantly greater financial, technical and marketing resources than we do, and in turn may have an advantage in attracting and retaining users and advertisers. In addition, competitors in some areas of our business may have significantly larger user bases and more established brand names than we do and may be able to more effectively leverage their user bases and brand names to provide live streaming, social media, internet communication, and other products and services, and thereby increase their respective market shares.

In relation to our global business, our competitors primarily include global short-form video platforms such as TikTok, and livestreaming platforms such as Twitch in certain regions. We also compete for online advertising revenues with other internet companies that sell online advertising services globally.

If we are not able to effectively compete in any of our lines of business, our overall user base and level of user engagement may decrease, which could reduce our paying users or make us less attractive to advertisers. We may be required to spend additional resources to further increase our brand recognition and promote our products and services, and such additional spending could adversely affect our profitability. Furthermore, if we are involved in disputes with any of our competitors that result in negative publicity to us, such disputes, regardless of their veracity or outcome, may harm our reputation or brand image and in turn lead to reduced number of users and advertisers. Any legal proceedings or measures we take in response to such disputes may be expensive, time-consuming and disruptive to our operations and divert our management's attention.

Our competitors may unilaterally decide to adopt a wide range of measures targeted at us, including possibly designing their products to negatively impact our operations, such as sending virus-like programs to attack elements of our platforms. Some competitors may also make their applications incompatible with ours, effectively requiring users to either stop using our competitors' products or uninstall our products, leading to a reduction in our number of users.

Our business and results of operations have been and may continue to be affected by the COVID-19 pandemic.

The COVID-19 pandemic has resulted in authorities implementing numerous preventative measures to contain or mitigate the outbreak of the virus, such as travel bans and restrictions, limitations on business activities, quarantines, and shelter-in-place orders. These measures have caused, and are continuing to cause, business slowdowns or shutdowns in affected areas, both regionally and worldwide, which have significantly impacted our business and results of operations.

The COVID-19 has affected and may continue to affect our business and our users' behaviors. On the one hand, lockdown and social distancing measures implemented to control the spread of COVID-19 have led to the increase in demand for premium online entertainment content and authentic social engagement. As a result, we experienced an increase in user traffic on our live streaming and short-form video platforms and time spent by our users on our platforms during the lockdown period, which partially led to the rapid growth of our global business. However, there can be no assurance that such momentum will continue in the future, especially under the circumstances that the lockdown and social distancing measures were gradually relaxed or lifted in many areas of the world starting from the second half of 2021.

On the other hand, the pandemic has also had a negative impact on the activity level of certain users and broadcasters on our social media platforms, particularly those who are interested in, or rely on, offline activities and offline venues. In addition, a number of entertainment events in various countries and regions have been cancelled, delayed or otherwise disrupted, which affected the effectiveness of some of our localized operational activities, and we devoted substantial resources to make necessary adjustment to the related plans. The pandemic may also negatively affect our users' spending and their willingness to purchase virtual items or other products or services on our platforms. As an effort to contain the spread of COVID-19, many countries took precautionary measures that reduced economic activities, including temporary closure of corporate offices, retail outlets and other business facilities, as well as strict implementation of quarantine measures. These measures adversely impacted the macroeconomic environment as well as the income and personal financial condition of many individuals, which in turn adversely affected the willingness of some of our users to purchase virtual items or other products or services on our platforms. Substantial uncertainties remain as to the impact of the resurgence of COVID-19. Our operations have and may continue to experience disruptions, such as temporary closure of our offices and/or those of our partners or suppliers, suspension or delay of services, and travel restrictions and limits on access to public venues. We have corporate offices in different parts of the world that have been significantly affected by the outbreak. Our offline operations in those regions have also been affected to varying degrees. Our business partners have also been affected by the outbreak of COVID-19, and performance of their obligations under our arrangements with them may be delayed or otherwise disrupted.

As a result of any of the above developments, our business, financial condition and results of operations may be adversely affected by the pandemic outbreak to the extent that COVID-19 continues to affect the global economy in general. We will closely monitor the further developments of the COVID-19 outbreak. The full extent to which the COVID-19 outbreak impacts our businesses and results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of the pandemic, and the actions to contain the pandemic and the impact on the global financial market and economy, among others. For more information, please see "Item 5. Operating and Financial Review and Prospects—A. Operating Results—Impact of COVID-19 On Our Operations."

We have granted employee stock options and other share-based awards in the past and are very likely to continue to do so in the future. We recognize share-based compensation expenses in our consolidated statements of operations in accordance with the relevant rules under U.S. GAAP, which have had and may continue to have a material and adverse effect on our results of operations.

We have adopted several share incentive plans and granted share-based compensation awards pursuant to which, including share options, restricted shares and restricted share units, to various employees, key personnel and other non-employees to incentivize performance and align their interests with ours. As of March 31, 2022, options to purchase 9,414,400 Class A common shares, 16,154,922 restricted shares and 44,755,859 restricted share units were outstanding under our share incentive plans. As a result of these grants and potential future grants, we had incurred in the past and expect to continue to incur significant share-based compensation expenses in the future. The amount of these expenses is based on the fair value of the share-based awards. We account for compensation costs for certain share-based compensation awards granted in the past using a graded-vesting method and recognize expenses in our consolidated statements of operations in accordance with the relevant rules under U.S. GAAP. The expenses associated with share-based compensation materially increased our net losses or reduced our net income in the past, and may reduce our net income in the future. In addition, any additional securities issued under share-based compensation schemes will dilute the ownership interests of our shareholders, including holders of our ADSs. However, if we limit the scope of the share-based compensation schemes, we may not be able to attract or retain key personnel who expect to be compensated by options, restricted shares or restricted share units.

The number of mobile active users we have may fluctuate and we may fail to attract more paying users, which may materially and adversely affect our revenues growth, results of operations and financial condition.

The number of our mobile monthly active users across various platforms of ours may fluctuate significantly from time to time. The number of our mobile monthly active users may vary significantly from quarter to quarter due to a variety of factors, including, but not limited to (i) overall consumer demand for online entertainment services such as livestreaming; (ii) our ability to attract and attain users; (iii) seasonality in activity level of our users; (iv) increases in sales and marketing expenses and other operating expenses that we may incur to grow and expand our operations; (v) timing of promotional and marketing activities; and (vi) government regulations of the markets that we currently operate in.

For instance, in late June 2020, the Indian government took extensive measures to block certain China-based apps in its local market and defend other geopolitical risks. Our platforms, including *Bigo Live*, *Likee* and *Hago*, were also perceived by the Indian government as China-based apps and were subsequently blocked as a result, which has negatively affected the scale of our user base and resulted a short-term impact on our operations. In addition, we voluntarily reduced the sales and marketing expenditures for *Likee* and *Hago* in 2021, which has negatively affected our user acquisition and in turn led to a decrease in their user base. If we are unable to attract new users and retain them as active users and convert non-paying active users into paying users, the numbers of our active users and paying users may further fluctuate and our growth prospects, results of operations and financial condition may be materially and adversely affected.

We may not be able to keep our users highly engaged, which may reduce our monetization opportunities and materially and adversely affect our revenues, profitability and prospects.

Our success depends on our ability to maintain and grow our user base and keep our users highly engaged. In order to attract and retain users and remain competitive, we must continue to innovate our products and services, implement new technologies and functionalities and improve the features of our platforms in order to entice users to use our products and services more frequently and for longer durations.

The internet industry is characterized by constant changes, including rapid technological evolution, continual shifts in customer demands, frequent introductions of new products and services and constant emergence of new industry standards and practices. Thus our success will depend, in part, on our ability to respond to these changes on a cost-effective and timely basis; failure to do so may cause our user base to shrink and user engagement level to decline and our results of operations would be materially and adversely affected. For example, our plan to more broadly support mobile-live broadcasting across our live streaming platform and retain the ability to offer high quality delivery of voice and video data may cause us to incur significant additional costs and may not succeed.

Due to the intensified competitions among audio and video-based social entertainment platforms, users may leave us for competitors' platforms more quickly than in other online sectors. A decrease in the number of our active users may reduce the diversity and vibrancy of our platforms' online ecosystem and affect our user-generated channels, which may in turn reduce our monetization opportunities and have a material and adverse effect on our business, financial condition and results of operations.

We cannot assure you that our platforms will continue to be sufficiently popular with our users to offset the costs incurred to operate and expand it. Our sales and marketing expenses may significantly increase in the future, which could have an adverse effect on our results of operations. Failure to maintain or grow our user base in a cost-effective manner, or at all, and keep our users highly engaged would materially and negatively affect our results of operations.

Spammers and malicious applications may affect user experience, which could reduce our ability to attract users and advertisers and materially and adversely affect our business, financial condition and results of operations.

Spammers may use our platforms to send targeted and untargeted spam messages to users, which may affect user experience. As a result, our users may use our products and services less or stop using them altogether. In spamming activities, spammers typically create multiple user accounts for the purpose of sending spam messages. Although we attempt to identify and delete accounts created for spamming purposes, we may not be able to effectively eliminate all spam messages from our platforms in a timely fashion. Any spamming activities could have a material and adverse effect on our business, financial condition and results of operations.

We use third-party services and technologies in connection with our business, and any disruption to the provision of these services and technologies to us could result in adverse publicity and a slowdown in the growth of our users, which could materially and adversely affect our business, financial condition and results of operations.

Our business depends upon services provided by, and relationships with, third parties. If we are unable to retain or attract popular talents such as performers, channel managers, professional game players, commentators and hosts for our live streaming platform or if these talents cannot draw fans or participants, our results of operations may be adversely affected. Also, if channel owners are unable to reach or maintain mutually satisfactory cooperation arrangements with the performers on their channels on our live streaming platform, we may lose popular performers and our business and operations may be adversely affected. Furthermore, if we are unable to obtain or retain rights to host popular online games or popular in-game virtual items, or if we are required to share a bigger portion of our revenues with third-party game developers, we could be required to devote greater resources and time to obtain hosting rights for new games and applications from other parties, and our results of operations may be impacted. In addition, some third-party software we use in our operations are currently publicly available without charge. If the owner of any such software decides to charge users or no longer makes the software publicly available, we may need to incur significant cost to license the software, find replacement software or develop alternative software. If we are unable to find or develop replacement software at a reasonable cost, or at all, our business and operations may be adversely affected.

Some of the services offered by us run on a complex network of servers located in and maintained by third-party data centers and our overall network relies on broadband connections provided by third-party operators. We expect this dependence on third parties to continue. The networks maintained and services provided by such third parties are vulnerable to damage or interruption, which could impact our results of operations. See "—System failure, interruptions and downtime can result in adverse publicity for our products and result in net revenue losses, a slowdown in the growth of our registered user accounts and a decrease in the number of our active users. If any of these system disruptions occurs, our business, financial condition and results of operations may be materially and adversely affected."

Furthermore, we generate substantially all of our online advertising revenues through agreements entered into with various third-party advertising agencies that represent advertisers. We do not have long-term cooperation agreements or exclusive arrangements with these agencies and they may elect to direct business opportunities to other advertising service providers. If we fail to retain and enhance our business relationships with these third-party advertising agencies, we may suffer from a loss of advertisers and our business and results of operations may be materially and adversely affected.

In addition, we sell a significant portion of our products and services through third-party online payment systems. If any of these third-party online payment systems suffer from security breaches, users may lose confidence in such payment systems and refrain from purchasing our virtual items online, in which case our results of operations would be negatively impacted. See "—The security of operations of, and fees charged by, third-party online payment platforms may have a material adverse effect on our business and results of operations."

We exercise no control over the third parties with whom we have business arrangements. If such third parties increase their prices, fail to provide their services effectively, terminate their service or agreements or discontinue their relationships with us, we could suffer service interruptions, reduced revenues or increased costs, any of which may have a material adverse effect on our business, financial condition and results of operations.

System failure, interruptions and downtime can result in adverse publicity for our products and result in net revenue losses, a slowdown in the growth of our registered user accounts and a decrease in the number of our active users. If any of these system disruptions occurs, our business, financial condition and results of operations may be materially and adversely affected.

Although we seek to reduce the possibility of disruptions or other outages, our services may be disrupted by problems with our own technology and system, such as malfunctions in our software or other facilities and network overload. Our systems may be vulnerable to damage or interruption from telecommunication failures, power loss, computer attacks or viruses, earthquakes, floods, fires, terrorist attacks, geopolitical events, and similar events. We have experienced system failures for some operations in China. Those responsible were subsequently found guilty and penalized by the PRC courts and we have subsequently updated our system to make it more difficult for similar attacks to succeed in the future, but we cannot assure you that there will be no similar technical failures in other jurisdictions in the future. Parts of our system are not fully redundant, and our disaster recovery planning is not sufficient for all eventualities. Despite any precaution we may take, the occurrence of a natural disaster or other unanticipated problems at our hosting facilities could result in lengthy interruptions in the availability of our products and services. Any interruption in the ability of our users to use our products and services could reduce our future revenues, harm our future profits, subject us to regulatory scrutiny and lead users to seek alternative forms of online social interactions.

Our servers that process user payments experience some downtime on a regular basis, which may negatively affect our brand and user perception of the reliability of our systems. Any scheduled or unscheduled interruption in the ability of users to use our payment systems could result in an immediate, and possibly substantial, loss of revenues.

Our users may use our products or services for critical transactions and communications, especially business communications. As a result, any system failures could result in damage to such users' businesses. These users could seek significant compensation from us for their losses. Even if unsuccessful, this type of claim would likely be time consuming and costly for us to address.

We have limited control over the prices of the services provided by telecommunication service providers and may have limited access to alternative networks or services. If the prices we pay for telecommunications and internet services rise significantly, our results of operations may be materially and adversely affected. Furthermore, if internet access fees or other charges to internet users increase, our user traffic may decline and our business may be harmed.

The respective number of our registered user accounts, active users and paying users may overstate the number of unique individuals who register to use our products and services, log on to our platforms, purchase virtual items or other products and services on our platforms or access Bigo.tv, respectively, and may therefore lead to an inaccurate interpretation of our average revenue per paying user metric and of our business operations by our management and by investors, and may affect advertisers' decisions on the amount spent on advertising with us.

Users of Bigo who raised withdrawal transactions are required to provide full name, date of birth and identity information, otherwise users are not required or obligated to undergo real-name verification under the current valid regulation. Therefore we cannot and do not track all the number of unique paying users. Instead, we track the number of registered user accounts, active users and paying users. We calculate certain operating metrics in the following ways: (a) the number of registered user accounts is the cumulative number of user accounts at the end of the relevant period that have logged onto our platforms at least once after registration, (b) the number of active users is the cumulative number of user accounts at the end of the relevant period that have signed onto our platforms at least once during the relevant period, and (c) the number of paying users is the cumulative number of registered user accounts that have purchased virtual items or other products and services on our platforms at least once during the relevant period. The actual number of unique individual users, however, is likely to be lower than that of registered user accounts, active users and paying users, potentially significantly, for three primary reasons. First, each individual user may register more than once and therefore have more than one account, and sign onto each of these accounts during a given period. For example, a user may (a) create separate accounts for community and personal use and log onto each account at different times for different activities or (b) if he or she lost his or her original username or password, he or she can simply register again and create an additional account. Second, we experience irregular registration activities such as the creation of a significant number of improper user accounts by a limited number of individuals, which may be in violation of our policies, including for the purpose of clogging our network or posting spam to our channels. We believe that some of these accounts may also be created for specific purposes such as to increase the number of votes for certain performers in various contests, but the number of registered user accounts, paying users and active users do not exclude user accounts created for such purposes. We have limited ability to validate or confirm the accuracy of information provided during the user registration process to ascertain whether a new user account created was actually created by an existing user who is registering duplicative accounts. Thus, the respective number of our registered user accounts, active users and paying users may overstate the number of unique individuals who register on our platforms, sign onto our platforms, purchase virtual items or other products and services on our platforms and access Bigo.tv, respectively which may lead to an inaccurate interpretation of our average revenue per paying user metric.

In addition, we may be unable to track whether we are successfully converting registered users or active users into paying users since we do not track the number of unique individuals or operate our platforms on a real-name basis. If the growth in the number of our registered user accounts, active users or paying users is lower than the actual growth in the number of unique individual registered, active or paying users, our user engagement level, sales and our business may not grow as quickly as we expect, and advertisers may reduce the amount spent on advertising with us, which may harm our business, financial condition and results of operations. In addition, such overstatement may cause inaccurate evaluation of our business operations by our management and by investors, which may also materially and adversely affect our business and results of operations.

Concerns about collection and use of personal data could damage our reputation and deter current and potential users from using our products and services, which could lead to lower revenues.

Concerns about our practices with regard to the collection, use or disclosure of personal information or other privacy-related matters, even if unfounded, could damage our reputation and operating results. We apply strict management and protection for any information provided by users and, under our privacy policy, without our users' prior consent, we will not provide any of our users' personal information to any unrelated third party. While we strive to comply with our privacy guidelines as well as all applicable data protection laws and regulations, any failure or perceived failure to comply may result in proceedings or actions against us by government entities or others, and could damage our reputation. User and regulatory attitudes towards privacy are evolving, and future regulatory or user concerns about the extent to which personal information is used or shared with advertisers or others may adversely affect our ability to share certain data with advertisers, which may limit certain methods of targeted advertising. Concerns about the security of personal data could also lead to a decline in general internet usage, which could lead to lower registered, active or paying user numbers on our platforms. A significant reduction in registered, active or paying user numbers could lead to lower revenues, which could have a material and adverse effect on our business, financial condition and results of operations.

The security of operations of, and fees charged by, third-party online payment platforms may have a material adverse effect on our business and results of operations.

Currently, we sell almost all of our products and services to our users through third-party online payment systems. We expect that an increasing amount of our sales will be conducted over the internet as a result of the growing use of online payment systems. In all these online payment transactions, secured transmission of confidential information such as customers' credit card numbers and personal information over public networks is essential to maintain consumer confidence.

We do not have control over the security measures of our third-party online payment vendors, and security breaches of the online payment systems that we use could expose us to litigation and possible liability for failing to secure confidential customer information and could, among other things, damage our reputation and the perceived security of all of the online payment systems that we use. If a well-publicized internet or mobile network security breach were to occur, users concerned about the security of their online financial transactions may become reluctant to purchase our virtual items even if the publicized breach did not involve payment systems or methods used by us. In addition, there may be billing software errors that would damage customer confidence in these online payment systems. If any of the above were to occur and damage our reputation or the perceived security of the online payment systems we use, we may lose paying users and users may be discouraged from purchasing our services, which may have a material adverse effect on our business.

In addition, there are currently only a limited number of third-party online payment systems. If any of these major payment systems decides to cease to provide services to us, or significantly increase the percentage they charge us for using their payment systems for our virtual items and other services, our results of operations may be materially and adversely affected.

Our core values of focusing on user experience and satisfaction first and acting for the long-term may conflict with the short-term operating results of our business, and also negatively impact our relationships with advertisers or other third parties.

One of our core values is to focus on user experience and satisfaction, which we believe is essential to our success and serves the best, long-term interests of our company and our shareholders. Therefore, we have made, and may make in the future, significant investments or changes in strategy that we think will benefit our users, even if our decision negatively impacts our operating results in the short term. In addition, this philosophy of putting our users first may also negatively impact our relationships with advertisers or other third parties, and may not result in the long-term benefits that we expect, in which case the success of our business and operating results could be harmed.

We have limited experience in international markets. If we fail to meet the challenges presented by our increasingly globalized operations, our business, financial condition and results of operations may be materially and adversely affected.

We have limited experience in international markets and we expect to enter into and expand our operations in international markets, primarily leveraging Bigo's existing products and operations. Bigo's businesses have footprint around the world, primarily including North America, Europe, the Middle East, Southeast Asia and Eastern Pacific regions, etc. Global expansion is a key growth strategy for us, which exposes us to a number of risks, including:

- compliance with applicable laws and regulations in multiple jurisdictions, including, but not limited to, internet content provider licenses and other applicable licenses or governmental authorizations;
- policies that increase restrictions on our ability to invest in certain jurisdictions, especially in the telecommunication and internet sectors;
- challenges in identifying appropriate local business partners and establishing and maintaining good working relationships with them. Our business partners primarily include popular talents and their agencies, third parties that promote our platform and applications and third parties that provide us technology support;
- challenges in obtaining and maintaining sufficient intellectual property protection and rights;
- challenges in commercializing Bigo's platforms in international markets without infringing, misappropriating or otherwise violating the intellectual property rights of third parties;

- challenges in formulating effective marketing strategies targeting users from various jurisdictions and cultures, who have a diverse range of preferences and demands;
- lack of acceptance of our product and service offerings, and challenges of localizing our offerings to appeal to local tastes;
- challenges in replicating or adapting our company policies and procedures to operating environments that are different from each other, including technology infrastructure;
- challengers in meeting local advertiser demands as well as online marketing practices and conventions;
- differences in user and advertiser reception and perception of Bigo's applications internationally;
- challenges in managing compliance with local labor regulations and risks associated with labor dispute across different jurisdictions;
- fluctuations in currency exchange rates;
- increased competition with local players in different markets and sub-markets;
- political instability and general economic or political conditions in particular countries or regions, including territorial or trade disputes, war and terrorism;
- exposure to different tax jurisdictions that may subject us to greater fluctuations in our effective tax rate and assessments in multiple jurisdictions on various tax-related assertions, including transfer pricing adjustments and permanent establishment;
- challenges of maintaining efficient and consolidated internal systems, including information technology infrastructure, and of achieving customization and integration of these systems;
- compliance with privacy laws and data security laws, including heightened restrictions and barriers on the transfer of data between different jurisdictions; and
- increased costs associated with doing business in multiple jurisdictions.

There is no assurance we will be able to manage these risks and challenges as we continue to grow our international businesses. Failure to manage these risks and challenges could negatively affect our ability to expand our international and cross-border businesses and operations as well as materially and adversely affect our business, financial condition and results of operations.

Rising international political tension may adversely impact our business and operating results.

Although we currently operate in several key markets across the globe, and that our revenue is diversified across multiple markets, our historical business operations in China (such as YY Live) might cause our global platforms to be perceived as China-based apps and be subject to some international political tension involving China.

Political tensions between the United States and China have escalated in recent years due to various incidents and factors. In addition to the historical events, such as the trade war between the two countries since 2018 and the COVID-19 pandemic, the relationships between the United States and China continued to be subject to uncertainties. For example, in 2021, the U.S. administration maintained tariffs on Chinese imports, sanctions certain Chinese officials, blacklists dozens of Chinese companies and expanded the ban on American investment in Chinese firms with ties to the military. These tensions have affected both diplomatic and economic ties between the two countries. Heightened tensions could reduce levels of trade, investments, technological exchanges, and other economic activities between the two major economies.

Additionally, the United States and various governments have imposed controls, export license requirements and restrictions on the import or export of technologies and products (or voiced the intention to do so), especially related to semiconductor, AI and other high-tech areas, which could have a material and adverse effect on our business, financial condition and results of operations. For instance, India has banned a large number of apps in 2020 out of national security concerns, many of which are China-based apps (including three of our platforms- Bigo Live, Likee and Hago), escalating regional, political and trade tensions.

Although we believe that our platforms including Bigo Live, Likee and Hago are not China-based, our previous history of conducting business in China (such as YY Live) might cause our global platforms to be perceived as China-based apps and be subject to the above mentioned international political tension related to China. The existing tensions and any further deterioration in international political tension may have a negative impact on the general, economic, political, and social conditions across the globe and adversely impact our business, financial condition and results of operations.

Registered trademarks, purchased internet search engine keywords and registered domain names of third parties that are similar to our trademarks, brands or domain names could cause confusion to our users, divert online customers away from our products and services or harm our reputation.

Competitors and other third parties may register trademarks or domain names that are similar to our trademarks or domain names or purchase keywords that are confusingly similar to our brands or websites in internet search engine advertising programs and in the header and text of the resulting sponsored links or advertisements in order to divert potential customers from us to their websites. Preventing such activity is inherently difficult. If we are unable to prevent such activity, competitors and other third parties may continue to drive potential online customers away from our platforms to competing, irrelevant or potentially offensive platforms, which could harm our reputation and cause us to lose revenue.

We have been and may be subject to intellectual property infringement, misappropriation or other claims or allegations in multiple jurisdictions, which could result in our payment of substantial damages, penalties and fines, removal of relevant content from our website or seeking license arrangements which may not be available on commercially reasonable terms.

Third party owners or right holders of patents, copyrights, trademarks, trade secrets and website content may assert intellectual property infringement, misappropriation or other claims against us. Our success depends, in part, on our ability to develop and commercialize our platforms without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. However, we may not be aware that our platforms are infringing, misappropriating or otherwise violating third-party intellectual property rights and such third parties may bring claims alleging such infringement, misappropriation or violation. In addition, content generated through our platforms, including real-time content, may also potentially cause disputes regarding content ownership or intellectual property rights. For example, we could face copyright infringement claims with respect to songs performed live, recorded or made accessible and online games being streamed live, recorded or made accessible on our audio and video-based social entertainment platforms. Separately, as our business expands in global landscape, the costs of carrying out these procedures and obtaining authorization and licenses for the growing content on our platforms and to use such content in multiple jurisdictions into which we may expand our operations may increase, which may potentially have material and adverse effects on our results of operations.

The validity, enforceability and scope of protection of intellectual property rights in internet-related industries are uncertain and still evolving. Considering the nature of our business, we have been subject to infringement claims and may continue to be subject to such infringement claims from time to time. For example, we were involved in a lawsuit with Guangzhou NetEase Computer System Co., Ltd. in the past few years, see “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal Proceedings” for details. However, we cannot predict the possible outcome of the legal proceedings of such nature. Also, these legal proceedings may be expensive, time-consuming and disruptive to our operations and divert our management’s attention. There can be no assurance that we will prevail in those legal proceedings and we cannot assure you that no intellectual property claims or lawsuits will be initiated by other companies in the future.

We have implemented procedures to reduce the likelihood that we may use, develop or make available any content or applications without the proper licenses or necessary third-party consents; such procedures include requiring performers, channel owners and users to acknowledge and agree that they would not perform or upload copyrighted content without proper authorization and that they will indemnify us for any relevant copyright infringement claims. However, these procedures may not be effective in preventing unauthorized posting or use of copyrighted content on our platforms or the infringement of third-party rights. Specifically, such acknowledgments and agreements by performers, channel owners and users are not enforceable against third parties who may nevertheless file claims of copyright infringement against us. Furthermore, individual performers or channel owners who generate content on our platform that may infringe copyrights of third parties may not be easily traceable, if at all, by a plaintiff who may then choose to file a claim against us, and these individual performers and channel owners may not have resources to fully indemnify us, if at all, for any such claims. Given that, we cannot assure you that we will not become subject to other intellectual property claims and lawsuits in the jurisdictions where we have presence, including the United States, by virtue of our ADSs being listed on the Nasdaq Global Select Market, the ability of users to access our platforms in the United States and other jurisdictions, the performance of songs and other contents which are subject to copyright and other intellectual property laws of multiple jurisdictions, the ownership of our ADSs by investors in the United States and other jurisdictions, or the extraterritorial application of laws by courts in any other jurisdiction or otherwise. In addition, as a publicly listed company, we may be exposed to increased risk of litigation.

If an infringement claim brought against us under the jurisdictional laws is successful, we may be required to pay substantial statutory penalties or other damages and fines, remove relevant content from our platforms, face injunctive relief or enter into license agreements which may not be made on commercially reasonable terms or at all. We currently have a U.S. patent portfolio, and our competitors and other third parties may now or in the future have significantly larger and more mature patent portfolios than we have. Litigation or other claims against us also subject us to adverse publicity which could harm our reputation and affect our ability to attract and retain users, including channel owners, singers and other performers, which could materially and adversely affect the popularity of our platforms and therefore, our business, financial condition, results of operations and prospects may be materially and adversely affected.

We may not be able to successfully halt the operations of platforms that aggregate our data as well as data from other companies, including social networks, or "copycat" platforms that have misappropriated our data in the past or may misappropriate our data in the future. Those platforms may also lure away some of our users or advertisers or reduce our market share, causing material and adverse effects on our business operations.

From time to time, third parties have misappropriated our data through scraping our platforms, robots or other means and aggregated this data on their platforms with data from other companies. In addition, historically "copycat" platforms or client applications had misappropriated data on our platforms, implanted Trojan viruses in user PCs or mobiles to steal user data from YY Client (our discontinued PRC business) or other mobile applications and attempted to imitate our brand or the functionality of our platforms. When we became aware of such platforms, we employed technological and legal measures in an attempt to halt their operations. However, we may not be able to detect all such misappropriation in a timely manner and, even if we could, technological and legal measures may be insufficient to stop all such misappropriation. In those cases, our available remedies may not be adequate to protect us against such misappropriation. Regardless of whether we can successfully enforce our rights against these third parties, any measures that we may take could require significant financial or other resources from us. Those third parties may also lure away some of our users or advertisers or reduce our market share, causing material and adverse effects to our business operations.

We may not be able to prevent unauthorized use of our intellectual property, which could harm our business and competitive position.

We regard our trademarks, service marks, patents, domain names, trade secrets, proprietary technologies and similar intellectual property as critical to our success, and we rely on trademark and patent law, trade secret protection and confidentiality and license agreements with our employees and others to protect our proprietary rights. However, the steps we take to obtain, maintain, protect and enforce our intellectual property rights may be inadequate. We will not be able to protect our intellectual property rights if we are unable to obtain such intellectual property rights, or enforce our rights or if we do not detect unauthorized use of our intellectual property rights. If we fail to protect our intellectual property rights adequately, our competitors may gain access to our proprietary technology and develop and commercialize substantially identical products, services or technologies, and our business, financial condition, results of operations or prospects may be harmed. In addition, defending our intellectual property rights may entail significant expense.

It is often difficult to obtain, maintain and enforce intellectual property rights in China and other jurisdictions, as compared with the United States. Patents, trademarks and service marks may be invalidated, circumvented, or challenged. Trade secrets are difficult to protect, and our trade secrets may be leaked or otherwise become known or be independently discovered by others. Moreover, no assurance can be given that confidential agreements will be effective in controlling access to, distribution, use, misuse, misappropriation, reverse engineering or disclosure of our proprietary information, know-how and trade secrets. Further, these agreements may not prevent our competitors from independently developing technologies that are substantially equivalent or superior to our platform capabilities. Confidentiality agreements may be breached, and we may not have adequate remedies for any breach. Even where adequate, relevant laws exist, it may not be possible to obtain swift and equitable enforcement of such laws, or to obtain enforcement of a court judgment or an arbitration award delivered in another jurisdiction, and accordingly, we may not be able to effectively protect our intellectual property rights or enforce agreements in China or other jurisdictions. Policing any unauthorized use of our intellectual property is difficult and costly and the steps we have taken may be inadequate to prevent the misappropriation of our technologies. Given the potential cost, effort, risks and downsides of obtaining patent protection, in some cases we have not and do not plan to apply for patents or other forms of formal intellectual property protection for certain key technologies. If some of these technologies are later proven to be important to our business and are used by third parties without our authorization, especially for commercial purposes, our business and competitive position may be harmed. Patent, trademark, copyright, and trade secret protection may not be available to us in every country in which our platforms are or become available. For example, as we have expanded our business in multiple regions across the globe, we may be unable to register and obtain exclusive rights to use our trademarks in certain jurisdictions. As we expand our international activities, our exposure to unauthorized copying and use of our platforms will likely increase.

Litigation may be necessary in the future to enforce our intellectual property rights and to protect our trade secrets. Such litigation could be costly, time-consuming, and distracting to management, and could result in the impairment or loss of portions of our intellectual property. Further, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims, and countersuits attacking the validity and enforceability of our intellectual property rights, and if such defenses, counterclaims or countersuits are successful, we could lose valuable intellectual property rights. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation or diversion of our management’s attention and resources, could delay further sales or the implementation of our platforms, impair the functionality of our platforms, delay introductions of our platforms, result in our substituting inferior or more costly technologies into our platforms or damage our reputation.

As our patents may expire and may not be extended, our patent applications may not be granted and our patent rights may be contested, circumvented, invalidated or limited in scope, our patent rights may not protect us effectively. In particular, we may not be able to prevent others from developing or exploiting competing technologies, which could have a material and adverse effect on our business operations, financial condition and results of operations.

Generally, registered patents are subject to finite terms in various jurisdictions, which may vary from jurisdictions to jurisdictions as to the specific time period, term extension and other regulatory maintenance requirements. For example, in the United States and Singapore, once a patent is granted, it will be protected for twenty years from the date of application filing. In China, the valid period of utility model patent right and design patent right is ten years and fifteen years, respectively, according to the 2020 Patent Law that became effective on June 1, 2021, and is not extendable. Currently, we have patent applications pending in multiple regions across the globe, but we cannot assure you that we will be granted patents pursuant to our pending applications or will be granted patents based on patent applications we may file in other jurisdictions. Even if our patent applications succeed and we are issued patents in accordance with them, it is still uncertain whether these patents will be contested, circumvented or invalidated in the future. The rights granted under any issued patents may not provide us with proprietary protection or competitive advantages. Further, the claims under any patents that issue from our patent applications may not be broad enough to prevent others from developing technologies that are similar or that achieve results similar to ours. It is also possible that the intellectual property rights of others will bar us from licensing and from exploiting any patents that issue from our pending applications. Numerous U.S. and patents issued in other regions and pending patent applications owned by others exist in the fields in which we have developed and are developing our technology. These patents and patent applications might have priority over our patent applications and could subject our patent applications to invalidation and subject to patent infringement lawsuits if we expand our operations into such jurisdictions. Finally, in addition to those who may claim priority, any of our existing or pending patents may also be challenged by others on the basis that they are otherwise invalid or unenforceable.

If we fail to maintain and enhance our brands or to effectively promote our products and acquire new users, or if we incur excessive expenses in these efforts, our business, results of operations and prospects may be materially and adversely affected.

We believe that maintaining and enhancing our brands is of significant importance to the success of our business. Well-recognized brands are important to increasing the number of users and the level of engagement of our users and enhancing our attractiveness to advertisers. Since we operate in a highly competitive market, brand maintenance and enhancement directly affect our ability to maintain our market position.

As we expand in the future, we may conduct various marketing and brand promotion activities using various methods to continue promoting our brands. We cannot assure you, however, that these activities will be successful or that we will be able to achieve the brand promotion effect we expect. In addition, any negative publicity in relation to our products or services, regardless of its veracity, could harm our brands and reputation.

We have sometimes received, and expect to continue to receive, complaints from users regarding the quality of the products and services we offer. Negative publicity or public complaints by users may harm our reputation and affect our ability to attract new users and retain existing users. If our users' complaints are not addressed to their satisfaction, our reputation and our market position could be significantly harmed, which may materially and adversely affect our business, results of operations and prospects.

We no longer consolidate the operating results of Huya and YY Live, which may materially and adversely affect our results of operations.

In March 2018, Huya entered into definitive agreements for its series B-2 equity financing with Linen Investment Limited, a wholly owned subsidiary of Tencent Holdings Limited, or Tencent. Pursuant to these agreements, Tencent has a right, exercisable between March 8, 2020 and March 8, 2021, to purchase additional shares in Huya to reach 50.1% of Huya's total voting power. On April 3, 2020, we transferred 16,523,819 Class B ordinary shares of Huya to Linen Investment Limited, a wholly-owned subsidiary of Tencent for an aggregate purchase price of approximately US$262.6 million in cash, pursuant to Tencent's exercise of its option to purchase additional shares of Huya. As a result of the closing of the share transfer, Tencent increased its voting power in Huya to 50.1% on a fully diluted basis, or 50.9% calculated based on the total issued and outstanding shares of Huya, and will consolidate financial statements of Huya. Immediately after the share transfer, we held 68,374,463 Class B ordinary shares of Huya, representing approximately 43.0% of the total voting power calculated based on the total issued and outstanding shares of Huya. On August 10, 2020, we entered into a definitive share transfer agreement with Linen Investment Limited, pursuant to which we would transfer 30,000,000 Class B ordinary shares of Huya to Tencent for an aggregate purchase price of US$810.0 million in cash. Immediately after such share transfer, we held 38,374,463 Class B ordinary shares of Huya, representing 24.1% of the total voting power calculated based on the total issued and outstanding shares of Huya. Starting from the second quarter of 2020, we no longer consolidate the operating results of Huya into our financial statements, and our results of operations as shown in our financial statements may be adversely affected.

On November 16, 2020, we entered into definitive agreements with Baidu. Pursuant to the agreements, Baidu would acquire JOYY's PRC video-based entertainment live streaming business, YY Live, which includes YY mobile app, YY.com website and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. Subsequently, the sale was substantially completed as of February 8, 2021, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. As a result, the historical financial results of YY Live are reflected in the Company's consolidated financial statements as discontinued operations and we ceased consolidation of YY Live business since February 8, 2021. In light of that, our results of operations as shown in our financial statements may be adversely affected.

Our business depends substantially on the continuing efforts of our executive officers and key employees, and our business operations may be severely disrupted if we lose their services.

Our future success depends substantially on the continued efforts of our executive officers and key employees. If one or more of our executive officers or key employees were unable or unwilling to continue their services with us, we might not be able to replace them easily, in a timely manner, or at all. In addition, some of our executive officers and key employees hold the equity interests in the variable interest entities in PRC. If any of these executive officers and key employees terminates their services with us, we have the contractual right to appoint designees to hold the variable interest entities' equity interests. However, our business may be severely disrupted, our financial condition and results of operations may be materially and adversely affected and we may incur additional expenses to recruit, train and retain personnel. If any of our executive officers or key employees joins a competitor or forms a competing company, we may lose customers, know-how and key professionals and staff members. Each of our executive officers and key employees has entered into an employment agreement and a non-compete agreement with us. However, as advised by our PRC counsel, Fangda Partners, certain provisions under the non-compete agreement may not be deemed valid or enforceable under PRC laws. If any dispute arises between our executive officers and key employees and us, we cannot assure you that we would be able to enforce these non-compete agreements in China, where these executive officers reside, in light of uncertainties with China's legal system. See "—Risks Related to Doing Business in Jurisdictions We Operate—Uncertainties in the interpretation and enforcement of Chinese laws and regulations could limit the legal protections available to you and us."

If we are unable to attract, train and retain qualified personnel, our business may be materially and adversely affected.

Our future success depends, to a significant extent, on our ability to attract, train and retain qualified personnel, particularly management, technical and marketing personnel with expertise in the internet industry; inability to do so may materially and adversely affect our business. Since the internet industry is characterized by high demand and intense competition for talent, we cannot assure you that we will be able to attract or retain qualified staff or other highly skilled employees. As our company is relatively young, our ability to train and integrate new employees into our operations may not meet the growing demands of our business which may materially and adversely affect our ability to grow our business and hence our results of operations.

We may be exposed to cyber security risk.

Computer hackers, governments or cyber terrorists may attempt to penetrate our network security and our website. Unauthorized access to our proprietary business information or customer data may be obtained through break-ins, sabotage, breach of our secure network by an unauthorized party, computer viruses, computer denial-of-service attacks, employee theft or misuse, breach of the security of the networks of our third-party providers, or other misconduct. Because the techniques used by computer programmers who may attempt to penetrate and sabotage our network security or our website change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques. It is also possible that unauthorized access to customer data may be obtained through inadequate use of security controls by customers. We would suffer economic and reputational damages if a technical failure of our systems or a security breach compromises our user data, including identification or contact information, although there has not been any compromise in the past. Any disruption to our computer systems could have a material adverse effect on our on-site operations and ability to retain and attract users.

Our results of operations are subject to substantial quarterly and annual fluctuations due to seasonality.

We experience seasonality in our business, reflecting seasonal fluctuations in internet usage. As a result, comparing our operating results on a period-to-period basis may not be meaningful. For example, online user numbers tend to be lower during the holidays and celebrations in different cultures (including, but not limited to, Chinese New Year, Independence Day, Ramadan etc.), which negatively affects our cash flow for those periods. We may also experience a slight decrease of active users during Christmas and ending with the New Year's Day. Historically, excluding the impact of COVID-19, our revenues from advertising have followed the same general seasonal trend throughout the year with the first quarter of the year being the weakest quarter and the fourth quarter being the strongest. Furthermore, the number of paying users of our video content platform correlates with the marketing campaigns and promotional activities we conduct from time to time. Overall, the historical seasonality of our business has been relatively mild due to our rapid growth but seasonality may increase in the future. Once our business development reaches a more mature stage, our financial results may reflect seasonal effects owing to the factors mentioned above.

As a result, our operating results in future quarters or years may fall below the expectations of securities analysts and investors. In such event, the trading price of our ADSs would likely be materially and adversely affected. See "Item 4. Information on the Company—B. Business Overview—Seasonality" for additional details regarding the effects of seasonality on our cash flow, operating performance and financial results.

Our business is sensitive to global economic and various other conditions. Changes in the global and regional economy and other aspects could materially and adversely affect our business, financial condition and results of operations.

The success of our business ultimately depends on consumer spending. Our revenue is exposed to general economic and various other conditions that affect consumer confidence, discretionary income or changes in spending habits. As a result, our revenue and net income could be impacted to a significant extent by economic and various other conditions in respective regions where we operate, as well as economic conditions specific to digital entertainment. The regional and global economy, markets and levels of consumer spending are influenced by many factors beyond our control, including consumer perception of current and future economic conditions, political uncertainty, employment levels, inflation or deflation, real disposable income, interest rates, taxation and currency exchange rates etc.

COVID-19 had a severe and negative impact on the global economy in 2020 and 2021. Whether this will lead to a prolonged downturn in the economy is still unknown. Even before the outbreak of COVID-19, the global macroeconomic environment was facing numerous challenges. Uncertainty about global economic conditions poses a risk as consumers and businesses may postpone spending in response to credit constraint, rising unemployment rate, financial market volatility, government austerity programs, negative financial news, declines in income or asset values and/or other factors. There is considerable uncertainty over the long-term effects of the expansionary monetary and fiscal policies which had been adopted by the central banks and financial authorities of the world's leading economies. Unrest, terrorist threats and the potential for war in the Middle East and elsewhere may increase market volatility across the globe. For example, the war in Ukraine and the imposition of broad economic sanction on Russia could raise energy prices and disrupt global markets. In addition to that, in late June of 2020, the Indian government also took extensive measures to block certain China-based apps in its local market and defend for other geopolitical risks, and our platforms including Bigo Live, Likee and Hago were also perceived by the Indian government as China-based apps and were subsequently blocked, which has affected our user base and resulted a short-term impact on our operations. These worldwide and regional economic and various other conditions could have a material adverse effect on demand for our products and services. Demand also could differ materially from our expectations as a result of currency fluctuations. Other factors that could influence worldwide or regional demand include changes in fuel and other energy costs, conditions in the real estate and mortgage markets, unemployment, labor and healthcare costs, access to credit, consumer confidence and other macroeconomic factors affecting consumer spending behavior. An economic downturn, whether actual or perceived, a further decrease in economic growth rates or an otherwise uncertain economic outlook in global markets which we may operate could have a material adverse effect on business and consumer spending and, as a result, adversely affect our business, financial condition and results of operations.

Future strategic alliances or acquisitions may have a material and adverse effect on our business, reputation and results of operations.

We may enter into strategic alliances, including joint ventures or minority equity investments, with various third parties to further our business purpose from time to time. These alliances could subject us to a number of risks, including risks associated with sharing proprietary information, non-performance by the third party and increased expenses in establishing new strategic alliances, any of which may materially and adversely affect our business. We may have limited ability to monitor or control the actions of these third parties and, to the extent any of these strategic third parties suffers negative publicity or harm to their reputation from events relating to their business, we may also suffer negative publicity or harm to our reputation by virtue of our association with any such third party.

In addition, if appropriate opportunities arise, we may acquire and/or invest in additional assets, products, technologies or businesses that are complementary to our existing business. Past and future acquisitions and the subsequent integration of new assets and businesses into our own require significant attention from our management and could result in a diversion of resources from our existing business, which in turn could have an adverse effect on our business operations. Also, there can be no assurance that we can achieve the intended objectives by such strategic investments or acquisitions. Acquired assets or businesses may not generate the financial results we expect. Acquisitions could result in the use of substantial amounts of cash, potentially dilutive issuances of equity securities, the occurrence of significant goodwill impairment charges, amortization expenses for other intangible assets, exposure to potential unknown liabilities of the acquired business and decrease in our gross and net margins as a result of the consolidation of the financial results of the acquired business. Moreover, the costs of identifying and consummating acquisitions may be significant. In addition to possible shareholders' approval, we may also have to obtain approvals and licenses from relevant government authorities for the acquisitions and to comply with any applicable laws and regulations, which could result in increased delay and costs. Furthermore, we may be subject to negative public perception as a result of those strategic investments or acquisition and be viewed negatively by our users, investors and financial markets in general. The market value of our investments or acquisitions may also fluctuate, particularly in volatile markets, which may adversely affect our results of operations and financial condition.

We face risks associated with our long-term and short-term investments.

We currently invest a portion of our capital in long-term and short-term investments. Our long-term investments mainly consisted of investment in equity method investees, equity investments with readily determinable fair values and equity investments without readily determinable fair values, and our short-term investments mainly consisted of financial products issued by commercial banks with a variable interest rate indexed to the performance of underlying assets and a maturity date within one year when purchased. These investments may earn yields substantially lower than anticipated, and any failure to realize the benefits we expected from these investments may materially and adversely affect our business and financial results. We may also suffer losses from these long-term and short-term investments, which could adversely affect our results of operations and financial condition.

If we fail to maintain an effective system of internal control over financial reporting, we may be unable to accurately report our financial results or prevent fraud, and investor confidence in our company and the market price of our ADSs may be adversely affected.

The SEC, as required by Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, adopted rules requiring most public companies to include a management report on such company's internal control over financial reporting in its annual report, which contains management's assessment of the effectiveness of the company's internal control over financial reporting. In addition, when a company meets the SEC's criteria, an independent registered public accounting firm must report on the effectiveness of the company's internal control over financial reporting.

Our management and independent registered public accounting firm have concluded that our internal control over financial reporting was effective as of December 31, 2021. However, we cannot assure you that in the future our management or our independent registered public accounting firm will not identify material weaknesses during the Section 404 of the Sarbanes-Oxley Act audit process or for other reasons. In addition, because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. As a result, if we fail to maintain effective internal control over financial reporting or should we be unable to prevent or detect material misstatements due to error or fraud on a timely basis, investors could lose confidence in the reliability of our financial statements, which in turn could harm our business, results of operations and negatively impact the market price of our ADSs, and harm our reputation. Furthermore, we have incurred and expect to continue to incur considerable costs and to use significant management time and the other resources in an effort to comply with Section 404 and other requirements of the Sarbanes-Oxley Act.

Unauthorized third-party platforms may sell virtual items we offer for free on our platforms, which may affect our revenue-generating opportunities and exert downward pressure on the prices we charge for our virtual items.

We, from time to time, offer virtual items free of charge to attract users or encourage user participation in channels. Some of our users may sell or purchase such free virtual items through unauthorized third-party sellers in exchange for real currency. For example, fans of a performer may pay other users to send flowers or gifts the latter have accumulated on our platforms to the performer, in order to show support and raise the popularity ranking of the performer of their choice. These unauthorized transactions are usually arranged on third-party platforms which we do not and are unable to track or monitor. Accordingly, these unauthorized purchases and sales from third-party sellers may affect our revenue-generating opportunities and may impede our revenue and profit growth by, among other things, reducing the revenues we could have generated and exerting downward pressure on the prices we charge for our virtual items.

We have limited business insurance coverage, so that any uninsured occurrence of business disruption may result in substantial costs to us and the diversion of our resources, which could have an adverse effect on our results of operations and financial condition.

Insurance companies in developing countries such as China currently do not offer as extensive an array of insurance products as insurance companies do in more developed economies. We may not have sufficient insurance coverage for business liabilities or disruptions. We have determined that the costs of insuring for these risks and the difficulties associated with acquiring such insurance on commercially reasonable terms make it impractical for us to have such insurance. Any uninsured occurrence may disrupt our business operations, require us to incur substantial costs and divert our resources, which could have an adverse effect on our results of operations and financial condition.

Risks Related to Doing Business in Jurisdictions We Operate

We are subject to the risks of doing business globally.

We maintain our operations in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc., and may in the future continue expanding, or seek to expand, our operations to additional jurisdictions. The global operation and expansion plan exposes us to international political, legal and economic risks, which are fluid and unpredictable. Our ability to maintain good operation in multiple countries and regions may be adversely affected by changes in international and local laws and regulations such as those related to taxation, import and export tariffs, environmental regulations, land use rights, intellectual property, currency controls, network security and other matters. Many, if not all of the above-mentioned risks also apply to our operations in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. where we operate or seek to operate. If any of these risks were to occur, our business, financial condition and results of operations could be materially and adversely affected by any of the risks above.

We cannot guarantee that we will be able to successfully carry out our global expansion strategy. We will face certain risks inherent in doing business internationally, including, but not limited to, difficulties in developing, staffing and simultaneously managing global operations as a result of distance, language and cultural differences; challenges in formulating effective local sales and marketing strategies targeting users from various jurisdictions and cultures, who have a diverse range of preferences and demands; challenges in identifying appropriate local business partners and establishing and maintaining good working relationships with them; challenges in obtaining and maintaining sufficient intellectual property protection and rights in various jurisdictions; dependence on local platforms in marketing our international products and services in multiple regions across the globe; challenges in selecting suitable geographical regions for international business; political or social unrest or economic instability; compliance with applicable laws and regulations in multiple regions across the globe and unexpected changes in laws or regulations; exposure to different tax jurisdictions that may subject us to greater fluctuations in our effective tax rate and potentially adverse tax consequences; and increased costs associated with doing business in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc.

We face risks and uncertainties to comply with the laws, regulations and rules in various aspects in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. Failure to comply with such applicable laws, regulations and rules may subject our global operations to strict scrutiny by local authorities, which in turn may materially and adversely affect our globalized operations.

As we expand our operations in additional emerging markets and regions, we may have to adapt our business models or operations to the local markets due to various legal requirements and market conditions. Our international operations and expansion efforts may result in increased costs and are subject to various risks, including difficulties in obtaining licenses, permits or other applicable governmental authorizations, content control from local authorities, uncertain enforcement of intellectual property rights, potential claims of intellectual property infringement, the complexity of compliance with laws and regulations and cultural differences. Compliance with applicable laws, regulations and rules related to matters that are central to our business, including those related to live streaming services, content restrictions, data privacy, virtual items, anti-corruption laws, anti-money laundering and protection of minors, increases the costs and risk exposure of doing business in multiple jurisdictions across the globe including North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, etc. In some cases, compliance with the laws and regulations of one country could violate the laws and regulations of another country. As our globalized operations evolve, we cannot assure you that we are able to fully comply with the legal requirements of each jurisdiction and successfully adapt our business models to local market conditions. Due to the complexity involved in our global business expansion, we cannot assure you that we are in compliance with all local laws or regulations, including license requirements, or that our existing licenses will be successfully renewed or expanded to cover all of our areas of operations.

Fluctuations in foreign currency exchange rates may adversely affect our operational and financial results, which we report in U.S. dollars.

We operate in multiple markets, which exposes us to the effects of fluctuations in currency exchange rates as we report our financials and key operational metrics in U.S. dollars. While a majority of our revenues and expenses are dominated in U.S. dollars, some of our expenses and revenues are denominated in various other foreign currencies, such as Renminbi, Euro, Singapore dollars, Japanese yen, Indonesian rupiah, Vietnamese dong, Thai baht, Malaysian ringgit, Turkish lira, among other currencies. We generally incur expenses for employee compensation and other operating expenses in the local currencies in the markets in which we operate. Therefore, fluctuations in the exchange rates among the various currencies that we use could cause fluctuations in our operational and financial results. Our expenses may become higher and our revenue and operating metrics may become lower than would be the case if exchange rates were stable or if we were operating and reporting in one currency. Movements in foreign currency exchange rates may have a material adverse effect on our results of operations, which may cause our financial and operational metrics reported in U.S. dollars to be not fully representative of our underlying business performance. Because fluctuations in the value of the local currencies are not necessarily correlated, our results of operations in any period may be adversely affected by such volatility. See “Item 11. Quantitative and Qualitative Disclosures About Market Risk.”

We may enter into derivatives transactions and incur relevant costs from time to time to manage our exposure to exchange rate risk. Such derivatives transactions while intended to be non-speculative, are designed to protect us against increases or decreases in exchange rates, but not both. If we have entered into derivatives transactions to protect against, for example, decreases in the value of a local currency and such local currency instead increases in value, we may incur financial losses. Such losses could materially and adversely affect our financial condition and results of operations.

The PRC government’s significant oversight over our business operation could result in a material adverse change in our operations in China and the value of our ADSs and common shares.

We conduct a portion of our business in China. Our operations in China are governed by PRC laws and regulations. The PRC government has significant oversight over the conduct of our business and may intervene or influence our operations. The PRC government has recently published new policies that significantly affected certain industries and we cannot rule out the possibility that it will in the future release regulations or policies that directly or indirectly affect our industry or require us to seek additional permission to continue our operations in China, which could result in a material adverse change in our operation in China and/or the value of our ADSs. Therefore, investors of our company face potential uncertainty from actions taken by the PRC government affecting our business.

The PCAOB is currently unable to inspect our auditor in relation to their audit work performed for our financial statements and the inability of the PCAOB to conduct inspections over our auditor deprives our investors of the benefits of such inspections.

Our auditor, PricewaterhouseCoopers Zhong Tian LLP, the independent registered public accounting firm that issues the audit report included elsewhere in this annual report, as an auditor of companies that are traded publicly in the United States and a firm registered with the Public Company Accounting Oversight Board (United States), or the PCAOB, is subject to laws in the United States pursuant to which the PCAOB conducts regular inspections to assess its compliance with the applicable professional standards. Since our auditor is located in China, a jurisdiction where the PCAOB has been unable to conduct inspections without the approval of the Chinese authorities, our auditor is not currently inspected by the PCAOB. As a result, we and investors in our ADSs may be deprived of the benefits of such PCAOB inspections. The inability of the PCAOB to conduct inspections of auditors in China makes it more difficult to evaluate the effectiveness of our independent registered public accounting firm's audit procedures or quality control procedures as compared to auditors outside of China that are subject to the PCAOB inspections, which could cause investors and potential investors in our ADSs to lose confidence in our audit procedures and reported financial information and the quality of our financial statements.

Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024 if the PCAOB is unable to inspect or fully investigate auditors located in China, or in 2023 if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment.

The Holding Foreign Companies Accountable Act, or the HFCAA, was signed into law on December 18, 2020. The HFCAA states if the SEC determines that we have filed audit reports issued by a registered public accounting firm that has not been subject to inspection for the PCAOB for three consecutive years beginning in 2021, the SEC will prohibit our shares or ADSs from being traded on a national securities exchange or in the over-the-counter trading market in the United States. On December 2, 2021, the SEC adopted final amendments implementing the disclosure and submission requirements of the HFCAA, pursuant to which the SEC will identify an issuer as a "Commission Identified Issuer" if the issuer has filed an annual report containing an audit report issued by a registered public accounting firm that the PCAOB has determined it is unable to inspect or investigate completely, and will then impose a trading prohibition on an issuer after it is identified as a Commission-Identified Issuer for three consecutive years. On December 16, 2021, the PCAOB issued a report to notify the SEC of its determination that the PCAOB is unable to inspect or investigate completely registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB identified our auditor as one of the registered public accounting firms that the PCAOB is unable to inspect or investigate completely. Therefore, we expect to be identified as a "Commission Identified Issuer" shortly after the filing of this annual report on Form 20-F.

Whether the PCAOB will be able to conduct inspections of our auditor before the issuance of our financial statements on Form 20-F for the year ending December 31, 2023 which is due by April 30, 2024, or at all, is subject to substantial uncertainty and depends on a number of factors out of our, and our auditor's, control. If our shares and ADSs are prohibited from trading in the United States, there is no certainty that we will be able to list on a non-U.S. exchange or that a market for our shares will develop outside of the United States. Such a prohibition would substantially impair your ability to sell or purchase our ADSs when you wish to do so, and the risk and uncertainty associated with delisting would have a negative impact on the price of our ADSs. Also, such a prohibition would significantly affect our ability to raise capital on terms acceptable to us, or at all, which would have a material adverse impact on our business, financial condition, and prospects.

On June 22, 2021, the U.S. Senate passed a bill which would reduce the number of consecutive non-inspection years required for triggering the prohibitions under the HFCAA from three years to two. On February 4, 2022, the U.S. House of Representatives passed a bill which contained, among other things, an identical provision. If this provision is enacted into law and the number of consecutive non-inspection years required for triggering the prohibitions under the HFCAA is reduced from three years to two, then our shares and ADSs could be prohibited from trading in the United States in 2023.

The approval of the CSRC or other PRC government authorities may be required in connection with our offerings outside China under PRC law, and, if required, we cannot predict whether or for how long we will be able to obtain such approval.

The Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, or the M&A Rules, adopted by six PRC regulatory agencies in 2006 and amended in 2009, requires an overseas special purpose vehicle formed for listing purposes through acquisitions of PRC domestic companies and controlled by PRC persons or entities to obtain the approval of the CSRC prior to the listing and trading of such special purpose vehicle's securities on an overseas stock exchange. As the interpretation and application of the regulations remain unclear, although we have a majority of our revenue outside China, we are not certain if our offerings outside China may ultimately require approval of the CSRC. If the CSRC approval is required, it is uncertain whether we can or how long it will take us to obtain the approval and, even if we obtain such CSRC approval, the approval could be rescinded. Any failure to obtain or delay in obtaining the CSRC approval for any of our offerings outside China, or a rescission of such approval if obtained by us, would subject us to sanctions imposed by the CSRC or other PRC regulatory authorities, which could include fines and penalties on our operations in China, restrictions or limitations on our ability to pay dividends outside of China, and other forms of sanctions that may materially and adversely affect our business, financial condition, and results of operations.

The General Office of the Central Committee of the Communist Party of China and the General Office of the State Council jointly issued the Opinions on Strictly Cracking Down on Illegal Securities Activities According to Law, or the Opinions, which were made available to the public on July 6, 2021. The Opinions mentioned that the administration and supervision of overseas-listed China-based companies will be strengthened, and the special provisions of the State Council on overseas issuance and listing of shares by such companies will be revised, clarifying the responsibilities of domestic industry competent authorities and regulatory authorities. As a follow-up, on December 24, 2021, the State Council issued a draft Provisions of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments), or the Administrative Provisions, and the CSRC issued a draft of Administration Measures for the Filing of Overseas Securities Offering and Listing by Domestic Companies (Draft for Comments), or the Draft Administration Measures, for public comments.

The Administrative Provisions and the Draft Administration Measures propose to establish a new filing-based regime to regulate overseas offerings and listings by domestic companies. According to the Administrative Provisions and the Draft Administration Measures, an overseas offering and listing by a domestic company, whether directly or indirectly, shall be filed with the CSRC. Specifically, the examination and determination of an indirect offering and listing will be conducted on a substance-over-form basis, and an offering and listing shall be considered as an indirect overseas offering and listing by a domestic company if the issuer meets the following conditions: (i) the operating income, gross profit, total assets, or net assets of the domestic enterprise in the most recent fiscal year was more than 50% of the relevant line item in the issuer's audited consolidated financial statement for that year; and (ii) senior management personnel responsible for business operations and management are mostly PRC citizens or are ordinarily resident in the PRC, and the main place of business is in the PRC or carried out in the PRC. According to the Draft Administration Measures, the issuer or its affiliated domestic company, as the case may be, shall file with the CSRC for its initial public offering, follow-on offering and other equivalent offing activities. Particularly, the issuer shall submit the filing with respect to its initial public offering and listing within three business days after its initial filing of the listing application, and submit the filing with respect to its follow-on offering within three business days after completion of the follow-on offering. Failure to comply with the filing requirements may result in fines to the relevant domestic companies, suspension of their businesses, revocation of their business licenses and operation permits and fines on the controlling shareholder and other responsible persons. The Draft Administration Measures also sets forth certain regulatory red lines for overseas offerings and listings by domestic enterprises.

As of the date of this annual report, the Administrative Provisions and the Draft Administration Measures were released for public comment only, the deadline of which was January 23, 2022. There are uncertainties as to whether the Administrative Provisions and the Draft Administration Measures would be further amended, revised or updated. Substantial uncertainties exist with respect to the enactment timetable and final content of the Administrative Provisions and the Draft Administration Measures. As the CSRC may formulate and publish guidelines for filings in the future, the Draft Administration Measures does not provide for detailed requirements of the substance and form of the filing documents. In a Q&A released on its official website, the respondent CSRC official indicated that the proposed new filing requirement will start with new companies and the existing companies seeking to carry out activities like follow-on financing. As for the filings for the existing companies, the regulator will grant adequate transition period and apply separate arrangements. The Q&A also addressed the contractual arrangements and pointed out that if relevant domestic laws and regulations have been observed, companies with compliant VIE structure may seek overseas listing after completion of the CSRC filings. Nevertheless, it does not specify what qualify as compliant VIE structures and what relevant domestic laws and regulations are required to be complied with. Given the substantial uncertainties surrounding the latest CSRC filing requirements at this stage, we cannot assure you that we will be able to complete the filings and fully comply with the relevant new rules on a timely basis, if at all.

Relatedly, on December 27, 2021, the NDRC and the Ministry of Finance, or the MOC, jointly issued the Special Administrative Measures (Negative List) for the Access of Foreign Investment (Edition 2021), or the 2021 Negative List, which became effective on January 1, 2022. Pursuant to the Special Administrative Measures, if a domestic company engaging in the prohibited business stipulated in the 2021 Negative List seeks an overseas offering and listing, it shall obtain the approval from the competent governmental authorities. Besides, the foreign investors of the company shall not be involved in the company's operation and management, and their shareholding percentages shall be subject, *mutatis mutandis*, to the relevant regulations on the domestic securities investments by foreign investors. Though an officer from the NDRC further explained in a press conference held in January 2022 that such requirements currently apply only to direct overseas listing by a domestic enterprise engaging in the prohibited business in the 2021 Negative List, given that the CSRC is formulating new rules to regulate the direct and indirect overseas listing, the possibility that these requirements under the 2021 Negative List will apply to indirect overseas offering and listing of PRC domestic enterprises with contractual arrangements like us may not be ruled out in the future. As the 2021 Negative List is relatively new, there remain substantial uncertainties as to the interpretation and implementation of these new requirements, and it is unclear as to whether and to what extent listed companies like us will be subject to these new requirements. If we are required to comply with these requirements and fail to do so on a timely basis, if at all, our business operation, financial conditions and business prospect in China may be adversely and materially affected.

In addition, we cannot assure you that any new rules or regulations promulgated in the future will not impose additional requirements on us. If it is determined in the future that approval and filing from the CSRC or other regulatory authorities or other procedures, including the cybersecurity review under the enacted version of the revised Measures for Cybersecurity Review and the Draft Cyber Data Security Regulations, are required for our offerings outside China, it is uncertain whether we can or how long it will take us to obtain such approval or complete such filing or review procedures and any such approval or filing could be rescinded or rejected. Any failure to obtain or delay in obtaining such approval or completing such filing procedures for our offerings outside China, or a rescission of any such approval or filing if obtained by us, would subject us to sanctions by the CSRC or other PRC regulatory authorities for failure to seek CSRC approval or filing or other government authorization for our offerings outside China. These regulatory authorities may impose fines and penalties on our operations in China, limit our ability to pay dividends outside of China, limit our operating privileges in China, delay or restrict the repatriation of the proceeds from our offshore offerings into China or take other actions that could materially and adversely affect our business, financial condition, results of operations, and prospects, as well as the trading price of our listed securities. The CSRC or other PRC regulatory authorities also may take actions requiring us, or making it advisable for us, to halt our offerings outside China before settlement and delivery of the shares offered. Consequently, if investors engage in market trading or other activities in anticipation of and prior to settlement and delivery, they do so at the risk that settlement and delivery may not occur. In addition, if the CSRC or other regulatory authorities later promulgate new rules or explanations requiring that we obtain their approvals or accomplish the required filing or other regulatory procedures for our prior offerings outside China, we may be unable to obtain a waiver of such approval requirements, if and when procedures are established to obtain such a waiver. Any uncertainties or negative publicity regarding such approval requirement could materially and adversely affect our business, prospects, financial condition, reputation, and the trading price of our listed securities.

It is not certain if we will be classified as a Singapore tax resident.

Under the Singapore Income Tax Act, a company established outside Singapore but whose governing body, being the board of directors, usually exercises de facto control and management of its business in Singapore could be considered a tax resident in Singapore. However, such control and management of the business should not be deemed to be in Singapore if physical board meetings are mainly conducted outside of Singapore. Where board resolutions are passed in the form of written consent signed by the directors each acting in their own jurisdictions, or where the board meetings are held by teleconference or videoconference, it is possible that the place of de facto control and management will be considered to be where the majority of the board are located when they sign such consent or attend such conferences.

We believe that we are not a Singapore tax resident for Singapore income tax purposes. However, our tax residence status is subject to determination by the Inland Revenue Authority of Singapore, or IRAS, and uncertainties remain with respect to the interpretation of the term "control and management" for the purposes of the Singapore Income Tax Act. If IRAS determines that we are a Singapore tax resident for Singapore income tax purposes, the portion of our single company income on an unconsolidated basis that is received or deemed by the Singapore Income Tax Act to be received in Singapore, where applicable, may be subject to Singapore income tax at the prevailing tax rate of 17% before applicable income tax exemptions or relief, where Bigo Singapore is entitled to enjoy the beneficial tax rate of 5% as the Incentive for the years 2018 through 2022. If we are regarded as a Singapore tax resident, any dividends received or deemed received by us in Singapore from subsidiaries located in a foreign jurisdiction with a rate of income tax or tax of a similar nature of no more than 15% may generally be subject to additional Singapore income tax where there is no other applicable tax treaty between such foreign jurisdiction and Singapore. Income is considered to have been received in Singapore when it is: (i) remitted to, transmitted or brought into Singapore; (ii) applied in or towards satisfaction of any debt incurred in respect of a trade or business carried on in Singapore; or (iii) applied to purchase any movable property that is brought into Singapore. In addition, as Singapore does not impose withholding tax on dividends declared by Singapore resident companies, if we are considered a Singapore tax resident, dividends paid to the holders of our common shares and ADSs will not be subject to withholding tax in Singapore. Regardless of whether or not we are regarded as a Singapore tax resident, holders of our common shares or the ADSs who are not Singapore tax residents would generally not be subject to Singapore income tax on gains derived from the disposal of our common shares or the ADSs if such shareholders do not maintain a permanent establishment in Singapore, to which the disposition gains may be effectively connected, and the entire process (including the negotiation, deliberation, execution of the acquisition and sale, etc.) leading up to the actual acquisition and sale of the ADSs or our common shares is performed outside of Singapore. For Singapore resident shareholders, if the gain from disposal of our common shares or the ADSs is considered by IRAS as income in nature, such gain will generally be subject to Singapore income tax, and not taxable in Singapore if the gain is considered by IRAS as capital gains in nature. See "Item 10. Additional Information—Taxation—Singapore Taxation."

Uncertainties in the interpretation and enforcement of Chinese laws and regulations could limit the legal protections available to you and us.

The PRC legal system is based on written statutes and prior court decisions have limited value as precedents. Each of our PRC subsidiaries is a foreign-invested enterprise and is subject to laws and regulations applicable to foreign-invested enterprises as well as various Chinese laws and regulations generally applicable to companies incorporated in China. However, since these laws and regulations are relatively new and the PRC legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules are not always uniform and enforcement of these laws, regulations and rules involves uncertainties.

From time to time, we may have to resort to administrative and court proceedings to enforce our legal rights. However, since PRC administrative and court authorities have significant discretion in interpreting and implementing statutory and contractual terms, it may be more difficult to evaluate the outcome of administrative and court proceedings and the level of legal protection we enjoy than in more developed legal systems. Furthermore, the PRC legal system is based in part on government policies and internal rules (some of which are not published in a timely manner or at all) that may have retroactive effect. As a result, we may not be aware of our violation of these policies and rules until sometime after the violation. Such uncertainties, including uncertainty over the scope and effect of our contractual, property (including intellectual property) and procedural rights, could materially and adversely affect our business and impede our ability to continue our operations.

Changes in China's economic, political or social conditions or government policies may adversely affect our business, financial condition and results of operations in China.

With some of our subsidiaries located in China, our business, financial condition, results of operations and prospects may be influenced to a significant degree by political, economic and social conditions in China generally and by continued economic growth in China as a whole.

The Chinese economy differs from the economies of most developed countries in many respects, including the level of government involvement, level of development, growth rate, control of foreign exchange and allocation of resources. Although the Chinese government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets, and the establishment of improved corporate governance in business enterprises, a substantial portion of productive assets in China is still owned by the Chinese government. In addition, the Chinese government continues to play a significant role in regulating industry development by imposing industrial policies. The Chinese government also exercises significant control over the Chinese economic growth through allocating resources, controlling payment of foreign currency-denominated obligations, setting monetary policy, regulating financial services and institutions and providing preferential treatment to particular industries or companies.

While the Chinese economy has experienced significant growth over the past decades, growth has been uneven, both geographically and among various sectors of the economy. The Chinese government has implemented various measures to encourage economic growth and guide the allocation of resources. Some of these measures may benefit the overall Chinese economy, but may have a negative effect on us. For example, our financial condition and results of operations may be adversely affected by government control over capital investments or changes in tax regulations. The growth rate of the Chinese economy has gradually slowed since 2010, and the impact of COVID-19 on the Chinese economy in 2020 was severe. Any prolonged slowdown in the Chinese economy may reduce the demand for our products and services and may adversely affect our business and results of operations in China.

We may be adversely affected by the complexity, uncertainties and changes in PRC regulation of internet business and companies.

The PRC government extensively regulates the internet industry, including foreign ownership of, and the licensing and permit requirements pertaining to, companies in the internet industry. These internet-related laws and regulations are relatively new and evolving, and their interpretation and enforcement involve significant uncertainty. As a result, in certain circumstances it may be difficult to determine what actions or omissions may be deemed to be in violations of applicable laws and regulations. Issues, risks and uncertainties relating to PRC regulation of the internet business include, but are not limited to, the following:

- We only have contractual control over our platforms in China. The variable interest entities own our platforms in China due to the restriction of foreign investment in businesses providing value-added telecommunication services in China, including internet content provision services. If any of the variable interest entities breaches its contractual arrangements with us and no longer remains under our control, this may significantly disrupt our business, subject us to sanctions, compromise enforceability of related contractual arrangements, or have other harmful effects on us.

- There are uncertainties relating to the regulation of the internet business in China, including evolving licensing practices and the requirement for real-name registrations. Permits, licenses or operations at some of our subsidiaries and the variable interest entities levels may be subject to challenge, or we may fail to obtain permits or licenses that may be deemed necessary for our operations or we may not be able to obtain or renew certain permits or licenses. See "—Risks Related to Our Corporate Structure—If the variable interest entities fail to obtain and maintain the requisite licenses and approvals required under the complex regulatory environment for internet-based businesses in China, our business, financial condition and results of operations in China may be adversely affected" and "Item 4. Information on the Company—B. Business Overview—PRC Regulation."

- The evolving PRC regulatory system for the internet industry may lead to the establishment of new regulatory agencies. For example, in May 2011, the State Council announced the establishment of a new department, the State Internet Information Office (with the involvement of the State Council Information Office, or the SCIO, the MIIT and the Ministry of Public Security). The primary role of this new agency is to facilitate the policy-making and legislative development in this field to direct and coordinate with the relevant departments in connection with online content administration and to deal with cross-ministry regulatory matters in relation to the internet industry. We are unable to determine what policies this new agency or any new agencies to be established in the future may have or how they may interpret existing laws, regulations and policies and how they may affect us. Further, new laws, regulations or policies may be promulgated or announced that will regulate internet activities, including online video and online advertising businesses. If these new laws, regulations or policies are promulgated, additional licenses may be required for our operations in China. If our PRC operations do not comply with these new regulations after they become effective, or if we fail to obtain any licenses required under these new laws and regulations, we could be subject to penalties.

On July 13, 2006, the MIIT issued the Notice of the Ministry of Information Industry on Intensifying the Administration of Foreign Investment in Value-added Telecommunications Services. This notice prohibits domestic telecommunication service providers from leasing, transferring or selling telecommunication business operating licenses to any foreign investor in any form, or providing any resources, sites or facilities to any foreign investor for their illegal operation of a telecommunication business in China. According to this notice, either the holder of a value-added telecommunication business operating license or its shareholders must be the registered holders of the domain names or trademarks used by such license holders in their provision of value-added telecommunication services. The notice also requires each license holder to have the necessary facilities, including servers, for its approved business operations and to maintain such facilities in the regions covered by its license. Currently, all contracts with telecommunication carriers and other service providers to host the servers used in our business within China were entered into by the variable interest entities, and such arrangements are in compliance with this notice. The variable interest entities also own the related domain names and trademarks, and hold the ICP License necessary to conduct our operations in China.

The interpretation and application of existing PRC laws, regulations and policies and possible new laws, regulations or policies relating to the internet industry have created substantial uncertainties regarding the legality of existing and future foreign investments in, and the businesses and activities of, internet businesses in China, including our business. There are also risks that we may be found to violate the existing or future laws and regulations given the uncertainty and complexity of China's regulation of internet business.

Under the PRC enterprise income tax law, we may be classified as a PRC "resident enterprise," which could result in unfavorable tax consequences to us and our shareholders and have a material adverse effect on our results of operations and the value of your investment.

Under the PRC Enterprise Income Tax Law that became effective on January 1, 2008 and respectively amended on February 24, 2017 and December 29, 2018, an enterprise established outside the PRC with "de facto management bodies" within the PRC is considered a "resident enterprise" for PRC enterprise income tax purposes and is generally subject to a uniform 25% enterprise income tax rate on its worldwide income. On April 22, 2009, the State Administration of Taxation, or the SAT, issued the Notice Regarding the Determination of Chinese-Controlled Overseas Incorporated Enterprises as PRC Tax Resident Enterprise on the Basis of De Facto Management Bodies, or SAT Circular 82, which provides certain specific criteria for determining whether the "de facto management body" of a PRC-controlled enterprise that is incorporated offshore is located in China. Further to SAT Circular 82, on August 3, 2011, the SAT issued the Administrative Measures of Enterprise Income Tax of Chinese-Controlled Offshore Incorporated Resident Enterprises (Trial), or SAT Bulletin 45, which became effective on September 1, 2011, to provide more guidance on the implementation of SAT Circular 82. SAT Bulletin 45 clarified certain issues in the areas of resident status determination, post-determination administration and competent tax authorities.

According to SAT Circular 82, an offshore incorporated enterprise controlled by a PRC enterprise or a PRC enterprise group will be considered as a PRC tax resident enterprise by virtue of having its "de facto management body" in China and will be subject to PRC enterprise income tax on its worldwide income only if all of the following conditions are met: (a) the senior management and core management departments in charge of its daily operations function have their presence mainly in the PRC; (b) its financial and human resources decisions are subject to determination or approval by persons or bodies in the PRC; (c) its major assets, accounting books, company seals, and minutes and files of its board and shareholders' meetings are located or kept in the PRC; and (d) more than half of the enterprise's directors or senior management with voting rights habitually reside in the PRC. SAT Bulletin 45 further clarifies the resident status determination, post-determination administration, as well as competent tax authorities.

Although SAT Circular 82 and SAT Bulletin 45 only apply to offshore incorporated enterprises controlled by PRC enterprises or PRC enterprise group instead of those controlled by PRC individuals or foreigners, the determination criteria set forth therein may reflect SAT's general position on how the term "de facto management body" could be applied in determining the tax resident status of offshore enterprises, regardless of whether they are controlled by PRC enterprises, individuals or foreigners.

We do not meet all of the conditions above; therefore, we believe that we should not be treated as a "resident enterprise" for PRC tax purposes even if the standards for "de facto management body" prescribed in the SAT Circular 82 are applicable to us. For example, our minutes and files of the resolutions of our board of directors and the resolutions of our shareholders are maintained outside the PRC.

However, it is possible that the PRC tax authorities may take a different view. If the PRC tax authorities determine that our Cayman Islands holding company is a PRC resident enterprise for PRC enterprise income tax purposes, then our world-wide income could be subject to PRC tax at a rate of 25%, which could materially reduce our net income. In addition, we will also be subject to PRC enterprise income tax reporting obligations.

Although dividends paid by one PRC tax resident to another PRC tax resident should qualify as "tax-exempt income" under the enterprise income tax law, we cannot assure you that dividends by our PRC subsidiaries to our Cayman Islands holding company will not be subject to a 10% withholding tax, as the PRC foreign exchange control authorities, which enforce the withholding tax on dividends, and the PRC tax authorities have not yet issued guidance with respect to the processing of outbound remittances to entities that are treated as resident enterprises for PRC enterprise income tax purposes.

We face uncertainties on the reporting and consequences on private equity financing transactions, private share transfers and share exchange involving the transfer of shares in our company by non-resident investors.

On February 3, 2015, the PRC State Administration of Taxation issued the Notice on Several Issues Concerning Enterprise Income Tax for Indirect Share Transfer by Non-PRC Resident Enterprises, or the SAT Circular 7, which partially replaced and supplemented previous rules under the Notice on Strengthening Administration of Enterprise Income Tax for Share Transfers by Non-PRC Resident Enterprises issued by the PRC State Administration of Taxation on December 10, 2009, with retroactive effect from January 1, 2008, or SAT Circular 698. Pursuant to SAT Circular 7, an "indirect transfer" of assets of a PRC resident enterprise, including equity interests in a PRC resident enterprise, by non-PRC resident enterprises may be re-characterized and treated as a direct transfer of PRC taxable properties, if such transaction arrangement lacks reasonable commercial purpose and was established for the purpose of reducing, avoiding or deferring PRC enterprise income tax. As a result, gains derived from such indirect transfer may be subject to PRC enterprise income tax, and tax filing or withholding obligations may be triggered, depending on the nature of the PRC taxable properties being transferred. According to SAT Circular 7, "PRC taxable properties" include assets of a PRC establishment or place of business, real properties in the PRC, and equity investments in PRC resident enterprises, in respect of which gains from their transfer by a direct holder, being a non-PRC resident enterprise, would be subject to PRC enterprise income taxes. When determining if there is a "reasonable commercial purpose" of the transaction arrangement, features to be taken into consideration include: whether the main value of the equity interest of the relevant offshore enterprise derives from PRC taxable properties; whether the assets of the relevant offshore enterprise mainly consists of direct or indirect investment in China or if its income mainly derives from China; whether the offshore enterprise and its subsidiaries directly or indirectly holding PRC taxable properties have real commercial nature which is evidenced by their actual function and risk exposure; the duration of existence of the business model and organizational structure; the replicability of the transaction by direct transfer of PRC taxable properties; and the tax situation of such indirect transfer and applicable tax treaties or similar arrangements. In respect of an indirect offshore transfer of assets of a PRC establishment or place of business of a foreign enterprise, the resulting gain is to be included with the annual enterprise filing of the PRC establishment or place of business being transferred, and would consequently be subject to PRC enterprise income tax at a rate of 25%. Where the underlying transfer relates to PRC real properties or to equity investments in a PRC resident enterprise, which is not related to a PRC establishment or place of business of a non-resident enterprise, a PRC enterprise income tax at a rate of 10% would apply, subject to available preferential tax treatment under applicable tax treaties or similar arrangements, and the party who is obligated to make the transfer payments has the withholding obligation. Where the payor fails to withhold any or sufficient tax, the transferor shall declare and pay such tax to the competent tax authority by itself within the statutory time limit. Late payment of applicable tax will subject the transferor to default interest. Circular 7 does not apply to transactions of sale of shares by investors through a public stock exchange where such shares were acquired from a transaction through a public stock exchange. On October 17, 2017, SAT issued the Announcement on Issues Relating to Withholding at Source of Income Tax of Non-resident Enterprises, or SAT Circular 37, effective December 2017, superseded the Non-resident Enterprises Measures and SAT Circular 698 as a whole and partially amended some provisions in SAT Circular 7. SAT Circular 37 purports to clarify certain issues by providing the definition of equity transfer income and tax basis, the foreign exchange rate to be used in the calculation of withholding amount, and the date of occurrence of the withholding obligation. Specifically, SAT Circular 37 provides that where the transfer income subject to withholding at source is derived by a non-PRC resident enterprise in instalments, the instalments may first be treated as recovery of costs of previous investments. Upon recovery of all costs, the tax amount to be withheld must then be computed and withheld. Currently, the sale of shares by investors through a public stock exchange where such shares were acquired from a transaction through a public stock exchange is not considered an "indirect transfer" subject to the rules described above.

We cannot assure you that the PRC tax authorities will not, at their discretion, adjust any capital gains and impose tax return filing and withholding or tax payment obligations on the transferors and transferees of our shares acquired or sold outside a public stock exchange, while our PRC subsidiaries may be requested to assist in the filing. Any PRC tax imposed on a transfer of our shares or any adjustment of such gains would cause us to incur additional costs and may have a negative impact on the value of your investment in our company.

If our preferential tax treatments are revoked or become unavailable or if the calculation of our tax liability is successfully challenged by the relevant tax authorities, we may be required to pay tax, interest and penalties in excess of our tax provisions, and our financial condition and results of operations could be materially and adversely affected.

The Chinese government has provided various tax incentives to our subsidiaries in China. These incentives include reduced enterprise income tax rates. For example, under the PRC Enterprise Income Tax Law, or the EIT Law, which became effective on January 1, 2008 and subsequently amended on February 24, 2017 and on December 29, 2018, respectively, the statutory enterprise income tax rate is 25%. However, BaiGuoYuan Technology renewed its qualification as a high and new technology enterprise, or HNTE, on December 20, 2021 and, subject to the approval of an annual review by competent tax authorities in Guangdong, would be entitled to enjoy a preferential enterprise income tax rate of 15% for three years, from 2021 through 2023. In addition, in 2018, Guangzhou Huanju Shidai was qualified as a “Key National Software Enterprise” after relevant government authorities’ assessment and was entitled to a preferential income tax rate of 10% and enjoyed an overall 15% preferential tax rate as a HNTE from 2020. Guangzhou Huanju will need to re-apply for HNTE qualification renewal in 2022. Guangzhou BaiGuoYuan was qualified as a Software Enterprise and enjoyed the zero preferential tax beginning from 2018 and 12.5% preferential tax rate beginning from 2020. However, if any of the abovementioned companies fails to maintain its qualification for preferential tax treatments, its applicable enterprise income tax rate may increase to 25% or the applicable standard tax rate, which could materially and adversely affect our financial condition and results of operations.

In addition, according to the applicable provisions under Singapore law, corporations that are engaging in new high-value-added projects, expanding or upgrading their operations, or undertaking incremental activities after their pioneer period may apply for their profits to be taxed at a reduced rate of 5%, at minimum, for an initial period of up to ten years. The total tax relief period for each qualifying project or activity is subject to a maximum of 40 years (inclusive of the post-pioneer relief period previously granted, if applicable). Bigo Technology Pte. Ltd., or Bigo Singapore, was approved for such preferential tax treatment, enabling it to enjoy the preferential tax rate of 5% with the valid period from 2018 to 2022. Bigo Singapore will need to re-apply for such preferential tax treatment in 2023.

China's M&A Rules and certain other PRC regulations establish complex procedures for certain acquisitions of Chinese companies by foreign investors, which could make it more difficult for us to pursue growth through acquisitions in China.

Six PRC regulatory agencies promulgated regulations effective on September 8, 2006, subsequently amended on June 22, 2009, that are commonly referred to as the M&A Rules. See "Item 4. Information on the Company—B. Business Overview—PRC Regulation— Regulations on Overseas Listing by Domestic Companies." The M&A Rules establish procedures and requirements that could make some acquisitions of Chinese companies by foreign investors more time-consuming and complex, including requirements in some instances that the MOFCOM be notified in advance of any change-of-control transaction in which a foreign investor takes control of a Chinese domestic enterprise or a foreign company with substantial PRC operations, if certain thresholds under the Provisions on Thresholds for Prior Notification of Concentrations of Undertakings, issued by the State Council on August 3, 2008 and amended on September 18, 2018, are triggered. Moreover, the Anti-Monopoly Law promulgated by the Standing Committee of the National People's Congress on August 30, 2007 which became effective on August 1, 2008 requires that transactions which are deemed concentrations and involve parties with specified turnover thresholds (for example, during the previous fiscal year, (i) the total global turnover of all operators participating in the transaction exceeds RMB10 billion and at least two of these operators each had a turnover of more than RMB400 million within China, or (ii) the total turnover within China of all the operators participating in the concentration exceeded RMB2 billion and at least two of these operators each had a turnover of more than RMB400 million within China) must be cleared by the MOFCOM before they can be completed. In addition, on February 3, 2011, the General Office of the State Council promulgated a Notice on Establishing the Security Review System for Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, or the Circular No. 6, which officially established a security review system for mergers and acquisitions of domestic enterprises by foreign investors. According to the Rules on Implementation of Security Review System for the Merger and Acquisition of Domestic Enterprises by Foreign Investors issued by the MOFCOM on August 25, 2011 and became effective on September 1, 2011 and Circular No. 6, a security review is required for mergers and acquisitions by foreign investors having "national defense and security" concerns and mergers and acquisitions by which foreign investors may acquire the "de facto control" of domestic enterprises with "national security" concerns, and the regulations prohibit any activities attempting to bypass such security review, including by structuring the transaction through a proxy or contractual control arrangement. Furthermore, on December 19, 2020, the NDRC and the MOFCOM promulgated the Measures for Security Review of Foreign Investment, or the Foreign Investment Security Review Measures, which took effect on January 18, 2021. Under the Foreign Investment Security Review Measures, investment in certain key areas which results in acquiring the actual control of the assets is required to obtain approval from designated governmental authorities in advance.

In the future, we may grow our business by acquiring complementary businesses. Complying with the requirements of the above-mentioned regulations and other relevant rules to complete such transactions could be time-consuming, and any required approval processes, including obtaining approval from the MOFCOM or its local counterparts, may delay or inhibit our ability to complete such transactions. As the Foreign Investment Security Review Measures was relatively new, there are great uncertainties with respect to its interpretation and implementation. It is unclear whether our business would be deemed to be in an industry that raises "national defense and security" or "national security" concerns. If our business is in an industry subject to the security review, in which case our future acquisitions in the PRC, including those by way of entering into contractual control arrangements with target entities, may be closely scrutinized or prohibited. Our ability to expand our business or maintain or expand our market share in China through future acquisitions would as such be adversely affected.

PRC regulations relating to offshore investment activities by PRC residents may limit our PRC subsidiaries' ability to increase their registered capital or distribute profits to us or otherwise expose us to liability and penalties under PRC law.

The PRC State Administration of Foreign Exchange, or SAFE, has promulgated regulations, including the Notice on Relevant Issues Relating to Domestic Residents' Investment and Financing and Round-Trip Investment through Special Purpose Vehicles, or SAFE Circular No. 37, effective on July 4, 2014, and its appendixes, that require PRC residents, including PRC institutions and individuals, to register with local branches of SAFE in connection with their direct establishment or indirect control of an offshore entity, for the purpose of overseas investment and financing, with such PRC residents' legally owned assets or equity interests in domestic enterprises or offshore assets or interests, referred to in SAFE Circular No. 37 as a "special purpose vehicle." SAFE Circular No. 37 further requires amendment to the registration in the event of any significant changes with respect to the special purpose vehicle, such as increase or decrease of capital contributed by PRC individuals, share transfer or exchange, merger, division or other material event. In the event that a PRC shareholder holding interests in a special purpose vehicle fails to fulfill the required SAFE registration, the PRC subsidiaries of that special purpose vehicle may be prohibited from making profit distributions to the offshore parent and from carrying out subsequent cross-border foreign exchange activities, and the special purpose vehicle may be restricted in their ability to contribute additional capital into its PRC subsidiary. Further, failure to comply with the various SAFE registration requirements described above could result in liability under PRC law for foreign exchange evasion, including (i) the requirement by SAFE to return the foreign exchange remitted overseas within a period specified by SAFE, with a fine of up to 30% of the total amount of foreign exchange remitted overseas and deemed to have been evasive and (ii) in circumstances involving serious violations, a fine of no less than 30% of and up to the total amount of remitted foreign exchange deemed evasive. Furthermore, the persons-in-charge and other persons at our PRC subsidiaries who are held directly liable for the violations may be subject to criminal sanctions.

Since there remains uncertainty with respect to the interpretation and implementation of Circular No. 37, and we cannot predict how such SAFE regulations will affect our business operations. For example, our present and prospective PRC subsidiaries' ability to conduct foreign exchange activities, such as the remittance of dividends and foreign currency-denominated borrowings, may be subject to compliance with the SAFE regulations by our PRC resident shareholders. In addition, in some cases, we may have little control over either our present or prospective direct or indirect PRC resident shareholders or the outcome of such registration procedures. A failure by our current or future PRC resident shareholders to comply with the SAFE regulations, including, but not limited to, any delay in subsequent filings, could subject us to fines or other legal sanctions, restrict our cross-border investment activities, limit our subsidiary's ability to make distributions or pay dividends or affect our ownership structure, which could adversely affect our business and prospects.

On February 15, 2012, SAFE promulgated the Notices on Issues Concerning the Foreign Exchange Administration for Domestic Individuals Participating in Stock Incentive Plans of Overseas Publicly-Listed Companies, or the Stock Option Rules. Under the Stock Option Rules and other relevant rules and regulations, PRC residents who participate in stock incentive plan in an overseas publicly-listed company are required to register with SAFE or its local branches and complete certain other procedures. Participants of a stock incentive plan who are PRC residents must retain a qualified PRC agent, which could be a PRC subsidiary of such overseas publicly listed company or another qualified institution selected by such PRC subsidiary, to conduct the SAFE registration and other procedures with respect to the stock incentive plan on behalf of its participants. Such participants must also retain an overseas entrusted institution to handle matters in connection with their exercise of stock options, the purchase and sale of corresponding stocks or interests and fund transfers. In addition, the PRC agent is required to amend the SAFE registration with respect to the stock incentive plan if there is any material change to the stock incentive plan, the PRC agent or the overseas entrusted institution or other material changes. We and our PRC employees who have been granted stock options, restricted shares and restricted share units are subject to these regulations, and are preparing to complete such SAFE registrations. Failure of our PRC stock option holders, restricted shareholders or restricted share units holders to complete their SAFE registrations may subject these PRC residents to fines and legal sanctions and may also limit our ability to contribute additional capital into our PRC subsidiaries, limited our PRC subsidiaries' ability to distribute dividends to us, or otherwise materially and adversely affect our business.

PRC regulation of direct investment and loans by offshore holding companies to PRC entities may delay or limit us from using the proceeds of public offerings to make additional capital contributions or loans to our PRC subsidiaries.

We are an offshore holding company conducting part of our operations in China through our PRC subsidiaries and variable interest entities. We may make loans to our PRC subsidiaries and variable interest entities, or we may make additional capital contributions to our PRC subsidiaries.

Any capital contributions or loans that we, as an offshore entity, make to our PRC subsidiaries, including from the proceeds of our public offerings, are subject to PRC regulations. For example, none of our loans to a PRC subsidiary can exceed the statutory limits, and the loans must be registered with the local branch of SAFE. Our capital contributions to our PRC subsidiaries are subject to the requirement of making necessary registration with competent governmental authorities in China.

In August 2008, SAFE issued the Circular on the Relevant Operating Issues Concerning the Improvement of the Administration of the Payment and Settlement of Foreign Currency Capital of Foreign-Invested Enterprises, or SAFE Circular 142, regulating the conversion by a foreign-invested enterprise of foreign currency-registered capital into RMB by restricting how the converted RMB may be used. In addition, SAFE promulgated Circular 45 on November 9, 2011 in order to clarify the application of SAFE Circular 142, which was repealed on March 19, 2015. Under SAFE Circular 142 and Circular 45, the RMB capital converted from foreign currency registered capital of a foreign-invested enterprise may only be used for purposes within the business scope approved by the applicable government authority and may not be used for equity investments within the PRC. In addition, SAFE strengthened its oversight of the flow and use of the RMB capital converted from foreign currency registered capital of foreign-invested enterprises. The use of such RMB capital may not be changed without SAFE's approval, and such RMB capital may not in any case be used to repay RMB loans if the proceeds of such loans have not been used.

Since SAFE Circular 142 has been in place for more than five years, in 2014, SAFE decided to further reform the foreign exchange administration system in order to satisfy and facilitate the business and capital operations of foreign invested enterprises, and issued the Circular on the Relevant Issues Concerning the Launch of Reforming Trial of the Administration Model of the Settlement of Foreign Currency Capital of Foreign-Invested Enterprises in Certain Areas on July 4, 2014, or SAFE Circular 36. SAFE Circular 36 suspends the application of SAFE Circular 142 in certain areas and allows a foreign-invested enterprise registered in such areas to use the RMB capital converted from foreign currency registered capital for equity investments within the scope of business, which will be regarded as the reinvestment of foreign-invested enterprise. On March 30, 2015, SAFE issued the Circular on the Reforming of the Management Method of the Settlement of Foreign Currency Capital of Foreign-Invested Enterprises, or SAFE Circular 19, took effect on June 1, 2015, and replaced SAFE Circular 142 and SAFE Circular 36. Under SAFE Circular 19, a foreign-invested enterprise, within the scope of business, may also choose to convert its registered capital from foreign currency to RMB on a discretionary basis, and the RMB capital so converted can be used for equity investments within PRC, which will be regarded as the reinvestment of foreign-invested enterprise.

The Notice of the SAFE on Reforming and Standardizing the Foreign Exchange Settlement Management Policy of Capital Account, promulgated by the SAFE and became effective on June 9, 2016 provides that discretionary foreign exchange settlement applies to foreign exchange capital, foreign debt offering proceeds and remitted foreign listing proceeds, and the corresponding RMB capital converted from foreign exchange are not restricted from extending loans to related parties or repaying the inter-company loans (including advances by third parties). In January 2017, SAFE promulgated the Circular on Further Improving Reform of Foreign Exchange Administration and Optimizing Genuineness and Compliance Verification, or Circular 3, which stipulates several capital control measures with respect to the outbound remittance of profit from domestic entities to offshore entities, including (i) under the principle of genuine transaction, banks shall check board resolutions regarding profit distribution, the original version of tax filing records and audited financial statements; and (ii) domestic entities shall hold income to account for previous years' losses before remitting the profits. Moreover, pursuant to Circular 3, domestic entities shall make detailed explanations of the sources of capital and utilization arrangements, and provide board resolutions, contracts and other proof when completing the registration procedures in connection with an outbound investment.

In light of the various requirements imposed by PRC regulations on loans to and direct investment in PRC entities by offshore holding companies, we cannot assure you that we will be able to complete the necessary registration or obtain the necessary approval on a timely basis, or at all. If we fail to complete the necessary registration or obtain the necessary approval, our ability to make loans or equity contributions to our PRC subsidiaries may be negatively affected, which could adversely affect our PRC subsidiaries' liquidity and their ability to fund their working capital and expansion projects and meet their obligations and commitments.

Our PRC subsidiaries and the variable interest entities are subject to restrictions on paying dividends or making other payments to us, which may restrict our ability to satisfy our liquidity requirements.

We are a holding company incorporated in the Cayman Islands. We rely on proceeds from corporate transactions such as the sales of Huya and YY Live, and dividends from our subsidiaries, including PRC and non-PRC subsidiaries, as well as consulting and other fees paid to us by the variable interest entities for our cash and financing requirements, such as the funds necessary to pay dividends and other cash distributions to our shareholders, including holders of our ADSs, and service any debt we may incur. Current PRC regulations permit our PRC subsidiaries to pay dividends to us only out of their accumulated after-tax profits upon satisfaction of relevant statutory condition and procedures, if any, determined in accordance with Chinese accounting standards and regulations. In addition, each of our PRC subsidiaries is required to set aside at least 10% of its accumulated profits each year, if any, to fund certain reserve funds until the total amount set aside reaches 50% of its registered capital. As of December 31, 2021, appropriations to statutory reserves amounting to US$26.8 million were made by twenty-nine variable interest entities. These reserves are not distributable as cash dividends. Furthermore, if our PRC subsidiaries and the variable interest entities incur debt on their own behalf in the future, the instruments governing the debt may restrict their ability to pay dividends or make other payments to us, which may restrict our ability to satisfy our liquidity requirements. Our capital expenditures are primarily used to purchase office space.

In addition, the EIT Law, and its implementation rules provide that withholding tax rate of 10% will be applicable to dividends payable by Chinese companies to non-PRC-resident enterprises unless otherwise exempted or reduced according to treaties or arrangements between the PRC central government and governments of other countries or regions where the non-PRC-resident enterprises are incorporated.

With the sale of YY Live to Baidu being substantially completed with certain customary matters, including necessary regulatory approvals from government authorities, remaining to be completed in the future, the majority of our revenue and operating cash would be from non-PRC subsidiaries, and our reliance on dividends from PRC subsidiaries would be limited.

Substantial uncertainties exist with respect to the interpretation and implementation of the Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.

On March 15, 2019, the Standing Committee of the National People's Congress promulgated the Foreign Investment Law, or the Foreign Investment Law, which took effect on January 1, 2020, and on December 12, 2019, the Implementation Regulations of Foreign Investment Law was promulgated by the State Council, which simultaneously came into force on January 1, 2020. The Foreign Investment Law, together with the Implementation Regulations of Foreign Investment Law, replaced the trio of existing laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign-invested Enterprise Law, together with their implementation rules and ancillary regulations. This law is the legal foundation for foreign investment in the PRC. The Foreign Investment Law embodies an expected PRC regulatory trend to rationalize its foreign investment regulatory regime in line with prevailing international practice and the legislative efforts to unify the corporate legal requirements for both foreign and domestic investments. The Implementation Regulations of Foreign Investment Law provide detailed rules for the principles of investment protection, promotion and management set forth in the Foreign Investment Law.

The Foreign Investment Law stipulates three forms of foreign investment, but does not explicitly stipulate the contractual arrangements under the "variable interest equity" structures as a form of foreign investment. The Foreign Investment Law further stipulates that foreign investment includes "foreign investors invest in China through any other methods under laws, administrative regulations, or provisions prescribed by the State Council." Therefore, it is possible that future laws, administrative regulations or provisions of the State Council may stipulate contractual arrangements as a form of foreign investment, and then whether the contractual arrangements will be recognized as a foreign investment, whether the contractual arrangements will be deemed to be in violation of the access requirements of foreign investment and how the contractual arrangements will be interpreted and handled remain uncertain. Conversely, if contractual arrangements are then incorporated as a form of foreign investment, it may materially impact our corporate governance practice and increase our compliance costs.

Content posted and displayed on our platforms operated in China may be found objectionable by PRC regulatory authorities and may subject us to penalties and other severe consequences.

The PRC government has adopted regulations governing internet access and the distribution of information over the internet. Such regulations may intensify and become more stringent from time to time, subjecting us to increased levels of content monitoring requirements, which may increase our expenses and risk of non-compliance with relevant PRC regulations. Under these regulations, internet content providers and internet publishers are prohibited from posting or displaying over the internet content that, among other things, violates PRC laws and regulations, impairs the national dignity of China or the public interest, or is obscene, superstitious, fraudulent or defamatory. Internet content providers are also prohibited from displaying content that may be deemed by relevant government authorities as "socially destabilizing" or leaking "state secrets" of the PRC. Failure to comply with these requirements by our platform in China may result in the revocation of licenses to provide internet content and other licenses, the closure of the concerned platforms and reputational harm. The operator may also be held liable for such censored information displayed on or linked to their platform. For a detailed discussion, see "Item 4. Information on the Company—B. Business Overview—Regulations—PRC Regulation."

We allow visitors to our platforms to upload written materials, images, pictures, and other content on the forums on our platforms, and also allow users to share, link to and otherwise access audio, video, games and other content from third parties through our platforms. For a description of how content can be accessed on or through our platforms, and what measures we take to lessen the likelihood that we will be held liable for the nature of such content, see "Item 4. Information on the Company—B. Business Overview—Technology," "Item 4. Information on the Company—B. Business Overview—Intellectual Property," and "—Risks Related to Our Business and Industry — We have been and may be subject to intellectual property infringement, misappropriation or other claims or allegations in multiple jurisdictions, which could result in our payment of substantial damages, penalties and fines, removal of relevant content from our website or seeking license arrangements which may not be available on commercially reasonable terms."

Since our inception, we have worked closely with relevant government authorities to monitor the content on our platforms and to make the utmost effort in complying with relevant laws and regulations. However, it may not be possible to timely determine in all cases the types of content that could result in our liability as an internet operator, and if any of our internet content on our platform operated in China is deemed by the PRC government to violate any content restrictions, we would not be able to continue to display such content and could become subject to penalties, including confiscation of income, fines, suspension of business and revocation of required licenses, which could adversely affect our business, financial condition and results of operations. We may also be subject to potential liability for any unlawful actions of our users or third-party service providers on our platforms operated in China or for content we distribute that is deemed inappropriate. For example, we have previously been subject to a few warnings and fines in an aggregate amount of RMB0.2 million in 2018 for having inappropriate content on our platforms. Although we corrected these non-compliances and undertook measures to prevent the recurrence of such instances, it may be difficult to determine the type of content or actions that may result in liability to us, and if we are found to be liable, we may be prevented from operating our business in China. In April 2019, Bilin, a mobile instant communication application of ours that contributed an insignificant portion of our total revenues, in accordance with the requirements of the Office of the Cyberspace Affairs Commission, ceased its services. Additionally, in September 2021, *Hello*, our real-time voice interactive platform operated in China was temporarily removed from the app store at the request of the Office of the Central Cyberspace Affairs Commission and is currently undergoing active rectification. Moreover, the costs of compliance with these regulations may continue to increase as a result of more content being made available by an increasing number of users and third-party partners and developers, which may adversely affect our results of operations. Although we have adopted internal procedures to monitor content uploaded to our website and to remove offending content once we become aware of any potential or alleged violation, we may not be able to identify all the content that may violate relevant laws and regulations or third-party intellectual property rights and even if we manage to identify and remove offending content, we may still be held liable for such third-party content. Users may upload content or images containing content that infringes upon third-party copyrights or other illegal content and we may be subject to claims, including infringement claims or become involved in litigation proceedings due to such content. As a result, our reputation, PRC business and results of operations may be materially and adversely affected.

For clarification, with the sale of YY Live being substantially completed with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities, we believe the majority of our business, especially our global platforms that operated outside China, is not subject to the above regulations.

It may be difficult for overseas regulators to conduct investigation or collect evidence within China.

Shareholder claims or regulatory investigation that are common in the United States generally are difficult to pursue as a matter of law or practicality in China. For example, in China, there are significant legal and other obstacles to providing information needed for regulatory investigations or litigation initiated outside China. Although the authorities in China may establish a regulatory cooperation mechanism with the securities regulatory authorities of another country or region to implement cross-border supervision and administration, such cooperation with the securities regulatory authorities in the Unities States may not be efficient in the absence of mutual and practical cooperation mechanism. Furthermore, according to Article 177 of the PRC Securities Law, or Article 177, which became effective in March 2020, no overseas securities regulator is allowed to directly conduct investigation or evidence collection activities within the territory of the PRC and without the consent by the Chinese securities regulatory authorities and the other competent governmental agencies, no entity or individual may provide documents or materials related to securities business to overseas parties. In addition, the Data Security Law and the Personal Information Protection Law provide that no entity or individual within the territory of the PRC shall provide any foreign judicial body and law enforcement body with any data or any personal information stored within the territory of the PRC without the approval of the competent governmental authority of the PRC. While detailed interpretation of or implementation rules under these laws have yet to be promulgated, the inability for an overseas securities regulator to directly conduct investigation or evidence collection activities within China, and restrictions on the provision of documents, materials, data and personal information by PRC entities and individuals to an overseas securities regulator, foreign judicial body or foreign law enforcement body may further increase difficulties faced by you in protecting your interests.

Uncertainties exist with respect to the Anti-Monopoly Guidelines for Internet Platforms and how it may impact our business operations and financial position in China.

On February 7, 2021, the Anti-monopoly Commission of the State Council officially promulgated the Guidelines to Anti-Monopoly in the Field of Internet Platforms, or the Anti-Monopoly Guidelines for Internet Platforms. Pursuant to an official interpretation from the Anti-monopoly Commission of the State Council, the Anti-Monopoly Guidelines for Internet Platforms mainly covers five aspects, including general provisions, monopoly agreements, abusing market dominance, concentration of undertakings, and abusing of administrative powers eliminating or restricting competition. The Anti-Monopoly Guidelines for Internet Platforms prohibits certain monopolistic acts of internet platforms so as to protect market competition and safeguard interests of users and undertakings participating in internet platform economy, including, without limitation, prohibiting platforms with dominant position from abusing their market dominance (such as discriminating customers in terms of pricing and other transactional conditions using big data and analytics, coercing counterparties into exclusivity arrangements, using technology means to block competitors' interface, favorable positioning in search results of goods displays, using bundle services to sell services or products, compulsory collection of unnecessary user data). In addition, the Anti-Monopoly Guidelines for Internet Platforms also reinforces antitrust merger review for internet platform related transactions to safeguard market competition. As the Anti-Monopoly Guidelines for Internet Platforms was relatively new, we are uncertain to estimate its specific impact on our business, financial condition, result of operations and prospects in China. Considering the majority of our current business is outside of China, we believe we are not in such a market-dominating position in China, but the interpretation and application of such regulations may depend on various factors and we cannot assure you that our business operations comply with such regulations and authorities' requirements in all respects. If any non-compliance is raised by relevant authorities and determined against us, we may be subject to fines and other penalties.

In addition, the PRC anti-monopoly enforcement agencies have in recent years strengthened enforcement under the PRC Anti-monopoly Law, including levying significant fines, with respect to concentration of undertakings and cartel activity, mergers and acquisitions, as well as abusive behavior by companies with market dominance. Moreover, The Anti-Monopoly Guidelines for Internet Platforms aims at specifying some of the circumstances under which an activity of internet platform may be identified as monopolistic act as well as setting out merger controlling filing procedures involving variable interest entities. These constraints could also include forced termination of any agreements or arrangements that are determined by governmental authorities to be in violation of anti-monopoly laws, which may compromise our pursuit of investment and mergers and acquisitions strategy. The strengthened enforcement may have more substantial and significant influences on, among others, mergers and acquisition transactions, business practices and investment, which may under certain circumstances further adversely affect our business strategy, financial conditions and reputation.

Risks Related to Our Corporate Structure

If the PRC government finds that the structure we have adopted for our business operations does not comply with PRC laws and regulations, or if these laws or regulations or interpretations of existing laws or regulations change in the future, we could be subject to severe penalties, including the shutting down of our platforms and our business operations in China.

Foreign ownership of internet-based businesses is subject to significant restrictions under current PRC laws and regulations. The PRC government regulates internet access, the distribution of online information and the conduct of online commerce through strict business licensing requirements and other government regulations. These laws and regulations also limit foreign ownership in PRC companies that provide internet information distribution services. Specifically, foreign ownership in an internet information provider or other value-added telecommunication service providers may not exceed 50%. In addition, according to the Several Opinions on the Introduction of Foreign Investment in the Cultural Industry promulgated by the Ministry of Culture, or the MOC, currently known as the Ministry of Culture and Tourism, the State Administration of Radio, Film and Television, or the SARFT, the General Administration of Press and Publication, or the GAPP, currently known as the State Administration of Press Publication, Radio, Film and Television after combination of SARFT and GAPP, the National Development and Reform Commission and the Ministry of Commerce, or the MOFCOM, in July 2005, foreign investors are prohibited from investing in or operating, among others, any internet cultural operating entities and from engaging in the business of transmitting audio-visual programs through information networks. In addition, according to the 2021 Negative List promulgated by the National Development and Reform Commission and the MOC on December 27, 2021 and effective on January 1, 2022, other than e-commerce, domestic multiparty communication, store and forward, and call center services, the permitted foreign investment in value-added telecommunications service providers must not be more than 50%.

We are an exempted company incorporated in the Cayman Islands. We conduct part of our operations in China primarily through a series of contractual arrangements entered into among our PRC subsidiaries and the respective shareholders of our PRC variable interest entities. As a result of these contractual arrangements, we exert control over the variable interest entities and consolidate each of their operating results in our financial statements under U.S. GAAP. All of the equity (net assets) or deficit (net liabilities) and net income (loss) of the variable interest entities are attributed to us. For a detailed description of these contractual arrangements, see “Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements.” However, as we are a Cayman Islands holding company with no equity ownership in the variable interest entities, investors in our ADSs or the common shares thus are not purchasing equity interest in the variable interest entities but instead are purchasing equity interest in a Cayman Islands holding company. The Foreign Investment Law, which promulgated by the Standing Committee of the National People’s Congress on March 15, 2019 and became effective on January 1, 2020, does not explicitly stipulate the contractual arrangements under the “variable interest equity” structures as a form of foreign investment. Nevertheless, we cannot assure you that there will not be any further changes in the regulatory regime in the future. For more information, please see “—Risks Related to Doing Business in Jurisdictions We Operate—Substantial uncertainties exist with respect to the interpretation and implementation of the Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.” If the PRC government deems that our contractual arrangements with the variable interest entities do not comply with PRC regulatory restrictions on foreign investment in the relevant industries, or if these regulations or the interpretation of existing regulations change or are interpreted differently in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations in China. We may not be able to fully repay the notes and other indebtedness, and our shares may decline significantly in value, if we are unable to assert our contractual control rights over the assets of the variable interest entities. Our holding company in the Cayman Islands, the variable interest entities, and investors of our company face uncertainty about potential future actions by the PRC government that could affect the enforceability of the contractual arrangements with the variable interest entities and, consequently, significantly affect the financial performance of the variable interest entities and our company as a group.

Based on understanding of current PRC laws, rules and regulations of our PRC counsel, Fangda Partners, our current ownership structure for our business operations, the ownership structure of our PRC subsidiaries and the variable interest entities, the contractual arrangements among our PRC subsidiaries, the variable interest entities and their shareholders, as described in this annual report on Form 20-F, are in compliance with existing PRC laws, rules and regulations. However, we were further advised by Fangda Partners that there is substantial uncertainty regarding the interpretation and application of current or future PRC laws and regulations and these laws or regulations or interpretations of these laws or regulations may change in the future. Furthermore, the relevant government authorities have broad discretion in interpreting these laws and regulations. Accordingly, we cannot assure you that PRC government authorities will not ultimately take a view contrary to the opinion of our PRC counsel.

If our ownership structure, contractual arrangements and businesses of our company, our PRC subsidiaries or the variable interest entities are found to be in violation of any existing or future PRC laws or regulations, the relevant governmental authorities would have broad discretion in dealing with such violation, including levying fines, confiscating our income or the income of our PRC subsidiaries or the variable interest entities, revoking or suspending the business licenses or operating licenses of our PRC subsidiaries or the variable interest entities, shutting down our servers or blocking our platforms, discontinuing or placing restrictions or onerous conditions on our operations, requiring us to discontinue our operations in China, requiring us to undergo a costly and disruptive restructuring, restricting or prohibiting our use of proceeds from our initial public offering to finance our business and operations in China, and taking other regulatory or enforcement actions that could be harmful to our business. Any of these actions could cause significant disruption to our business operations in China and severely damage our reputation, which would in turn materially and adversely affect our business, financial condition and results of operations. In addition, if the imposition of any of these penalties causes us to lose the rights to direct the activities of the variable interest entities or our right to receive their economic benefits, we would no longer be able to consolidate such entities.

We rely on contractual arrangements with the variable interest entities and their shareholders for some of our operation in China, which may not be as effective as direct ownership. If the variable interest entities and their shareholders fail to perform their obligations under these contractual arrangements, we may have to resort to litigation or other legal proceedings to enforce our rights, which may be time-consuming, unpredictable, expensive and damaging to our operations and reputation.

Because of PRC restrictions on foreign ownership of internet-based businesses in China, we depend on contractual arrangements with the variable interest entities in which we have no ownership interest to conduct some of our business in China. These contractual arrangements are intended to provide us with effective control over these entities and allow us to obtain economic benefits from them. For additional details on these ownership interests, see "—Risks Related to Our Business and Industry—Our business depends substantially on the continuing efforts of our executive officers and key employees, and our business operations may be severely disrupted if we lose their services" and "Item 4. Information on the Company—A. History and Development of the Company." However, these contractual arrangements may not be as effective in providing control as direct ownership. For example, each of the variable interest entities and their shareholders could breach their contractual arrangements with us by, among other things, failing to operate our business currently operated in China in an acceptable manner or taking other actions that are detrimental to our interests. If we were the controlling shareholder of these variable interest entities with direct ownership, we would be able to exercise our rights as shareholders to effect changes to their board of directors, which in turn could implement changes at the management and operational level. However, under the current contractual arrangements, as a legal matter, if the variable interest entities or their shareholders fail to perform their obligations under these contractual arrangements, we may have to incur substantial costs to enforce such arrangements, and rely on legal remedies under PRC laws, including contract remedies, which may not be sufficient or effective. In particular, the contractual arrangements provide that any dispute arising from these arrangements will be submitted to the China International Economic and Trade Arbitration Commission for arbitration in Beijing, Beijing Arbitration Commission or Guangzhou Arbitration Commission as applicable, the ruling of which will be final and binding. The legal framework and system in China, particularly those relating to arbitration proceedings, is not as developed as other jurisdictions such as the United States. As a result, significant uncertainties relating to the enforcement of legal rights through arbitration, litigation and other legal proceedings remain in China, which could limit our ability to enforce these contractual arrangements and exert effective control over the variable interest entities. Meanwhile, there are very few precedents and little formal guidance as to how contractual arrangements in the context of a variable interest entity should be interpreted or enforced under PRC law. Significant uncertainties remain regarding the ultimate outcome of such arbitration should legal action become necessary. In addition, under PRC law, rulings by arbitrators are final, parties cannot appeal the arbitration results in courts, and if the losing parties fail to carry out the arbitration awards within a prescribed time limit, the prevailing parties may only enforce the arbitration awards in PRC courts through arbitration award recognition proceedings, which would require additional expenses and delay. If we are unable to enforce these contractual arrangements, or if we suffer significant delay or other obstacles in the process of enforcing these contractual arrangements, our business and operations in China could be severely disrupted, which could materially and adversely affect our results of operations and damage our reputation. See "—Risks Related to Doing Business in Jurisdictions We Operate—Uncertainties in the interpretation and enforcement of Chinese laws and regulations could limit the legal protections available to you and us."

Our existing shareholders have substantial influence over our company and their interests may not be aligned with the interests of our other shareholders, which may discourage, delay or prevent a change in control of our company, which could deprive our shareholders of an opportunity to receive a premium for their securities.

As of March 31, 2022, Mr. David Xueling Li, our co-founder, chairman and chief executive officer, and his affiliates, held 78.5% of the total voting power. Mr. David Xueling Li has substantial influence over our business, including decisions regarding mergers, consolidations and the sale of all or substantially all of our assets, election of directors and other significant corporate actions. This concentration of ownership may discourage, delay or prevent a change in control of our company, which could deprive our shareholders of an opportunity to receive a premium for their shares as part of any contemplated sale of our company and may reduce the price of our ADSs. In addition, Mr. Li could violate the terms of his non-compete or employment agreements with us or his legal duties by diverting business opportunities from us, resulting in our loss of corporate opportunities. These actions may take place even if they are opposed by our other shareholders.

Additionally, Mr. Jun Lei, our major shareholder who beneficially owned 8.7% of our outstanding shares as of March 31, 2022, has delegated the voting rights of the shares that he holds in our company to Mr. Li. Mr. Lei is active in making investments in internet companies in China and currently holds direct and indirect interests in Xiaomi and iSpeak, which competes with certain of our lines of business, and other entities which may have businesses that compete with ours. Xiaomi Corporation (HKEX: 01810) is an internet company with smartphones and smart hardware connected by an IoT platform at its core, which has started offering online performance and live broadcasting services recently. iSpeak is owned by Mr. Lei in part through Kingsoft Corporation Limited, which is engaged in the research, development operation and distribution of online games, mobile games, casual game services and internet software. Mr. Lei may, in the future, acquire additional interests in businesses that directly or indirectly compete with some of our lines of business or that are our suppliers or customers. Furthermore, Mr. Lei may pursue acquisitions or make further investments in our industries which may conflict with our interests. For more information regarding the beneficial ownership of our company by our principal shareholders, see “Item 6. Directors, Senior management and Employees—E. Share Ownership.”

The shareholders of our PRC variable interest entities may have potential conflicts of interest with us, and if any such conflicts of interest are not resolved in our favor, our business may be materially and adversely affected.

Certain selected individuals, who are PRC citizens, from our senior management team are nominee shareholders of the variable interest entities in essence. The interests of such nominated individuals as the controlling shareholders of the variable interest entities may differ from the interests of our company as a whole, as what is in the best interests of the variable interest entities may not be in the best interests of our company. Similarly, two individuals from the senior management team of Bigo collectively own all equity interest of each of Chengdu Yunbu Network Technology Co., Ltd., or Chengdu Yunbu, Chengdu Luota Network Technology Co., Ltd., or Chengdu Luota, and Chengdu Jiyue Network Technology Co., Ltd., or Chengdu Jiyue, respectively. We cannot assure you that when conflicts of interest arise, the shareholders of our PRC variable interest entities will act in the best interests of our company or that conflicts of interests will be resolved in our favor. In addition, the shareholders of our PRC variable interest entities may breach or cause our consolidated variable entities and their respective subsidiaries to breach or refuse to renew the existing contractual arrangements with us. Currently, we do not have existing arrangements to address potential conflicts of interest the shareholders of our PRC variable interest entities may encounter in his/her capacity as a shareholder or director of the variable interest entities, on the one hand, and as a beneficial owner or director of our company, on the other hand; provided that we could, at all times, exercise our option under the exclusive option agreement with the shareholders of our PRC variable interest entities to cause them to transfer all of his equity ownership in our consolidated variable interest entities to a PRC entity or individual designated by us, and this new shareholder of our consolidated variable entities could then appoint a new director of our consolidated variable entities to replace the existing directors. In addition, if such conflicts of interest arise, our wholly owned PRC subsidiaries, could also, in the capacity of attorney-in-fact for the shareholders of our PRC variable interest entities as provided under the relevant powers of attorney, directly appoint a new director of our consolidated variable entities to replace the existing directors. However, the legal frameworks of China and the Cayman Islands do not provide guidance on resolving conflicts in the event of a conflict with another corporate governance regime. If we cannot resolve any conflicts of interest or disputes between us and the shareholders and the nominated individuals of our PRC variable interest entities, we would have to rely on legal proceedings, which could result in disruption of our business in China and subject us to substantial uncertainty as to the outcome of any such legal proceedings.

We may lose the ability to use and enjoy assets held by the variable interest entities that are important to the operation of our business if such entities go bankrupt or become subject to a dissolution or liquidation proceeding.

As part of our contractual arrangements with the variable interest entities, such entities hold certain assets, such as patents for the proprietary technologies that are essential to the operations of our platforms and important to the operation of our business. If any one of the variable interest entities goes bankrupt and all or part of its assets become subject to liens or rights of third-party creditors, we may be unable to continue some or all of our business activities, which could materially and adversely affect our business, financial condition and results of operations. If any one of the variable interest entities undergoes a voluntary or involuntary liquidation proceeding, the unrelated third-party creditors may claim rights to some or all of these assets, thereby hindering our ability to operate our business, which could materially and adversely affect our business, financial condition and results of operations.

Our ability to enforce the equity pledge agreements between us and our PRC variable interest entities' shareholders may be subject to limitations based on PRC laws and regulations.

Pursuant to the equity interest pledge agreements between our wholly owned subsidiaries in China, and the shareholders of the variable interest entities, or VIEs, each shareholder of each variable interest entities agrees to pledge its equity interests in the VIE to our subsidiary to secure the relevant VIE's performance of their obligations under the relevant contractual arrangements. The equity interest pledges of shareholders of VIEs under these equity pledge agreements have been registered with the relevant local branch of the SAMR, except that the equity interest pledge by Mr. Wenzhi Cai of his equity interests in Guangzhou AnSiChuang Information Technology Co., Ltd., or Guangzhou AnSiChuang, the equity interest pledge by the shareholder of Beijing Cengcengceng Information Technology Co., Ltd., or Beijing Cengcengceng, of his equity in Beijing Cengcengceng and the equity interest pledge by the shareholders of Shanghai Ruogu Information Technology Co., Ltd. or Shanghai Ruogu, of their equity in Shanghai Ruogu have not been registered. The equity interest pledge agreements with each of the VIEs' shareholders provide that the pledged equity interest shall constitute continuing security for any and all of the indebtedness, obligations and liabilities under all of the principal service agreements and the scope of pledge which are not limited by the amount of the registered capital of that VIE. However, it is possible that a PRC court may take the position that the amount listed on the equity pledge registration forms represents the full amount of the collateral that has been registered and perfected. If this is the case, the obligations that are supposed to be secured in the equity interest pledge agreements in excess of the amount listed on the equity pledge registration forms could be determined by the PRC court as unsecured debt, which takes last priority among creditors.

Our contractual arrangements with the variable interest entities may result in adverse tax consequences to us.

As a result of our corporate structure and the contractual arrangements among our PRC subsidiaries, the variable interest entities and their shareholders, we are effectively subject to PRC turnover tax on revenues generated by our subsidiaries from our contractual arrangements with the variable interest entities. Such tax generally includes the PRC value added tax, or the VAT, along with related surcharges. The applicable turnover tax is determined by the nature of the transaction generating the revenues subject to taxation. The PRC enterprise income tax law requires every enterprise in China to submit its annual enterprise income tax return together with a report on transactions with its affiliates or related parties to the relevant tax authorities. These transactions may be subject to audit or challenge by the PRC tax authorities within ten years after the taxable year during which the transactions are conducted. We may be subject to adverse tax consequences if the PRC tax authorities were to determine that the contracts between us and the variable interest entities were not on an arm's length basis and therefore constitute a favorable transfer pricing arrangements. If this occurs, the PRC tax authorities could request that either of the variable interest entities adjust its taxable income upward for PRC tax purposes. Such a pricing adjustment could adversely affect us by reducing expense deductions recorded by either of the variable interest entities and thereby increasing these entities' tax liabilities, which could subject these entities to late payment fees and other penalties for the underpayment of taxes. Our consolidated net income may be materially and adversely affected if the variable interest entities' tax liabilities increase or if it becomes subject to late payment fees or other penalties.

If the variable interest entities fail to obtain and maintain the requisite licenses and approvals required under the complex regulatory environment for internet-based businesses in China, our business, financial condition and results of operations in China may be adversely affected.

With the sale of YY Live being substantially completed with certain customary matters, including necessary regulatory approvals from government authorities, remaining to be completed in the future, we believe the majority of our business, especially our global platforms that operated outside China, is not subject to the PRC regulations that require us to obtain and maintain certain licenses and approvals through the variable interest entities as we used to be. Yet as we maintain some our audio and video capabilities and functions in China, we will need to obtain additional qualifications, permits, approvals or licenses. In addition, with respect to specific services offered online, we or the service or content providers may be subject to additional separate qualifications, permits, approvals or licenses. We cannot assure you that we or the service or content providers will be granted such qualifications, permits, approvals or licenses in a timely manner or at all. Prior to the receipt of such qualifications, permits, approvals or licenses, we may be deemed as being in violation of relevant laws or regulations and be subject to penalties.

As the internet industry in China is still at a relatively early stage of development, new laws and regulations may be adopted from time to time to address new issues that come to the authorities' attention. In the interpretation and implementation of existing and future laws and regulations governing our business activities, considerable uncertainties still exist. We cannot assure you that we will not be found in violation of any future laws and regulations or any of the laws and regulations currently in effect due to changes in the relevant authorities' interpretation of these laws and regulations. In addition, we may be required to obtain additional license or approvals, and we cannot assure you that we will be able to timely obtain or maintain all the required licenses or approvals or make all the necessary filings in the future. If we fail to obtain or maintain any of the required licenses or approvals or make the necessary filings, we may be subject to various penalties, such as confiscation of the net revenues that were generated through the unlicensed internet activities, the imposition of fines and the discontinuation or restriction of our operations in China. Any such penalties may disrupt our business operations in China and adversely affect our business, financial condition and results of operations.

Implementation of the new labor laws and regulations in China may adversely affect our business and results of operations.

Because we still have a substantial number of employees in China, we are primarily subject to labor laws and regulations in China and any changes to the applicable laws and regulations. Pursuant to the labor contract law that took effect in January 2008 and was amended on July 1, 2013 and its implementation rules that took effect in September 2008, employers are subject to stricter requirements in terms of signing labor contracts, minimum wages, paying remuneration, determining the term of employees' probation and unilaterally terminating labor contracts. Due to lack of detailed interpretative rules and uniform implementation practices and broad discretion of the local competent authorities, it is uncertain as to how the labor contract law and its implementation rules will affect our current employment policies and practices. Our employment policies and practices may violate the labor contract law or its implementation rules, and we may thus be subject to related penalties, fines or legal fees. Compliance with the labor contract law and its implementation rules may increase our operating expenses, in particular our personnel expenses. In the event that we decide to terminate some of our employees' employment or otherwise change our employment or labor practices, the labor contract law and its implementation rules may also limit our ability to effect those changes in a desirable or cost-effective manner, which could adversely affect our business and results of operations. On October 28, 2010, the Standing Committee of the National People's Congress promulgated the PRC Social Insurance Law, or the Social Insurance Law, which became effective on July 1, 2011 and was amended on December 29, 2018. According to the Social Insurance Law, employees must participate in pension insurance, work-related injury insurance, medical insurance, unemployment insurance and maternity insurance and the employers must, together with their employees or separately, pay the social insurance premiums for such employees. On July 20, 2018, General Office of the Communist Party of China and the State Council promulgated the Reform Plan for Collection and Management System of National and Local Taxes, or the Tax Reform Plan, which became effective on the same day. According to the Tax Reform Plan, all social insurance premiums, such as basic pension insurance premium, basic medical insurance premium, unemployment insurance premium, work-related injury insurance premium and maternity insurance premium, shall be collected uniformly by the relevant tax authorities starting from January 1, 2019.

Compliance with the laws or regulations governing virtual currency may cause us to obtain additional approvals or licenses or change our current business model.

The issuance and use of "virtual currency" in China has been regulated since 2007 in response to the growth of the online game industry in China. On January 25, 2007, the Ministry of Public Security, the MOC, the MIIT and the GAPP jointly issued a circular regarding online gambling which has implications for the use of virtual currency. The circular bans the conversion of virtual currency into real currency or property.

We issue virtual currency to users on our platforms currently operated in China for them to purchase various items to be used in channels, including music channels. We are in the process of adjusting the content of our platforms currently operated in China but we cannot assure you that our adjustments will be sufficient to comply with the relevant laws. Moreover, although we believe we do not offer virtual currency transaction services, we cannot assure you that the PRC regulatory authorities will not take a view contrary to ours. In that event, we may be required to cease either our virtual currency issuance activities or such deemed "transaction service" activities and may be subject to certain penalties, including mandatory corrective measures and fines. The occurrence of any of the foregoing could have an adverse effect on our business, financial condition and results of operations in China.

We face risks related to geopolitical events, natural disasters, health epidemics, and other outbreaks, which could significantly disrupt our operations.

Our business could be adversely affected by the effects of epidemics. In recent years, there have been outbreaks of epidemics in China and globally. Our business operations could be disrupted if one of our employees is suspected of having contracted the H1N1 flu, avian flu, Ebola, COVID-19 or another epidemic, since it could require our employees to be quarantined and/or our offices to be disinfected. Our results of operations could be adversely affected to the extent that the outbreak has any negative impact on the global economy in general and the global mobile internet and gaming industries in particular.

We are also vulnerable to natural disasters and other calamities. It is possible that we may be unable to recover certain data in the event of a server failure. We cannot assure you that any backup systems will be adequate to protect us from the effects of fire, floods, typhoons, earthquakes, power loss, telecommunications failures, break-ins, war, riots, terrorist attacks or similar events. Any of the foregoing events may give rise to server interruptions, breakdowns, system failures, technology platform failures or internet failures, which could cause the loss or corruption of data or malfunctions of software or hardware as well as adversely affect our ability to provide services on our platform.

Non-compliance on the part of third parties with which we conduct business could restrict our ability to maintain or increase our number of users or the level of traffic to our platforms.

Our business partners may be subject to regulatory penalties or punishments because of their regulatory compliance failures, which may disrupt our business. Although we conduct a rigid review of legal formalities and certifications before entering into contractual relationship with other businesses such as third-party game developers and landlords, we cannot be certain whether such third party has or will infringe any third parties' legal rights or violate any regulatory requirements. We regularly identify irregularities or non-compliance in the business practices of any parties with whom we pursue existing or future cooperation and we cannot assure you that any of these irregularities will be corrected in a prompt and proper manner. The legal liabilities and regulatory actions on our commercial partners may affect our business activities and reputation and in turn, our results of operations. For example, according to PRC regulations, all lease agreements are required to be registered with the local housing authorities. Currently, certain of our offices in China for daily operations and certain other properties serving as dormitories and canteens in China are on leased premises, and the landlords of some of these properties are still completing the registration of their ownership rights or the registration of our leases with the relevant authorities. Some of our lessors have not provided us with appropriate title certificates, which may adversely affect the validity of the leases if the lessors do not have proper title. We cannot assure you that such certificates or registration will be obtained in a timely manner or at all, and in case of failures, we may be subject to monetary fines, have to relocate our offices and suffer economic losses.

In addition, we allow providers of some online services, such as online education and financial services, to establish channels on our platforms. The online service providers and the producers of content on our platforms may be required to meet specific qualifying standards, evidenced by approvals, permits or certificates, and to comply with various requirements when conducting business. We cannot predict if any non-compliance on the part of such commercial partners may cause potential liabilities to us and in turn disrupt our operations.

Risks Related to Our ADSs

The trading prices of our ADSs are likely to be volatile, which could result in substantial losses to investors.

The daily closing trading prices of our ADSs ranged from US$40.50 to US$147.80 in 2021. The trading prices of our ADSs are likely to be volatile and could fluctuate widely due to factors beyond our control. This may happen because of broad market and industry factors, like the performance and fluctuation in the market prices or the underperformance or deteriorating financial results of other companies in the global online entertainment industry or with business operations located mainly in the same markets as ours. The sale of a significant number of the ADSs, common shares or other equity securities in the public market, or the perception that such sales may occur, could also materially and adversely affect the market price of our ADSs. The securities of some of these companies have experienced significant volatility since their initial public offerings, including, in some cases, substantial price declines in the trading prices of their securities. With the sale of YY Live being substantially completed with certain customary matters, including necessary regulatory approvals from government authorities, remaining to be completed in the future, and the majority of our business operations outside China, we do not believe that we are comparable to these Chinese companies. But our previous history of conducting business in China (such as YY Live, our discontinued PRC business) might cause investors to perceive us as a Chinese company, and the trading performances of certain Chinese companies' securities after their offerings, including companies in internet and social networking businesses, may affect the attitudes of investors toward Chinese companies listed in the United States, which consequently may impact the trading performance of our ADSs, regardless of our actual operating performance. In addition, any negative news or perceptions about inadequate corporate governance practices or fraudulent accounting or other practices at other Chinese companies may also negatively affect the attitudes of investors towards Chinese companies in general, including us, regardless of whether we have engaged in such practices. Furthermore, the stock market in general has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of companies like us. These broad market and industry fluctuations may adversely affect the market price of our ADSs.

In addition to market and industry factors, the price and trading volume for our ADSs may be highly volatile due to specific factors, including the following:

- variations in our net revenues, earnings and cash flow;
- announcements of new investments, acquisitions, strategic partnerships, or joint ventures;
- announcements of new services and expansions by us or our competitors;
- changes in financial estimates by securities analysts;
- downgrades, suspension or termination of coverage by industry or securities analysts that publish research or reports on us;
- changes in the number of our registered or active users;
- fluctuations in the number of paying users or other operating metrics;
- failure on our part to realize monetization opportunities as expected;
- additions or departures of key personnel;
- dilution of the ownership interests of our ADS holders due to conversions of our convertible senior notes due 2025 or 2026, or from the unwinding of capped call transactions in connection with our convertible senior notes due 2025 or 2026;
- release of lock-up or other transfer restrictions on our outstanding equity securities or sales of additional equity securities;
- detrimental negative publicity about us, our competitors or our industry;
- potential litigation or regulatory proceedings or changes; and

- volatility in the stock market.

Any of these factors may result in large and sudden changes in the volume and price at which our ADSs will trade.

Techniques employed by short sellers may drive down the market price of our listed securities.

Short selling is the practice of selling securities that a seller does not own but rather has borrowed from a third party with the intention of buying identical securities back at a later date to return to the lender. Short sellers hope to profit from a decline in the value of the securities between the sale of the borrowed securities and the purchase of the replacement shares, as short sellers expect to pay less in that purchase than they received in the sale. As it is in short sellers' interest for the price of the security to decline, many short sellers publish, or arrange for the publication of, negative opinions and allegations regarding the relevant issuer and its business prospects in order to create negative market momentum and generate profits for themselves after selling a security short. These short attacks have, in the past, led to selling of shares in the market.

Much of the scrutiny and negative publicity on the target companies has centered on allegations of lack of effective internal control over financial reporting resulting in financial and accounting irregularities and mistakes, inadequate corporate governance policies or a lack of adherence thereto and, in many cases, allegations of fraud. As a result, many of these companies are now conducting internal and external investigations into the allegations and, in the interim, are subject to shareholder lawsuits and/or SEC enforcement actions. Even though our major operations are outside of China after the sale of YY Live, which was substantially completed though certain customary matters remaining to be completed in the future, we were and may continue to be subject to such risks.

We are currently, and may in the future be, the subject of unfavorable allegations made by short sellers. On November 18, 2020, Muddy Waters Capital LLC, an entity unrelated to us, issued the Muddy Water short seller report (the "Report") containing certain allegations against us. Our audit committee has conducted an independent review of the allegations raised in the Report related to our YY Live business, with the assistance of independent counsel, working with a team of experienced forensic auditors and data analytics experts. Our announcement dated February 8, 2021 disclosed the conclusion of the independent review, which concluded that the allegations raised and conclusions reached in the Report about our YY Live business were not substantiated. On March 26, 2021, our audit committee also concluded its work as to the handful of claims in the Report unrelated to the YY Live business (concerning Bigo) and likewise found the short seller allegations unsubstantiated. Any such allegations may be followed by periods of instability in the market price of our common shares and ADSs and negative publicity. If and when we become the subject of any unfavorable allegations, whether such allegations are proven to be true or untrue, we may have to utilize a significant portion of our resources to investigate such allegations and/or defend ourselves, including in connection with class actions or regulatory enforcement actions derivative of such allegations. While we would strongly defend against any such short seller attacks, we may be constrained in the manner in which we can proceed against the relevant short sellers by principles of freedom of speech, applicable federal or state law or issues of commercial confidentiality. Such a situation could be costly and time-consuming and could divert management's attention from the day-to-day operations of our Company. Even if such allegations are ultimately proven to be groundless, allegations against us could severely impact the market price of our securities and our business operations.

We may be named as a defendant in putative shareholder class action lawsuits and may be subject to the SEC or third-party investigations which could have a material adverse impact on our business, financial condition, results of operation, cash flows and reputation.

We were defending against a putative shareholder class action lawsuit described in "Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal Proceedings," including any appeals of such lawsuit. On March 9, 2022, the court granted the defendants' motion to dismiss and dismissed the operative complaint in its entirety with prejudice. On April 8, 2022, the co-lead plaintiffs filed a notice of appeal. We are currently unable to estimate the possible loss or possible range of loss, if any, associated with the final resolution of this lawsuit, and there might be other class actions or regulatory enforcement actions in connection with such allegations. Any adverse outcome of this case, including any plaintiff's appeal of the judgment in this case, could have a material adverse effect on our business, financial condition, results of operation, cash flows and reputation. In addition, there can be no assurance that our insurance carriers will cover all or part of the defense costs, or any liabilities that may arise from these matters. Even if the allegations against us may ultimately be proven to be groundless, we may have to utilize a significant portion of our cash resources and divert management's attention from the day-to-day operations of our company, all of which could harm our business. We also may be subject to claims for indemnification related to these matters, and we cannot predict the impact that indemnification claims may have on our business or financial results. In addition, in response to the Report, we may be subject to further due diligence and investigations conducted by competent third-party advisors or regulatory authorities. We cannot predict or provide any assurance as to the timing, outcome or consequences of such reviews and investigations, and we have incurred and may continue to incur significant expenses related to legal, accounting, and other professional services in connection with matters relating to or arising from the such reviews and investigations.

We believe that we were a passive foreign investment company, or PFIC, for United States federal income tax purposes for the taxable year ended December 31, 2021, which could subject United States holders of our ADSs or Class A common shares to significant adverse United States income tax consequences.

We will be classified as a "passive foreign investment company," or "PFIC" for United States federal income tax purposes for any taxable year, if either (a) 75% or more of our gross income for such year consists of certain types of "passive" income or (b) 50% or more of the value of our assets (generally determined on the basis of a quarterly average) during such year produce or are held for the production of passive income. Although the law in this regard is unclear, we treat the variable interest entities as being owned by us for United States federal income tax purposes, not only because we exercise effective control over the operation of such entities but also because we are entitled to substantially all of their economic benefits, and, as a result, we consolidate their operating results in our consolidated financial statements.

Based on the market price of our ADSs and the nature and composition of our assets (in particular the retention of substantial amounts of cash, deposits and investments), we believe that we were a PFIC for United States federal income tax purposes for the taxable year ended December 31, 2021, and we will likely be a PFIC for our current taxable year unless the market price of our ADSs increases and/or we invest a substantial amount of the cash and other passive assets we hold in assets that produce or are held for the production of active income.

If we are classified as a PFIC in any taxable year, a U.S. holder (as defined in "Item 10. Additional Information—E. Taxation—United States Federal Income Tax Considerations") will generally be subject to reporting requirements and may incur significantly increased United States income tax on gain recognized on the sale or other disposition of the ADSs or Class A common shares and on the receipt of distributions on the ADSs or Class A common shares to the extent such gain or distribution is treated as an "excess distribution" under the United States federal income tax rules. Further, if we are classified as a PFIC for any year during which a U.S. holder holds our ADSs or Class A common shares, we generally will continue to be treated as a PFIC for all succeeding years during which such U.S. holder holds our ADSs or Class A common shares. Alternatively, U.S. holders of PFIC shares can sometimes avoid the rules described above by making certain elections, including a "mark-to-market" election or electing to treat a PFIC as a "qualified electing fund." However, U.S. holders will not be able to make an election to treat us as a "qualified electing fund" because, even if we were to be or become a PFIC, we do not intend to comply with the requirements necessary to permit U.S. holders to make such election. Each U.S. holder is urged to consult its tax advisor concerning the United States federal income tax considerations relating to the ownership and disposition of our ADSs or Class A common shares if we are treated as a PFIC for our current taxable year or any future taxable year (including the possibility of making a "mark-to-market" election and the unavailability of an election to treat us as a qualified electing fund). For more information see "Item 10. Additional Information—E. Taxation— United States Federal Income Tax Considerations—Passive Foreign Investment Company Rules."

Our dual class common share structure with different voting rights will limit your ability to influence corporate matters and could discourage others from pursuing any change of control transactions that holders of our Class A common shares and ADSs may view as beneficial.

Our common shares are divided into Class A common shares and Class B common shares. Holders of Class A common shares are entitled to one vote per share, while holders of Class B common shares are entitled to ten votes per share, voting together as one class on all matters requiring a shareholders' vote and which are voted upon by way of a poll. Each Class B common share is convertible into one Class A common share at any time by the holder thereof. Class A common shares are not convertible into Class B common shares under any circumstances. Upon any sale, pledge, transfer or assignment or disposition of Class B common shares by a holder thereof to any person or entity that is not an affiliate of such holder, such Class B common shares will be automatically and immediately converted into an equal number of Class A common shares. In addition, if at any time, Messrs. David Xueling Li, Jun Lei and their affiliates collectively own less than 5% of the total number of the issued and outstanding Class B common shares, each issued and outstanding Class B common share will be automatically and immediately converted into one Class A common share, and we will not issue any Class B common shares thereafter. Furthermore, if at any time more than 50% of the ultimate beneficial ownership of any holder of Class B common shares (other than our founders or our founders' affiliates) changes, each such Class B common share will be automatically and immediately converted into one Class A common share.

Due to the disparate voting powers attached to these two classes of common shares, as of March 31, 2022, Mr. David Xueling Li and his respective affiliates, held 78.5% of the total voting power of our company and have considerable influence over all matters requiring a shareholders' vote, including election of directors and significant corporate transactions, such as a merger or sale of our company or our assets. This concentrated control will limit your ability to influence corporate matters and could discourage others from pursuing any potential merger, takeover or other change of control transactions that holders of Class A common shares and ADSs may view as beneficial.

Our reputation and the trading price of our ADSs may be negatively affected by adverse publicity or detrimental conduct against us.

Adverse publicity concerning the alleged fraudulence on our reported user metrics and authenticity on our revenues and cash balances could harm our reputation and cause the trading price of our ADSs to decline and fluctuate significantly. For example, after the Report containing various allegations against us was released on November 18, 2020, the trading price of our ADSs declined sharply. The negative publicity and the resulting decline of the trading price of our ADSs also led to the filing of a shareholder class action lawsuits against us and certain of our directors and officers.

Although we have publicly refuted the erroneous and misleading statements regarding us in the Report, we may still continue to be the target of adverse publicity and detrimental conduct against us, including complaints, anonymous or otherwise, to regulatory agencies regarding our operations, accounting, revenues and regulatory compliance. Additionally, allegations against us may be posted on the Internet by any person or entity which identifies itself or on an anonymous basis. We may be subject to government or regulatory investigation or inquiries, or shareholder lawsuits, as a result of such third-party conduct and may be required to incur significant time and substantial costs to defend ourselves. There is no assurance that we will be able to conclusively refute each of the allegations in connection with the Report within a reasonable period of time or at all. Our reputation may also be negatively affected as a result of the public dissemination of allegations or malicious statements about us, which in turn may materially and adversely affect the trading price of our ADSs.

If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our ADSs, the market price for our ADSs and trading volume could decline.

The trading market for our ADSs will be influenced by research or reports that industry or securities analysts publish about our business. If one or more analysts who cover us downgrade our ADSs, the market price for our ADSs would likely decline. If one or more of these analysts cease to cover us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which, in turn, could cause the market price or trading volume for our ADSs to decline.

Provisions of our convertible senior notes could discourage an acquisition of us by a third party.

In June, 2019, we completed the offering of US$500 million in aggregate principal amount of convertible senior notes due 2025 and US$500 million in aggregate principal amount of convertible senior notes due 2026. Certain provisions of our convertible senior notes could make it more difficult or more expensive for a third party to acquire us. The indentures for the convertible senior notes define a "fundamental change" to include, among other things and subject to certain qualifications specified therein: (i) any person or group becoming a direct or indirect beneficial owner of our company's common share capital (including common share capital held in the form of ADSs) representing more than 50% of the voting power of our common share capital, or Lei Jun, Top Brand Holdings Limited, David Xueling Li and YYME Limited and their affiliates collectively becoming the direct or indirect beneficial owner of Class A common shares representing more than 50% of the number of outstanding Class A common shares; (ii) any recapitalization, reclassification or change of our Class A common shares or ADSs as a result of which these securities would be converted into, or exchanged for, stock, other securities, other property or assets or any share exchange, consolidation or merger of our company pursuant to which our Class A common shares or ADSs will be converted into cash, securities or other property or any sale, lease or other transfer in one transaction or a series of transaction of all or substantially all of our consolidated assets, taken as a whole, to any person other than one of our subsidiaries; (iii) the approval of any plan or proposal for the liquidation or dissolution of our company by our shareholders; (iv) our ADSs ceasing to be listed or quoted on any of The New York Stock Exchange, The NASDAQ Global Select Market or The NASDAQ Global Market (or any of their respective successors); or (v) any change in or amendment to the laws, regulations and rules in the PRC or the official interpretation or official application thereof that prohibits us from operating substantially all of our business operations and prevents us from continuing to derive substantially all of the economic benefits from our business operations. Upon the occurrence of a fundamental change, holders of these notes will have the right, at their option, to require us to repurchase all of their notes or any portion of the principal amount of such notes in principal amounts of US$1,000 or integral multiples thereof. In the event of a fundamental change, we may also be required to issue additional ADSs upon conversion of our convertible notes.

The sale or availability for sale, or perceived sale or availability for sale, of substantial amounts of our ADSs could adversely affect their market price.

Sales of substantial amounts of our ADSs in the public market, or the perception that these sales could occur, could adversely affect the market price of our ADSs and could materially impair our ability to raise capital through equity offerings in the future. Our ADSs are freely tradable by persons other than our affiliates without restriction or further registration under the Securities Act of 1933, as amended, or the Securities Act, and shares held by our existing shareholders may also be sold in the public market in the future subject to the restrictions in Rule 144 and Rule 701 under the Securities Act. In addition, common shares subject to our outstanding share-based awards, including options, restricted shares and restricted share units, are eligible for sale in the public market to the extent permitted by the provisions of various vesting agreements, Rules 144 and 701 under the Securities Act. We may also issue additional options in the future which may be exercised for additional common shares and additional restricted shares and restricted share units which may vest. As of March 31, 2022, we had 1,091,392,968 Class A common shares (excluding 226,447,496 outstanding restricted shares and treasury Class A common shares held by entities controlled by us) and 326,509,555 Class B common shares outstanding. We cannot predict what effect, if any, market sales of securities held by our significant shareholders or any other shareholder or the availability of these securities for future sale will have on the market price of our ADSs.

Our articles of association contain anti-takeover provisions that could have a material adverse effect on the rights of holders of our common shares and ADSs.

Our articles of association contain provisions to limit the ability of others to acquire control of our company or cause us to engage in change-of-control transactions. These provisions could have the effect of depriving our shareholders of an opportunity to sell their shares at a premium over prevailing market prices by discouraging third parties from seeking to obtain control of our company in a tender offer or similar transaction. For example, our board of directors has the authority, without further action by our shareholders, to issue preferred shares in one or more series and to fix their designations, powers, preferences, privileges, and relative participating, optional or special rights and the qualifications, limitations or restrictions, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights associated with our common shares, in the form of ADSs or otherwise. Preferred shares could be issued quickly with terms calculated to delay or prevent a change in control of our company or make removal of management more difficult. If our board of directors decides to issue preferred shares, the price of our ADSs may fall and the voting and other rights of the holders of our common shares and ADSs may be materially and adversely affected.

Our currently effective memorandum and articles of association provide that the United States District Court for the Southern District of New York (or, if the United States District Court for the Southern District of New York lacks subject matter jurisdiction over a particular dispute, the state courts in New York County, New York) is the exclusive judicial forum within the U.S. for the resolution of any complaint asserting a cause of action arising out of or relating in any way to the federal securities laws of the United States, which could limit the ability of holders of our Class A common shares, the ADSs or other securities to obtain a favorable judicial forum for disputes with us, our directors and officers, the depositary, and potentially others.

Our currently effective memorandum and articles of association provide that the United States District Court for the Southern District of New York (or, if the United States District Court for the Southern District of New York lacks subject matter jurisdiction over a particular dispute, the state courts in New York County, New York) is the exclusive forum within the United States for the resolution of any complaint asserting a cause of action arising out of or relating in any way to the federal securities laws of the United States, regardless of whether such legal suit, action, or proceeding also involves parties other than our company. The enforceability of similar federal court choice of forum provisions in other companies' organizational documents has been challenged in legal proceedings in the United States, and it is possible that a court could find this type of provision to be inapplicable or unenforceable. If a court were to find the federal choice of forum provision contained in our currently effective memorandum and articles of association to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions. If upheld, the forum selection clause in our currently effective memorandum and articles of association may limit a security-holder's ability to bring a claim against us, our directors and officers, the depositary, and potentially others in his or her preferred judicial forum, and this limitation may discourage such lawsuits. Holders of our shares or the ADSs will not be deemed to have waived our compliance with the federal securities laws and the regulations promulgated thereunder pursuant to the exclusive forum provision in the currently effective memorandum and articles of association.

You may face difficulties in protecting your interests, and your ability to protect your rights through U.S. courts may be limited, because we are incorporated under Cayman Islands law.

We are an exempted company incorporated under the laws of the Cayman Islands with limited liability. Our corporate affairs are governed by our amended and restated memorandum and articles of association, the Companies Act (As Revised) of the Cayman Islands and the common law of the Cayman Islands. The rights of shareholders to take action against the directors, actions by minority shareholders and the fiduciary responsibilities of our directors to us under Cayman Islands law are to a large extent governed by the common law of the Cayman Islands. The common law of the Cayman Islands is derived in part from comparatively limited judicial precedent in the Cayman Islands as well as from the common law of England, the decisions of whose courts are of persuasive authority, but are not binding, on a court in the Cayman Islands. The rights of our shareholders and the fiduciary responsibilities of our directors under Cayman Islands law are not as clearly established as they would be under statutes or judicial precedent in some jurisdictions in the United States. In particular, the Cayman Islands has a less developed body of securities laws than the United States. Some U.S. states, such as Delaware, have more fully developed and judicially interpreted bodies of corporate law than the Cayman Islands. In addition, shareholders of a Cayman Islands company may not have standing to initiate a shareholder derivative action in a federal court of the United States.

Unlike many jurisdictions in the United States, Cayman Islands law does not generally provide for shareholder appraisal rights on an approved arrangement and reconstruction of a company. This may make it more difficult for you to assess the value of any consideration you may receive in a merger or consolidation or to require that the offeror gives you additional consideration if you believe the consideration offered is insufficient. Moreover, holders of our ADSs are not entitled to appraisal rights under Cayman Islands law. ADS holders that wish to exercise their appraisal or dissentient rights must convert their ADSs into our Class A common shares by surrendering their ADSs to the depositary and paying the ADS depositary fee.

Shareholders of Cayman Islands exempted companies like us have no general rights under Cayman Islands law to inspect corporate records (except our memorandum and articles of association, special resolutions passed by our shareholders, and our register of mortgages and charges) or to obtain copies of lists of shareholders of these companies. Our directors have discretion under our existing articles of association to determine whether or not, and under what conditions, our corporate records may be inspected by our shareholders, but are not obliged to make them available to our shareholders. This may make it more difficult for you to obtain the information needed to establish any facts necessary for a shareholder motion or to solicit proxies from other shareholders in connection with a proxy contest.

As a result of all of the above, public shareholders may have more difficulty in protecting their interests in the face of actions taken by management, members of the board of directors or controlling shareholders than they would as public shareholders of a company incorporated in the United States.

Judgments obtained against us by our shareholders may not be enforceable in our home jurisdiction.

We are a Cayman Islands exempted company and a majority of our assets are located outside of the United States. In addition, a significant majority of our current directors and officers are nationals and residents of countries other than the United States and most of their assets are located outside the United States. As a result, it may be difficult or impossible for you to bring an action against us or against these individuals in the United States in the event that you believe that your rights have been infringed under the United States federal securities laws or otherwise. Even if you are successful in bringing an action of this kind, the laws of the Cayman Islands and of China may render you unable to enforce a judgment against our assets or the assets of our directors and officers.

There are uncertainties as to whether Cayman Islands courts would:

- recognize or enforce against us or our directors or officers judgments of courts of the United States based on certain civil liability provisions of U.S. securities laws; and

- impose liabilities against us or our directors or officers, in original actions brought in the Cayman Islands, based on certain civil liability provisions of U.S. securities laws that are penal in nature. There is no statutory recognition in the Cayman Islands of judgments obtained in the United States, although the courts of the Cayman Islands will generally recognize and enforce a foreign money judgment of a foreign court of competent jurisdiction without reexamination of the merits of the underlying disputes provided that such judgment (i) imposes on the judgment debtor a liability to pay a liquidated sum for which the judgment has been given; (ii) is final; (iii) is not in respect of taxes, a fine or penalty; and (iv) was not obtained in a manner and is not of a kind the enforcement of which is contrary to natural justice or the public policy of the Cayman Islands.

We are a foreign private issuer within the meaning of the rules under the Exchange Act, and as such we are exempt from certain provisions applicable to United States domestic public companies.

Because we qualify as a foreign private issuer under the Exchange Act, we are exempt from certain provisions of the securities rules and regulations in the United States that are applicable to U.S. domestic issuers, including:

- the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q or current reports on Form 8-K;

- the sections of the Exchange Act regulating the solicitation of proxies, consents, or authorizations in respect of a security registered under the Exchange Act;

- the sections of the Exchange Act requiring insiders to file public reports of their share ownership and trading activities and liability for insiders who profit from trades made in a short period of time;

- the selective disclosure rules by issuers of material nonpublic information under Regulation FD; and

- certain audit committee independence requirements in Rule 10A-3 of the Exchange Act.

We are required to file an annual report on Form 20-F within four months of the end of each fiscal year. In addition, we publish our results on a quarterly basis as press releases, distributed pursuant to the rules and regulations of the Nasdaq Global Select Market. Press releases relating to financial results and material events are also be furnished to the SEC on Form 6-K. However, the information we are required to file with or furnish to the SEC are less extensive and less timely as compared to that required to be filed with the SEC by United States domestic issuers. As a Cayman Islands company listed on the Nasdaq Global Select Market, we are subject to the Nasdaq Global Select Market corporate governance requirements. However, the Nasdaq Global Select Market permit a foreign private issuer like us to follow certain corporate governance practices of its home country. Certain corporate governance practices in the Cayman Islands, which is our home country, may differ significantly from the Nasdaq Global Select Market corporate governance requirements.

We relied on the exemption available to foreign private issuers to the requirement that each member of the compensation committee and the corporate governance and nominating committee be an independent director. Currently, Mr. David Xueling Li and Mr. Qin Liu, who serves on our compensation committee and corporate governance and nominating committee, respectively, are not independent directors. We also relied on the exemption available to foreign private issuers to the requirement that shareholder approval should be obtained in certain circumstances prior to an issuance of securities in connection with the acquisition of the stock or assets of another company, and the requirement that shareholder approval should be obtained prior to the issuance of securities when a stock option or purchase plan is to be established or materially amended or other equity compensation arrangement made or materially amended, pursuant to which stock may be acquired by officers, directors, employees, or consultants. We relied on home country practice exemption and did not convene a shareholder meeting to approve the 2019 Arrangement and the Amended and Restated 2011 Share Incentive Plan. We also relied on home country practice exemption and did not solicit proxies or provide proxy statements for all meetings of shareholders and provide copies of proxy solicitation to Nasdaq. See “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Share Incentive Plans” for more information. If we continue to rely on the above and other exemptions available to foreign private issuers in the future, our shareholders may be afforded less protection than they otherwise would under the Nasdaq Global Select Market corporate governance requirements applicable to U.S. domestic issuers. As a result, you may not be afforded the same protections or information, which would be made available to you, were you investing in a United States domestic issuer.

The voting rights of holders of ADSs are limited by the terms of the deposit agreement, and you may not be able to exercise your right to direct how the Class A common shares which are represented by your ADSs are voted.

Holders of ADSs do not have the same rights as our registered shareholders. As a holder of our ADSs, you do not have any direct right to attend general meetings of our shareholders or to cast any votes at such meetings. You are only able to exercise the voting rights which are carried by the underlying Class A common shares represented by your ADSs indirectly by giving voting instructions to the depositary in accordance with the provisions of the deposit agreement. Under the deposit agreement, you may vote only by giving voting instructions to the depositary. Upon receipt of your voting instructions, the depositary will vote the underlying Class A common shares represented by your ADSs in accordance with your instructions. You are not able to directly exercise your right to vote with respect to the underlying Class A common shares represented by your ADSs unless you withdraw the shares from the depositary and become the registered holder of such shares prior to the record date for the general meeting. Under our memorandum and articles of association, the minimum notice period required for convening a general meeting is at least ten clear days. When a general meeting is convened, you may not receive sufficient advance notice of the meeting to withdraw the underlying Class A common shares underlying represented by your ADSs and become the registered holder of such shares to allow you to attend the general meeting and to vote directly with respect to any specific matter or resolution to be considered and voted upon at the general meeting. In addition, under our articles of association, our directors may close our register of members (subject to compliance with Nasdaq Global Select Market rules) or, for the purposes of determining those shareholders who are entitled to attend and vote at any general meeting, fix in advance a record date for such meeting, and such closure of our register of members or the setting of such a record date may prevent you from withdrawing the Class A common shares underlying your ADSs and becoming the registered holder of such shares prior to the record date, so that you would not be able to attend the general meeting or to vote directly. If we ask for your instructions, the depositary will notify you of the upcoming vote and will arrange to deliver our voting materials to you. We cannot assure you that you will receive the voting materials in time to ensure that you can instruct the depositary to vote the underlying Class A common shares represented by your ADSs. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for their manner of carrying out your voting instructions. This means that you may not be able to exercise your right to direct how the shares underlying your ADSs are to be voted and you may have no legal remedy if the underlying Class A common shares underlying represented by your ADSs are not voted as you requested. The depositary for our ADSs will give us a discretionary proxy to vote our Class A common shares represented by your ADSs if you do not vote at shareholders’ meetings, except in limited circumstances, which could adversely affect your interests.

Under the deposit agreement for the ADSs, if you do not vote, the depositary will give us a discretionary proxy to vote our Class A common shares represented by your ADSs at shareholders’ meetings unless:

- we have failed to timely provide the depositary with notice of meeting and related voting materials;
- we have instructed the depositary that we do not wish a discretionary proxy to be given;
- we have informed the depositary that there is substantial opposition as to a matter to be voted on at the meeting;
- a matter to be voted on at the meeting would have a material adverse impact on shareholders; or

- the voting at the meeting is to be made on a show of hands.

The effect of this discretionary proxy is that if you do not vote at shareholders' meetings, you cannot prevent our Class A common shares represented by your ADSs from being voted, except under the circumstances described above. This may make it more difficult for shareholders to influence the management of our company. Holders of our common shares are not subject to this discretionary proxy.

You may not receive dividends or other distributions on our common shares and you may not receive any value for them, if it is illegal or impractical to make them available to you.

The depositary of our ADSs has agreed to pay to you the cash dividends or other distributions it or the custodian receives on Class A common shares or other deposited securities underlying our ADSs, after deducting its fees and expenses. You will receive these distributions in proportion to the number of Class A common shares your ADSs represent. However, the depositary is not responsible if it decides that it is unlawful or impractical to make a distribution available to any holders of ADSs. For example, it would be unlawful to make a distribution to a holder of ADSs if it consists of securities that require registration under the Securities Act but that are not properly registered or distributed under an applicable exemption from registration. The depositary may also determine that it is not feasible to distribute certain property through the mail. Additionally, the value of certain distributions may be less than the cost of mailing them. In these cases, the depositary may determine not to distribute such property. We have no obligation to register under U.S. securities laws any ADSs, common shares, rights or other securities received through such distributions. We also have no obligation to take any other action to permit the distribution of ADSs, common shares, rights or anything else to holders of ADSs. This means that you may not receive distributions we make on our common shares or any value for them if it is illegal or impractical for us to make them available to you. These restrictions may cause a material decline in the value of our ADSs.

You may be subject to limitations on transfer of your ADSs.

Your ADSs are transferable on the books of the depositary. However, the depositary may close its books at any time or from time to time when it deems expedient in connection with the performance of its duties. The depositary may close its books from time to time for a number of reasons, including in connection with corporate events such as a rights offering, during which time the depositary needs to maintain an exact number of ADS holders on its books for a specified period. The depositary may also close its books in emergencies, and on weekends and public holidays. The depositary may refuse to deliver, transfer or register transfers of our ADSs generally when our share register or the books of the depositary are closed, or at any time if we or the depositary thinks that it is advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason in accordance with the terms of the deposit agreement. As a result, you may be unable to transfer your ADSs when you wish to.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

We commenced operations in April 2005 with the establishment of Guangzhou Huaduo in China. In July 2011, we established an exempted company with limited liability in the Cayman Islands, YY Inc., as our holding company. Effective December 20, 2019, we changed our corporate name from "YY Inc." to "JOYY Inc." We began trading under the new corporate name on December 30, 2019. Historically, we primarily conducted the majority of our operations in China from the inception of our business operation to 2018. We have substantially expanded our operations outside China since 2019, after we completed the acquisition of Bigo in March 2019.

Currently, we mainly operate our global business through the following significant subsidiaries:

- Bigo Technology Pte. Ltd.;
- Likeme Pte. Ltd.;
- PageBites, Inc.;
- Guangzhou BaiGuoYuan Information Technology Co., Ltd.; and

- Guangzhou Huanju Shidai Information Technology Co., Ltd.

We also conduct part of our business in China primarily through the following significant variable interest entities and some of their subsidiaries:

- Guangzhou Huaduo Network Technology Co., Ltd.; and
- Guangzhou BaiGuoYuan Network Technology Co., Ltd.

YY Inc. completed an initial public offering of 7,800,000 ADSs, representing 156,000,000 Class A common shares, in November 2012. On November 21, 2012, our ADSs were listed on The Nasdaq Stock Market under the symbol "YY." In December 2012, in connection with the initial public offering, we also completed the over-allotment offering of an additional 1,170,000 ADSs, representing 23,400,000 Class A common shares. On August 21, 2017, we completed our registered follow-on public offering and over-allotment to the underwriters. We issued and sold a total of 6,612,500 ADSs in these transactions, representing 132,250,000 Class A common shares. We received the net proceeds of US$442.2 million, after deducting commissions and offering expenses.In 2017, we established HUYA Inc., Huya Limited, a wholly owned subsidiary of HUYA Inc. in Hong Kong and Guangzhou Huya Technology Co., Ltd., or Huya Technology, wholly-owned by Huya Limited. In July 2017, Huya Technology, Guangzhou Huya and its shareholders, Guangzhou Huaduo and Guangzhou Qinlv, entered into a series of VIE agreements, through which Huya Technology exercises effective control over the operations of Guangzhou Huya. Guangzhou Huya has obtained the licenses to provide internet-related service in the PRC. On March 8, 2018, we and HUYA Inc., through our respective PRC affiliated entities, entered into a non-compete agreement. Pursuant to this non-compete agreement, we agree not to compete with HUYA Inc. in certain areas of its core business, for a term of four years from the date of this non-compete agreement.

In July 2017, HUYA Inc. issued series A shares to a group of investors for an aggregate amount of US$75 million. In March 2018, HUYA Inc. issued 64,488,235 shares of Series B-2 redeemable convertible preferred shares at a price of US$7.16 per share for a cash consideration of US$461.6 million to Linen Investment Limited, a wholly owned subsidiary of Tencent Holdings Limited. Pursuant to the agreements entered into in this series B-2 financing transaction, Tencent has a right, exercisable between March 8, 2020 and March 8, 2021, to purchase at the then fair market price additional shares to reach 50.10% of the voting powers in HUYA Inc. As part of the Series B-2 financing transaction, Tencent and HUYA Inc., through their respective PRC affiliated entities, entered into a business cooperation agreement, which became effective on March 8, 2018. Pursuant to this business cooperation agreement, the parties agreed to establish strategic cooperation in various aspects regarding game live streaming business and other game related business. In May 2018, HUYA Inc. successfully completed its initial public offering of 17,250,000 ADSs at a price of US$12.0 per ADS, including 2,250,000 ADSs offered pursuant to the underwriters' full exercise of their overallotment options. In April 2019, HUYA Inc. successfully completed a follow-on public offering, issuing 13,600,000 ADSs (or 15,640,000 ADSs if the underwriters exercise their option to purchase additional ADSs in full) at a price of US$24.00 per ADS. Each HUYA Inc. ADS represents one Class A ordinary share of HUYA Inc. On April 3, 2020, we transferred 16,523,819 Class B ordinary shares of HUYA Inc. to Linen Investment Limited, a wholly-owned subsidiary of Tencent for an aggregate purchase price of approximately US$262.6 million in cash, pursuant to Tencent's exercise of its option to purchase additional shares of Huya from us. The purchase price was determined based on the average closing prices of Huya's American depositary shares in the last 20 trading days prior to the receipt of Tencent's written exercise notice by us and Huya in accordance with Huya's second amended and restated shareholders agreement dated March 8, 2018. As a result of the closing of the share transfer, Tencent increased its voting power in Huya to 50.1% on a fully-diluted basis, or 50.9% calculated based on the total issued and outstanding shares of Huya, and will consolidate financial statements of Huya. Starting from April 3, 2020, we no longer consolidate the operating results of Huya.

In June 2018, we invested US$272 million in the Series D round of financing of Bigo as the lead investor. We were then an existing shareholder of Bigo and had become its largest shareholder after the Series D financing.

In March 2019, we completed the acquisition of the remaining 68.3% of equity interest in Bigo from the other shareholders of Bigo, including Mr. David Xueling Li, our chairman of the board of directors and chief executive officer. We paid US$343.1 million in cash to the selling shareholders of Bigo, and resulted in issuance of 38,326,579 Class B common shares to Mr. David Xueling Li and 305,127,046 outstanding Class A common shares to Mr. David Xueling Li and other selling shareholders of Bigo. As of the date of this annual report, we wholly own Bigo.

In June 2019, we completed the offering of US$500 million in aggregate principal amount of convertible senior notes due 2025, or the 2025 Notes, and US$500 million in aggregate principal amount of convertible senior notes due 2026, or the 2026 Notes, which included the exercise in full by the initial purchasers of their option to purchase an additional US$75 million in aggregate principal amount of the 2025 Notes and US$75 million in aggregate principal amount of the 2026 Notes. We collectively refer to the 2025 Notes and the 2026 Notes as the Notes in this annual report. The Notes have been offered in the United States to qualified institutional buyers pursuant to Rule 144A and to non-U.S. persons outside the United States in reliance on Regulation S under the Securities Act. The initial conversion rate of the 2025 Notes is 10.4271 ADSs per US$1,000 principal amount of the 2025 Notes. The initial conversion rate of the 2026 Notes is 10.4271 ADSs per US$1,000 principal amount of such the 2026 Notes. The relevant conversion rate for each series of the Notes is subject to adjustment upon the occurrence of certain events. The 2025 Notes bear interest at a rate of 0.75% per year, and the 2026 Notes bear interest at a rate of 1.375% per year. Interest on the both the 2025 Notes and 2026 Notes will accrue from, and including, June 24, 2019 and will be payable semiannually in arrears on June 15 and December 15 of each year, beginning on December 15, 2019. The 2025 Notes will mature on June 15, 2025 and the 2026 Notes will mature on June 15, 2026, unless repurchased, redeemed or converted in accordance with their terms prior to such date. We may not redeem the Notes prior to maturity, unless certain tax-related events occur. The holders may require us to repurchase all or part of their Notes in cash on June 15, 2023, in the case of the 2025 Notes, and June 15, 2024, in the case of the 2026 Notes, or in the event of certain fundamental changes. In connection with the offering the 2025 Notes and the 2026 Notes, we have entered into capped call transactions with certain counterparties. The cap price of the capped call transactions is initially US$127.87 per ADS and is subject to adjustment under the terms of the capped call transactions.

On April 3, 2020, we transferred 16,523,819 Class B ordinary shares of Huya to Linen Investment Limited, a wholly-owned subsidiary of Tencent for an aggregate purchase price of approximately US$262.6 million in cash, pursuant to Tencent's exercise of its option to purchase additional shares of Huya from the Company. As a result of the share transfer, Tencent increased its voting power in Huya to 50.1% on a fully-diluted basis and became the controlling shareholder of Huya. As a result, Huya has been deconsolidated from our financial statement starting from the second quarter of 2020. The financial information of Huya will be presented in discontinued operations and will not be presented as a separate segment starting from the second quarter of 2020. On August 10, 2020, we entered into a definitive share transfer agreement with Linen Investment Limited, pursuant to which we would transfer 30,000,000 Class B ordinary shares of Huya to Tencent for an aggregate purchase price of US$810.0 million in cash. Immediately after the second share transfer, we held 38,374,463 Class B ordinary shares of Huya, representing 24.1% of the total voting power calculated based on the total issued and outstanding shares of Huya.

On November 16, 2020, we entered into definitive agreements with Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu will acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. In August 2021, December 2021 and April 2022, we and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties. As of the date of this annual report, Baidu has paid an aggregate amount of US$1.9 billion to us and our designated escrow account.

Our principal executive offices locate at 30 Pasir Panjang Road #15-31A Mapletree Business City, Singapore 117440. Our registered office in the Cayman Islands is located at Conyers Trust Company (Cayman) Limited of Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KYI-1111, Cayman Islands.

See "Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Material Cash Requirements" for a discussion of our capital expenditures and divestitures.

SEC maintains an internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC on *www.sec.gov*. You can also find information on our website *http://ir.joyy.com*. The information contained on our website is not a part of this annual report.

B. Business Overview

Overview

We operate leading global online social entertainment platforms, offering users around the world a uniquely engaging and immersive experience across various video and audio-based social platforms, such as live streaming, short-form videos, instant messaging, casual games, and others.

Our platforms are available in more than 150 countries. Our global monthly active users are spread across a number of markets over the globe, including North America, Europe, the Middle East, Southeast Asia, Eastern Pacific regions and others, and reached 280 million in the fourth quarter of 2021. Our revenue is well diversified across these markets.

JOYY operates several online social entertainment platforms, including:

- Live streaming platform —*Bigo Live: Bigo Live*, available in 22 languages, is a leading global social and entertainment live streaming platform, serving users in over 150 countries. Bigo Live provides an interactive online stage for global users to host and watch live streaming sessions, share their life moments, showcase their talents and interact with people across the world. Bigo Live has extensive presence in North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions, among others.

- Short-form video platform — *Likee: Likee* is a leading global short-form video social platform. With the easy, all-in-one and powerful video creation tools as well as the personalized feed, Likee empowers its users to easily create, share and discover short videos. Likee is committed to building a long-term relationship with content creators, which in turn increases user engagement and boost connectivity. Likee has extensive presence in Southeast Asia, the Middle East and Europe.

- Multiuser social networking platform —*Hago: Hago* is a multiuser social networking platform that has extensive presence in Southeast Asia, the Middle East, and South America. Hago provides over 300 casual games, integrating social features such as audio and video livestreaming, multiuser voice interactive party games, interested-based community and channel, among others, which encourages young users to use these features to establish and maintain social connections while enjoying casual games.

- Instant Messenger— *imo:* imo is a global instant messenger that provides audio and video communication service to its users. It has attracted a massive and highly engaged video-oriented user base in South Asia, the Middle East and other regions, by offering frictionless audio and video calls and other communication tools such as group calls, and document sharing, among others.

In the past, we also operated a live streaming platform (our discontinued PRC business) — YY Live. YY Live is an interactive and comprehensive video-based entertainment live streaming social media platform, offering content such as music and dance shows, talk shows, outdoor activities, sports and anime. On November 16, 2020, we entered into definitive agreements with Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu will acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. In August 2021, December 2021 and April 2022, we and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties. As of the date of this annual report, Baidu has paid an aggregate amount of US$1.9 billion to us and our designated escrow account.

Since our inception in 2005, we have incubated, developed, and monetized several social entertainment products and platforms, and accumulated deep expertise in building and operating vibrant video-based social entertainment platforms. With our business model tested first in China, foreseeing the massive global opportunities, we began to expand our global business first by investing in Bigo in 2014, followed by the internationalization of Hago, and by acquiring Bigo in March 2019. We started to implement our globalization initiative by replicating our business model in several other markets across the world, and achieved decent growth in our global business. Our total revenue increased from US$900.7 million in 2019 to US$2.6 billion in 2021, achieving a CAGR of 70.5%.

Artificial intelligence (AI) technology is the backbone of our business success and integrated to all critical aspects of our services and broader business operations. Our AI technology empowers product features and services such as visual and voice recognition, personalized content recommendation and distribution, as well as automated product beta testing and critical corporate decision-making, such as budgeting, which not only improved user experience and enhanced our operational and managerial efficiency.

With our global operational network, we believe our localized, diverse and abundant contents and social entertainment experience position us well to increase our global market share, and to attract, engage and monetize new users. Currently, we monetize our user base mainly through virtual tips for live streaming. We are also exploring additional monetization opportunities and diversifying our main revenue streams, such as advertising, subscription and e-commerce.

Our Platforms and Products

Bigo Live

Bigo Live is a leading global social live streaming platform. *Bigo Live* enables its users to use live streaming as a tool to share their life moments, showcase their talents, socialize and connect with other users from all around the world. Six years after its product launch in 2016, *Bigo Live* has established a strong presence in North America, Europe, the Middle East, Southeast Asia, and Eastern Pacific regions etc.

Bigo Live has built an engaged, interactive and diverse community. Supported by over 30 regional offices located in different countries across the globe and around 3,000 local operational staff, *Bigo Live* has been enlarging its talent pool of content creators and expanding localized content library, catering to the interests of its diverse user base, via various cross-industry partnerships and a series of localized operational activities. *Bigo Live* has expanded into a handful of categories, such as music, dance, comedy, gaming, lifestyle, etc. In the fourth quarter of 2021, the average mobile monthly active users of *Bigo Live* reached 32.2 million, increasing by 11.9% from the same period in 2020.

Bigo Live currently monetize its user base mainly through virtual tips for livestreaming. Users can purchase in-app virtual items and send them as virtual gifts to their favorite hosts to show appreciation and provide them with monetary rewards. Driven by continued user base expansion and enhanced monetization capacity, *Bigo Live*’s livestreaming revenue increased by 31.3% in 2021.

Among the various platforms operated by the Company, *Bigo Live* is currently the largest revenue contributor. *Bigo Live* was ranked as one of the Top 10 Apps by Worldwide Consumer Spend in 2021, according to the data from Data.AI (formerly known as App Annie).

Likee

Likee is a leading global short-form video social platform. Launched in 2017, *Likee* enables users to easily create, share and discover short-form videos, empowered by its easy and all-in-one video creation tools such as filters and special effects, and AI-backed personalized feed. *Likee* has extensive global presence, with primary user base located in Southeast Asia, the Middle East and Europe. In the fourth quarter of 2021, the average mobile monthly active users of *Likee* was 67 million.

In the past years, *Likee* has been dedicating its efforts to cultivate a localized and diverse content community. *Likee* has facilitated a large volume of user generated short-form video content to be produced, uploaded, viewed, shared and commented on a daily basis. In the fourth quarter of 2021, over 20% of *Likee*’s active users produced their own short-form video or hosted their own livestreaming sessions.

In 2021, we fined tuned *Likee*’s marketing strategy since the first quarter of this year and further prioritized our efforts in identifying, cultivating and supporting talented content creators. Through a series of creator support programs, *Likee* provided the creators across various genres with supportive user traffic, efficient content creation tools, professional support from localized operation teams, and diverse monetization methods to pave a path for their long-term personal growth and career development.

As part of *Likee*'s efforts to cultivate and support creators, *Likee* rolled out a series of upgrades to its product features. For example, in the third quarter of 2021, *Likee* introduced a new product feature called "Superlike," enabling users to use Superlike to publicly endorse their favorite creators and support premium content. *Likee* introduced another new feature called "Superfollow" in the fourth quarter of 2021 to enable creators to publish exclusive content for their Superfollowers by earning a monthly subscription fee. We believe these new features will provide more diverse monetization channels to creators, enrich their interactions with fans, and incentivize them to produce more individualized and high-quality content.

Likee continued to organize a variety of offline local events to increase the activeness of its user and creator communities around the globe. For example, in the second quarter of 2021, *Likee* hosted the third season of the "Likee Star Idol" talent show in Indonesia. In collaboration with a local entertainment company, *Likee* selected five top participants to form a pop girl group called "Dreamgirls," whose debut soundtrack and music video garnered playback on more than 160 Indonesian radio stations, attracting a slew of offers for touring concerts and commercial advertising.

Likee kicked off monetization in 2020. Leveraging on *Bigo Live*'s local operational capabilities and successful monetization experience, *Likee* currently monetizes its user base mainly through virtual tips for live streaming. *Likee*'s livestreaming revenue increased by 97.8% in 2021. In addition to livestreaming, *Likee* is also exploring additional monetization opportunities. It has made some preliminary progress on brand advertisements, helping brands to promote their business or product on *Likee*'s platform, via advertisements displayed on the app opening page and video feeds.

Hago

Launched in 2018, *Hago* is a multiuser social networking platform, with primary presence in Southeast Asia, the Middle East, and South America. It provides over 300 casual games, integrating social features such as audio and video livestreaming, multiuser voice interactive party games, interested-based community and channel, etc., which encourage young users to establish and maintain social connections while enjoying casual games. In the fourth quarter of 2021, the average mobile monthly active users of *Hago* was 9.5 million.

In 2021, we made some strategic changes to *Hago*'s positioning, transitioning from an interactive platform primarily focused on casual games to an audio and video multiplayer social networking platform. We made several features iteration in 2021, including the *Hago* 4.0 update with a major revamp for its channel feature focusing on the improvement of multiuser social interactive activities, and the virtual family group functions, etc. Following a series of adjustments, we accomplished a preliminary transformation in *Hago*'s traffic structure, driving further improvements in user interaction, improving *Hago*'s featured channel penetration rate by 7.4%, 4.0% and 2.2% in the second, third and fourth quarter of 2021, respectively, on a quarter over quarter basis.

Hago currently monetizes its user base mainly through virtual tips for live streaming. In 2021, mainly driven by the expansion of its paying users, *Hago*'s livestreaming revenue increased by 54.6%.

imo

imo is a global instant messenger which provides audio and video communication service to its users. It has attracted a large and engaged video-oriented user base in South Asia, the Middle East and other global regions, by offering frictionless video calls and other communication tools such as group calls, document sharing, etc. *imo* fulfills the video communications needs of users in a variety of personal and business-oriented communication scenarios. In the fourth quarter of 2021, the average mobile monthly active users of *imo* reached 171.3 million.

Imo currently monetizes its users mainly by advertisement and livestreaming. By diversifying services offerings within *imo*, we bolstered social interactions among its users and broadened its monetization opportunities. In 2021, *imo* launched a new feature called VoiceClub, which is an online real-time voice communication space, enabling users to establish connections with users beyond their existing network. VoiceClub also enables users to send virtual gifts to their friends to express their support and appreciation. As a result, *imo*'s livestreaming revenue increased by 193.7% in 2021. *imo* will continue to focus on further improvement of its communication experience, explore additional monetization features and further enhance its monetization capabilities.

YY Live (Discontinued)

In the past, we also operated a live streaming platform (our discontinued PRC business) — YY Live. YY Live is an interactive and comprehensive video-based entertainment live streaming social media platform, offering content such as music and dance shows, talk shows, outdoor activities, sports and anime. On November 16, 2020, we entered into definitive binding agreements with Baidu and made certain amendments on February 7, 2021, pursuant to which our PRC video-based entertainment live streaming business or YY Live will be acquired by Baidu, which includes YY mobile app, YY.com website and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. As a result, the historical financial results of YY Live are reflected in our consolidated financial statements as discontinued operations, and accordingly, we ceased consolidation of YY Live business since February 8, 2021. In August 2021, December 2021 and April 2022, we and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties. As of the date of this annual report, Baidu has paid an aggregate amount of US$1.9 billion to us and our designated escrow account, and the necessary regulatory approval with respect to the proposed acquisitions has not been obtained yet.

Global Branding and Marketing

Branding Strategy

Commensurate with our growing global presence and leadership position, we elevated our group legal name from *YY* to *JOYY* in 2019, reiterating our vision of bring joyful and youthful experiences to users around the world. This latest strategy upgrade offers us greater flexibility to unleash the respective branding power of our various products and services targeting different demographics of users across the globe. Our comprehensive matrix of popular global brands, including *Bigo Live*, *Likee*, *imo* and *Hago*, enable us to reach the full spectrum of coveted user bases around the world.

Marketing Activities

We employ a variety of marketing activities, embracing the latest trends in online and social-based promotional strategies. We employ performance-based advertising, social network marketing campaigns, as well as promotion through search engines and web portals, with an emphasis on efficiency and delivering measurable results. Furthermore, we cooperate with application distributors and hardware manufacturers, and sponsor offline exhibitions and industry summits. We are also exploring innovative ways to enhance our user acquisition through various marketing activities, such as TV programs, online entertainment variety shows and dramas, and offline channels.

Seasonality

Our results of operations of various products and services are subject to seasonal fluctuations. However, seasonal fluctuations have not posed material operational and financial challenges to us, as such periods tend to be brief and predictable.

Competition

We face competition in several major aspects of our business, particularly from companies that provide online live streaming and short-form video businesses in terms of user traffic and user time spent. In relation to our global business, our competitors primarily include global short-form video platforms such as TikTok, and livestreaming platforms such as Twitch in certain regions.

Technology

Our proprietary technologies are the backbone of our products and services. We enhance our user experience though a variety of advanced technology, including our AI-based content recommendation technology, to accurately and efficiently identify and deliver tailored short-form video clips and live streaming content to our users. As a leading provider of large-scale multi-user voice- and video-enabled online service, we continually improve our technologies. Our capability to provide superior user experience is further supported by our highly scalable infrastructure, proprietary algorithms and software, and tailored devices for optimal live broadcasting performance, which help enable low latency, low jitter and low loss rates in delivering voice and video data even with weak internet connection.

Artificial intelligence (AI) and algorithms technologies

AI and algorithms technologies are embedded into our technology DNA. For example, we leverage our sophisticated machine learning models to enhance the effectiveness of our content tagging functions. We have also implemented our AI-powered visual recognition technology into our content distribution engine so that it can, with the assistance from our large-scale deep neural network and various search-related technology, automatically tag and accurately recommend the most relevant short-form video clips and live streaming shows to our users. The vast amount of users' behavior data that we have accumulated helps us to construct data models of the underlying relations between our users, content and creators, thereby gaining a deeper understanding of their tendencies and preferences. Through those efforts, we were able to create an optimal experience for our users by ensuring that we distribute the video content to the different audience groups.

In addition, we are also empowered by our cutting-edge computer vision (CV) and augmented reality (AR) technology to help our content creators in combining real life's moments with virtual scenes to produce innovative and engaging video content. We have launched *Likee*'s FaceMagic after years of R&D efforts in CV, which is able to help millions of creators on the platform to participate in virtual shows and share the astonishing moments with their fans.

QoS for online multi-media communications

Quality of Service, or QoS, assurance is a key element of any high quality delivery of voice and video data over the internet. For live voice- or video-enabled communications, any data packet loss and jitter, or delay in transmission, is often immediately noticeable to users. We devote significant resources to maintain and develop a creative combination of multiple voice- and voice-over internet protocol, or VOIP, quality assurance mechanisms to minimize data loss and jitter. The mechanisms we employ include, but are not limited to, cloud-based intelligence routing, low-bitrate redundant solution, upstream-forward error correction and adaptive jitter. A special intelligent routing algorithm we designed automatically seeks optimal ways of delivering voice and video data across our cloud-based network, enabling us to provide better QoS even when the QoS levels are lower on certain routes.

We employ computer programs and design and implement a standardized set of measurements to help monitor our service quality. Our system periodically collects, and our team of experts analyzes, data from each of our data centers to evaluate the voice- and video-quality for each user using a systematic standard. We have set up formal procedures to handle different levels of server breakdowns and network-related emergencies, and our team can remotely discover issues and access any server to promptly resolve issues. Positioned to offer top-quality audio and video experience to our users worldwide, we developed a series of media technologies and revamped our streaming framework, which enable multimodal information to be synthetically utilized to provide highly flexible and customizable services.

Our adaptive audio and video encoding, transmission and decoding algorithms are conducive to delivering superior audio and video experience based on users' local setup, including locations, devices, network condition and personal preference, optimizing both fluency and latency at the same time.

Large, dedicated cloud-based network infrastructure

In 2021, we continued to develop and expand our global data center network, to provide top-quality, real-time video and audio services to our users worldwide. Our infrastructure provides seamless integration and is highly customized for supporting our services with significant flexibility. Our team of experts developed a cloud-based network infrastructure specifically designed to handle multi-party voice- and video-enabled real-time online interactions. We own over 34,000 servers which are hosted in the data centers we lease from third parties across the world as of December 31, 2021. Our cloud-based network infrastructure provides quality data delivery and enable many users to interact online from anywhere with ease and speed.

Our system is designed for scalability and reliability to support growth in our user base. The number of our servers contributes significantly to our fast streaming speed and reliable services, and can be expanded with comparative ease and relatively lower cost, given the flexibility of renting data centers to host additional servers in any high traffic regions in our network. We believe that our current network facilities and broadband capacity provide us with sufficient capacity to carry out our current operations, and can be expanded to meet additional capacity relatively quickly. The amount of bandwidth we lease is continually expanded to reflect increased peak concurrent user numbers. We have been developing and expanding our data centers network around the world, focusing on Asia, Europe and the Americas. Our data centers' key technological mechanisms include optimized data access, automated switch of servers, and intelligent routing, which help ensure the quality of data transmission for our users globally. In response to poor connection situations, we are able to provide precise connection estimation, adaptive transcoding, segmentation-based coding and other advanced mechanisms to help users enjoy high-quality audio and video experience.

Proprietary data-driven platform

Significant time and efforts are required to build and operate an infrastructure such as ours. The technological difficulties which a platform that hosts 10,000 concurrent users faces differ greatly from the difficulties a platform with 100,000 and 1,000,000 concurrent users faces, including many issues to be considered when programming for the platform and planning the infrastructure. Over the years, we have gradually developed an effective system to identify, study and resolve issues that we encounter every day. In addition, our team members have been trained over the years to anticipate and resolve any issues, having gained significant knowledge from building and maintaining our platforms over time.

Safeguarding User Privacy

We dedicate significant resources to strengthening the user privacy functions of our platforms, promoting a safe online environment for our users. For example, we provide our users with adequate notice as to what data are being collected, and have implemented a variety of mechanisms and policies to prevent the unauthorized use, loss or leak of collected user data. In addition, our data security technologies empower us to protect user data. For our external interfaces, we utilize firewalls to protect against potential attacks or unauthorized access. Our dedicated team of privacy professionals conducts regular reviews of our data security practices.

Content Management and Monitoring

Our live streaming, short-form video and video communication platforms and other products enable users to exchange information, generate and distribute content, advertise products and services, conduct business and engage in various other online activities. A team within our data security department helps in enforcing our internal procedures to ensure that the content in our system is in compliance with applicable laws and regulations. They are aided by a program designed to sweep our platforms in real time and the data being conveyed in our system for sensitive key words or questionable materials. Content that contains certain keywords are automatically filtered by our program and cannot be successfully posted on our platforms. Thus we are able to minimize offending materials on our platforms and to remove such materials promptly after they are discovered. Our Hago platform has deployed deep learning-based voice recognition technology, which helps us to detect and delete prohibited content and deal with the relevant distributors in a timely fashion. See "Item 3. Key Information—D. Risk Factors— Risks Related to Our Business and Industry—We may face significant risks related to the content and communications on our platforms."

We have been continually localizing our content management and monitoring efforts. In particular, we have deployed approximately 2,300 dedicated content management and monitoring personnel with local language proficiency and cultural understanding in a number of countries worldwide, including, but not limited to, Egypt, Indonesia, Thailand and Vietnam.

Our IT Professionals

We believe that our ability to develop internet and mobile online applications and services tailored to respond to the needs of our user base has been a key factor for the success of our business. As of December 31, 2021, our research and development team consisted of 2,660 members. All of our service programs are designed and developed internally, including various interactive technologies. Our research and development team currently works on both back-end and front-end development of our products and services, including (a) the continuous improvement of our core audio and video data processing and streaming technologies, (b) the enhancement of network and server structures, data distribution and transfer technologies to achieve lower latency and reduce interruptions, and (c) the creation of new features and functions to meet the demand of our users in various business lines, including, but not limited to, PC-desktop, web and mobile applications, channel templates and virtual items. We also build a team of experienced engineers who help us address challenges such as recommendation engines, big data and artificial intelligence, particularly in the areas of computer vision, national language processing, automatic speech recognition and speech synthesis.

We have technicians who are dedicated to monitoring and maintaining our network infrastructure. Our operation and maintenance team checks the voice and video data quality received by various users, the quality of users' experience on our platforms and the proper functioning of our server equipment in our network, as well as contacting internet data center hosts to fix any issues located through such checks. Having launched more diversified and complex products and services for an increasing number of users, we raised new challenges to our operation and maintenance team, and rely on them to continue to provide video content services and online real-time interactions to our users.

Intellectual Property

We regard our patents, trademarks, domain names, copyrights, trade secrets, proprietary technologies and similar intellectual property as critical to our success. We seek to protect our intellectual property rights through a combination of patent, trademark, copyright and trade secret protection laws in the PRC and other jurisdictions, as well as through confidentiality agreements and procedures with our employees, partners and others.

Bigo and Others

As of December 31, 2021, we held 935 registered domain names, including joyy.com, Bigo TV, Duowan.com, 100.com, bigolive.sg, likee.com, 520hello.com, 796 software copyrights and other copyrights, 988 patents and 2,015 trademarks and service marks. In addition, as of December 31, 2021, we had filed 3,997 patent applications, covering certain of our proprietary technologies, and 3,684 trademark applications. For the avoidance of confusion, the above numbers exclude intellectual property rights which will be transferred to Baidu following the full completion of the sale of YY Live to Baidu, which was substantially completed with certain customary matters remaining to be completed in the future.

Regulations

Regulations in Multiple Jurisdictions Where We Operate (other than China)

As our globalized operations evolve, we may, from time to time, be subject to government regulations. As the live streaming and short-form video businesses are still at an early stage of development in the jurisdictions where we have presence, new laws and regulations may be adopted from time to time to require new licenses and permits in addition to those we currently have. This section sets forth the most important laws and regulations that govern our current business activities in multiple jurisdictions across the globe, including European Union, India and Singapore.

Regulations on Data Privacy and Protection

General Data Protection Regulation – European Union

The General Data Protection Regulation, or GDPR, regulates the collection and use of personal data in the EU. The GDPR covers any business, regardless of its location, that provides goods or services to residents in the EU and, thus, could incorporate our activities in EU member states. The GDPR imposes strict requirements on controllers and processors of personal data, including special protections for "sensitive information," which includes health and genetic information of individuals residing in the EU. GDPR grants individuals the opportunity to object to the processing of their personal information, allows them to request deletion of personal information in certain circumstances, and provides the individual with an express right to seek legal remedies in the event the individual believes his or her rights have been violated. Further, the GDPR imposes strict rules on the transfer of personal data out of the EU to regions that have not been deemed to offer "adequate" privacy protections. Failure to comply with the requirements of the GDPR and the related national data protection laws of the EU member states, which may deviate slightly from the GDPR, may result in warning letters, mandatory audits and financial penalties, including fines of up to 4 percent of global revenues, or €20,000,000, whichever is greater. As a result of the implementation of the GDPR, we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules.

There is significant uncertainty related to the manner in which data protection authorities will seek to enforce compliance with GDPR. For example, it is unclear whether the authorities will conduct random audits of companies doing business in the EU, or act solely after complaints are filed claiming a violation of the GDPR. The lack of compliance standards and precedent, enforcement uncertainty and the costs associated with ensuring GDPR compliance may be onerous and adversely affect our business, financial condition, results of operations and prospects.

California Consumer Privacy Act – California, United States

The California Consumer Privacy Act, or CCPA, went into effect on January 1, 2020. The CCPA creates new transparency rules and individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, and provides such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase the likelihood and cost of data breach litigation. The potential effects of this legislation are far-reaching and may require us to modify our data processing practices and policies and incur substantial costs and expenses in compliance and potential ligation efforts. As some other state and federal legislative and regulatory bodies are considering similar legislation on how to handle personal data, some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States, which could increase our potential liability and adversely affect our business.

Online Collection of Information from Children

The Children's Online Privacy Protection Act of 1998, or COPPA, governs the online collection of personal information from children under the age of 13. Under COPPA, a website or online service that knowingly collects information from children under 13 years old, or that in whole or in part is directed to children under 13 years old, must obtain verifiable parental consent before collecting, using and/or disclosing personal information from any child (including, but not limited to, first and last name, home address, email address, telephone number, Social Security number, image or likeness, mobile device identifier or other persistent identifier that would permit the physical or online contacting of a specific individual).

Websites or online services subject to COPPA must therefore obtain verifiable parental consent before engaging in online advertising that involves tracking of children under the age of 13. The website operator must also post and obtain parental consent to a clear online privacy policy that provides notice of what information is collected from children, how the information is used, and a list of third parties with which the operator may share or sell the child's information. The privacy policy must give parents the choice to determine whether the child's information can be shared with third parties, provide parents access to the child's information, and offer parents the opportunity to delete any collected information. If the company permits third-party advertising networks to use persistent identifiers to serve advertisements, those advertising networks must be informed that the site or service is directed towards children and the company must ensure that parental consent covers such collection, sharing, and use. Moreover, the operator must establish and maintain reasonable procedures to protect the confidentiality, security and integrity of any personal information collected from children under 13 years of age. COPPA also prohibits conditioning a child's participation in a game on the child disclosing more personal information than is reasonably necessary to participate in such activity. COPPA authorizes the FTC and the State Attorneys General to bring actions against website operators to enforce the statute, and provides for penalties of up to US$42,530 per violation.

Information Technology Act 2000 – India

Information Technology Act 2000, or the IT Act, governs the data privacy regulations in India. The IT Act contains three provisions on data protection and privacy. Section 43A provides that we are subject to civil liability to compensate for wrongful loss or gain to any person arising from negligence in implementing and maintaining reasonable security practices and procedures with respect to sensitive personal data or information that we possess, deal with or handle in our computer systems, networks, databases and software. Section 72A provides for criminal punishment if, in the course of performing a contract, a service provider discloses personal information without the consent of the person concerned or in breach of a lawful contract and he or she does so with the intention to cause, or knowing he or she is likely to cause, wrongful loss or wrongful gain. Section 72 prescribes criminal punishment if a government official discloses records and information accessed by him or her in the course of his or her duties without the consent of the concerned person or unless permitted by other laws. Section 79 provides safe harbor protection to internet service providers from being held liable for third-party information or data made available by such internet service providers that they have no knowledge of or that they had exercised all due diligence to prevent. India has also implemented privacy laws, including (i) the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011, which impose limitations and restrictions on the collection, use and disclosure of personal information, and (ii) the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which provides for checks and balances on social media companies by setting timelines for removal of unlawful content.

Personal Data Protection Act 2012 – Singapore

An organization collecting, using or disclosing personal data is subject to the Personal Data Protection Act 2012 of Singapore, or the PDPA. Any information, whether true or not, that may be used to identify a natural person either directly from the data, or from the data and other information that the organization has access to, is considered "personal data,". Examples may include an individual's name, date of birth, identity card number, passport number, residential address, characteristics and fingerprints, among others. The personal data that is protected under the PDPA excludes personal data that is publicly available and personal data that is disclosed under any written law. The PDPA also does not apply to business contact information, such as an individual's name, title, business address, business telephone number, and business e-mail address.

When an organization collects personal data, it must procure the individual's consent or deemed consent to the collection, use and disclosure of his/her personal data. Therefore, the individual should be notified of the purposes for which his personal data is collected, used or disclosed. There are certain exceptions to the consent requirement, which include the collection, use and disclosure of personal data for vital interests of individuals, matters affecting the public, legitimate interests of the organization, business asset transactions, business improvement and research.

Under the PDPA, individuals have the right to request for access to their personal data, get information on the ways in which their personal data has been used or disclosed by the organization, and to correct the personal data held by the organization. The organization should designate a Data Protection Officer for this purpose. Where the organization is likely to use the personal data to make a decision that affects the relevant individuals, or disclose the personal data to another organization, the organization must take reasonable steps to ensure that the personal data recorded is accurate. The organization should put security arrangements in place to protect the personal data as well as cease to retain any personal data as soon as the purpose for which the personal data was collected is no longer being served by the retention of such personal data and the retention is no longer necessary for legal or business purposes.

Furthermore, when transferring personal data outside of Singapore, care must be taken to ensure that the recipient organization is bound by legally enforceable obligations or specified certifications to afford the personal data with a standard of protection that is comparable to that established by the PDPA. Legally enforceable obligations may be imposed via the applicable law, a contract, binding corporate rules or any other legally binding instrument.

Where a breach of personal data has occurred, the organization is required to take reasonable and expeditious steps to assess the data breach. In some cases, the organization may be required to report the data breach to the Personal Data Protection Commission, and the affected individuals. Where the organization is acting as a data intermediary that is processing the personal data for another organization, the data intermediary is required to notify the organization of any data breaches in a timely manner.

Regulations on Intellectual Property

Copyright Act, 1957 – India

Copyright law in India is governed by the Copyright Act, 1957, which has been amended six times, with the last amendment in 2012. It is a comprehensive set of statutes providing for legal protection to copyright, moral rights and neighboring rights. Under the fair use provisions of the Act, section 52(1)(b) provides that transient or incidental storage of a work or performance purely in the technical process of electronic transmission or communication to the public does not constitute infringement of copyright. This provision provides safe harbor to internet service providers that may have incidentally stored infringing copies of a work for the purpose of transmission of data.

PRC Regulation

Certain areas related to the internet, such as telecommunications, internet information services, connections to the international information networks and internet information security and censorship, are covered extensively by a number of existing laws and regulations issued by various PRC governmental authorities. With the sale of YY Live being substantially completed with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities, we believe the majority of our business, especially our global platforms that we operate outside China, is not subject to the above regulations. Yet as we maintained some of our audio and video capabilities and functions in China, our remaining PRC business operations are subject to regulations issued by the below authorities, including:

- the Ministry of Industry and Information Technology, or the MIIT;
- the Ministry of Culture, or the MOC, which currently known as the Ministry of Culture and Tourism;
- the General Administration of Press and Publication, or the GAPP;
- the State Administration for Radio, Film and Television, or the SARFT;
- State Administration of Press, Publication, Radio, Film and Television of the People’s Republic of China, or the SAPPRFT;
- the National Copyright Administration, or the NCA;
- the State Administration for Industry and Commerce, or the SAIC, which currently known as the State Administration for Market Regulation, or the SAMR;
- the State Council Information Office, or the SCIO;
- the Ministry of Commerce, or the MOFCOM;
- the Bureau of Protection of State Secrets;
- the Ministry of Public Security; and

- the State Administration of Foreign Exchange, or the SAFE.

As the online social platform is still at an early stage of development in China, new laws and regulations may be adopted from time to time to require new licenses and permits in addition to those we currently have. There are substantial uncertainties on the interpretation and implementation of any current and future Chinese laws and regulations, including those applicable to the online social platform industries. See “Item 3. Key Information—D. Risk Factors— Risks Related to Doing Business in Jurisdictions We Operate—Uncertainties in the interpretation and enforcement of Chinese laws and regulations could limit the legal protections available to you and us.” This section sets forth the most important laws and regulations that govern our current business activities in China and that affect the dividends payment to our shareholders.

Regulations on Overseas Listing by Domestic Companies

On August 8, 2006, six PRC governmental agencies jointly promulgated the Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, or the M&A Rules, which became effective on September 8, 2006, and amended on June 22, 2009. The M&A Rules require offshore special purpose vehicles formed to pursue overseas listing of equity interests in PRC companies and controlled directly or indirectly by PRC companies or individuals to obtain the approval of the CSRC, prior to the listing and trading of such special purpose vehicle’s securities on any stock exchange overseas.

The application of the M&A Rules remains unclear. Based on the understanding of our PRC counsel, Fangda Partners, on the current PRC laws, rules and regulations and the M&A Rules, prior approval from the CSRC is not required under the M&A Rules for the listing and trading of our ADSs on the Nasdaq Global Select Market because (a) our PRC subsidiaries, Beijing Huanju Shidai and Guangzhou Huanju Shidai, are foreign-invested enterprises established by foreign enterprises, (b) we did not acquire any equity interest or assets of a PRC domestic company owned by PRC companies or individuals as defined under the M&A Rules, and (c) there is no provision that clearly classifies the contractual arrangements among our PRC subsidiary, Beijing Huanju Shidai, the variable interest entities and their shareholders as a transaction regulated by the M&A Rules. However, as there has been no official interpretation or clarification of the M&A Rules, we are also advised by our PRC counsel that there is uncertainty as to how this regulation will be interpreted or implemented.

Considering the uncertainties that exist with respect to the issuance of new laws, regulations or interpretation and implementing rules, the opinion of Fangda Partners summarized above is subject to change. If the CSRC or another PRC regulatory agency subsequently determines that prior CSRC approval was required, we may face regulatory actions or other sanctions from the CSRC or other PRC regulatory agencies.

On December 24, 2021, the State Council issued a draft Provisions of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments), or the Administrative Provisions, and the CSRC issued a draft of Administration Measures for the Filing of Overseas Securities Offering and Listing by Domestic Companies (Draft for Comments), or the Draft Administration Measures, for public comments. The Administrative Provisions and the Draft Administration Measures propose to establish a new filing-based regime to regulate overseas offerings and listings by domestic companies. According to the Administrative Provisions and the Draft Administration Measures, an overseas offering and listing by a domestic company, whether directly or indirectly, shall be filed with the CSRC. Specifically, the examination and determination of an indirect offering and listing will be conducted on a substance-over-form basis, and an offering and listing shall be considered as an indirect overseas offering and listing by a domestic company if the issuer meets the following conditions: (i) the operating income, gross profit, total assets, or net assets of the domestic enterprise in the most recent fiscal year was more than 50% of the relevant line item in the issuer’s audited consolidated financial statement for that year; and (ii) senior management personnel responsible for business operations and management are mostly PRC citizens or are ordinarily resident in the PRC, and the main place of business is in the PRC or carried out in the PRC. According to the Draft Administration Measures, the issuer or its affiliated domestic company, as the case may be, shall file with the CSRC for its initial public offering, follow-on offering and other equivalent offing activities. Particularly, the issuer shall submit the filing with respect to its initial public offering and listing within three business days after its initial filing of the listing application, and submit the filing with respect to its follow-on offering within three business days after completion of the follow-on offering. Failure to comply with the filing requirements may result in fines to the relevant domestic companies, suspension of their businesses, revocation of their business licenses and operation permits and fines on the controlling shareholder and other responsible persons. The Draft Administration Measures also sets forth certain regulatory red lines for overseas offerings and listings by domestic enterprises.

As of the date of this annual report, the Administrative Provisions and the Draft Administration Measures were released for public comment only, the deadline of which was January 23, 2022. There are uncertainties as to whether the Administrative Provisions and the Draft Administration Measures would be further amended, revised or updated. Substantial uncertainties exist with respect to the enactment timetable and final content of the Draft Provisions and the Administrative Administration Measures.

Furthermore, the relevant PRC governments promulgated the Opinions on Strictly Cracking Down on Illegal Securities Activities According to Law on July 6, 2021, within which, it is mentioned that the administration and supervision of overseas-listed China-based companies will be strengthened, and the special provisions of the State Council on overseas issuance and listing of shares by such companies will be revised, clarifying the responsibilities of domestic industry competent authorities and regulatory authorities.

In addition, on December 28, 2021, the CAC, together with 12 other government authorities, jointly issued the Cybersecurity Review Measures, which became effective on February 15, 2022. According to the Cybersecurity Review Measures, among others, (i) a "network platform operator" holding over one million users' personal information shall apply for a cybersecurity review when listing their securities "in a foreign country" (ii) a critical information infrastructure operator, or a CIIO, that intends to purchase internet products and services that affect or may affect national security should apply for a cybersecurity review, and (iii) a "network platform operator" carrying out data processing activities that affect or may affect national security should apply for a cybersecurity review. Since the Cybersecurity Review Measures are relatively new, significant uncertainties remain in relation to their interpretation and implementation. Additionally, the Cybersecurity Review Measures do not provide the exact scope of "network platform operator" or the criteria for determining which circumstance falls within the definition of "holding over one million users' personal information." Furthermore, on November 14, 2021, the CAC commenced to publicly solicit comments on the Regulations on the Administration of Cyber Data Security (Draft for Comments), or the Draft Cyber Data Security Regulation, which regulates the specific requirements in respect of the data processing activities conducted by data processors through internet in the view of personal data protection, security of important data, data cross-border security management and obligations of internet platform operators. The Draft Cyber Data Security Regulation provides that, data processors conducting the following activities must apply for cybersecurity review: (i) merger, reorganization, or division of internet platform operators that have acquired a large number of data resources related to national security, economic development, or public interests, which affects or may affect national security; (ii) a foreign listing by a data processor processing personal information of over one million users; (iii) a listing in Hong Kong which affects or may affect national security; or (iv) other data processing activities that affect or may affect national security. In addition, the Draft Cyber Data Security Regulations require that a data processor who processes important data or whose securities are listed outside the PRC shall carry out annual data security assessment either by itself or through a third-party data security service provider and submit the assessment report to a local agency of the CAC. The Draft Cyber Data Security Regulations provide for a broad definition of "data processing activities" which includes collection, storage, usage, processing, transfer, provision, publication, deletion and other activities, which covers the entire life cycle of data processing. The definition of a "data processor" is also quite broad as covering individuals and entities that may autonomously determine the purpose and the method of data processing activities. However, the Draft Cyber Data Security Regulations were released for public comment only and its operative provisions and the anticipated adoption or effective dates may be subject to change with substantial uncertainty.

Meanwhile, according to the 2021 Negative List, where a domestic enterprise engaging in the prohibited business in the 2021 Negative List issues and lists shares overseas for trading, it shall obtain the approval of the relevant competent department of the state, and the overseas investor shall not participate in the operation and management of the domestic enterprise, and its shareholding ratio shall be subject to the relevant provisions on the administration of domestic securities investment by overseas investors.

Regulation on Telecommunications Services and Foreign Ownership Restrictions

Investment activities in China by foreign investors are mainly governed by the Special Administrative Measures (Negative List) for the Access of Foreign Investment (2021), or the 2021 Negative List, which was promulgated on December 27, 2021 and became effective on January 1, 2022. According to the 2021 Negative List, the foreign stake in a value-added telecommunications service (except e-commerce, domestic multi-party communication, store-and-forward, and call center services) may not exceed 50%.

On December 30, 2019, the MOC and the SAMR jointly promulgated the Measures for Reporting of Foreign Investment Information, which became effective on January 1, 2020. According to the Measures for the Reporting of Foreign Investment Information, where foreign investors carry out investment activities directly or indirectly within China, foreign investors or foreign-invested enterprises shall report investment information to commerce departments in accordance with these Measures. A foreign investor who establishes a foreign-invested enterprise within China shall submit an initial report through the enterprise registration system when undergoing formation registration of the foreign-invested enterprise. In the case of any modification of the information in the initial report, which involves the enterprise's modification registration (recordation), the foreign-invested enterprise shall submit the modification report through the enterprise registration system when undergoing the enterprise's modification registration (recordation).

According to the Telecommunications Regulations, which became effective on September 25, 2000 and have been subsequently amended respectively on July 29, 2014 and February 6, 2016, and the Catalog of Telecommunications Business (2015 Amendment), implemented on March 1, 2016 attached to the Telecommunications Regulations and amended on June 6, 2019, internet information services are deemed a type of value-added telecommunications services. The Telecommunications Regulations require the operators of value-added telecommunications services to obtain value-added telecommunications business operation licenses from MIIT or its provincial delegates prior to the commencement of such services. Under these regulations, if the value-added telecommunications services offered include mobile network information services, the operation license for value-added telecommunications business must include the provision of such services in its covered scope. We currently hold ICP licenses, a sub-category of the value-added telecommunications business operation license, through Guangzhou Huaduo and Guangzhou BaiGuoYuan, covering the provision of internet and mobile network information services, issued by the Guangdong branch of the MIIT, which were last updated on December 23, 2020 and March 21, 2018, respectively.

The Regulations for the Administration of Foreign-Invested Telecommunications Enterprises, or the FITE Regulations, which took effect on January 1, 2002 and were amended respectively on September 10, 2008 and February 6, 2016, are the key regulations that regulate foreign direct investment in telecommunications companies in China. The FITE Regulations stipulate that the foreign investor of a telecommunications enterprise is prohibited from holding more than 50% of the equity interest in a foreign-invested enterprise that provides value-added telecommunications services, including provision of internet content. Moreover, such foreign investor shall demonstrate a good track record and experience in operating value-added telecommunications services when applying for the value-added telecommunications business operation license from the MIIT.

On July 13, 2006, the MIIT issued the Circular on Strengthening the Administration of Foreign Investment in Value-added Telecommunications Services, or the MIIT Circular 2006, which requires that (a) foreign investors can only operate a telecommunications business in China through establishing a telecommunications enterprise with a valid telecommunications business operation license; (b) domestic license holders are prohibited from leasing, transferring or selling telecommunications business operation licenses to foreign investors in any form, or providing any resource, sites or facilities to foreign investors to facilitate the unlicensed operation of telecommunications business in China; (c) value-added telecommunications service providers or their shareholders must directly own the domain names and registered trademarks they use in their daily operations; (d) each value-added telecommunications service provider must have the necessary sites and facilities for its approved business operations and maintain such sites and facilities in the geographic regions covered by its license; and (e) all value-added telecommunications service providers should improve network and information security, enact relevant information safety administration regulations and set up emergency plans to ensure network and information safety. Due to the lack of any additional interpretation from the regulatory authorities, it remains unclear what impact MIIT Circular 2006 will have on us or the other PRC internet companies with similar corporate and contractual structures.

To comply with such foreign ownership restrictions, we operate our online platform in China through Guangzhou Huaduo in PRC, a subsidiary of Guangzhou Tuyue. Guangzhou Tuyue is indirectly held by selected individuals from our senior management team who are PRC citizens, through PRC limited partnership jointly established by these individuals. See "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements." Moreover, Guangzhou Huaduo is the registered holder of a majority of the domain names, trademarks and facilities necessary for daily operations in compliance with the MIIT Circular 2006. Based on our PRC counsel Fangda Partners' understanding of the current PRC laws, rules and regulations, our corporate structure complies with all existing PRC laws and regulations. However, we were further advised by our PRC counsel that there are substantial uncertainties with respect to the interpretation and application of existing or future PRC laws and regulations and thus there is no assurance that Chinese governmental authorities would take a view consistent with the opinions of our PRC counsel.

Internet Information Services

The Administrative Measures on Internet Information Services, or the ICP Measures, issued by the State Council on September 25, 2000 and amended on January 8, 2011, regulate the provision of internet information services. According to the ICP Measures, internet information commercial service providers shall obtain a value-added telecommunications business operation license (the "ICP license"), from the relevant local authorities before engaging in the providing of any commercial internet information services in China, and the ICP license is subject to annual inspection within the first quarter of the next year according to the Administrative Measures for Telecommunications Business Operating Licensing, which was promulgated by the MIIT on March 5, 2009 and amended on July 3, 2017. In addition, if the internet information services involve provision of news, publication, education, medicine, health, pharmaceuticals, medical equipment and other services that statutorily require approvals from other additional governmental authorities, such approvals must be obtained before applying for the ICP license. Each of Guangzhou Huaduo and Guangzhou BaiGuoYuan presently holds the ICP licenses on internet and mobile network information services issued by the Guangdong branch of the MIIT.

Besides, the ICP Measures and other relevant measures also ban the internet activities that constitute publication of any content that propagates obscenity, pornography, gambling and violence, incite the commission of crimes or infringe upon the lawful rights and interests of third parties, among others. If an internet information service provider detects information transmitted on their system that falls within the specifically prohibited scope, such provider must terminate such transmission, delete such information immediately, keep records and report to the governmental authorities in charge. Any provider's violation of these prescriptions will lead to the revocation of its ICP license and, in serious cases, the shutting down of its internet systems.

On January 8, 2021, the CAC promulgated the Internet Information Services Measures (Revised Draft for Comments), which sets forth detailed rules on the internet information service activities. As of the date of this annual report, the draft has not been formally adopted.

Regulations Related to Mobile Internet Applications Information Services

The mobile internet applications, or the APPs, are specially regulated by the Administrative Provisions on Mobile Internet Applications Information Services, or the App Provisions, which were promulgated by the Cyberspace Administration of China, or CAC, on June 28, 2016 and became effective on August 1, 2016. The App Provisions set forth the relevant requirements on the APP information service providers. The CAC and local offices of cyberspace administration shall be responsible for the supervision and administration of nationwide and local APP information respectively.

The APP information service providers shall satisfy relevant qualifications required by laws and regulations, carry out the information security management responsibilities strictly and fulfill their obligations in various aspects relating to real-name system, protection of users' information, examination and management of information content, as follows: (i) shall authenticate the identity information of the registered users including their mobile phone number and other identity information under the principle that mandatory real name registration at the back-office end, and voluntary real-name display at the front-office end; (ii) shall establish and perfect the mechanism for the protection of users' information and follow the principle of legality, rightfulness and necessity, indicate expressly the purpose, method and scope of collection and use and obtain the consent of users while collecting and using users' personal information; (iii) shall establish and perfect the mechanism for the examination and management of information content, and in terms of any information content released that violates laws or regulations, take such measures as warning, restricting the functions, suspending the update and closing the accounts as the case may be, keep relevant records and report the same to relevant competent authorities; (iv) shall safeguard users' right to know and to make choices when users are installing or using such applications, and shall neither start such functions as collecting the information of users' positions, accessing users' contacts, turning on the camera and recording the sound, or any other function irrelevant to the services, nor forcefully install any other irrelevant applications without prior consent or users' when noticed expressly; (v) shall respect and protect the intellectual properties and shall neither produce nor release any application that infringes others' intellectual properties; and (vi) shall record the users' log information and keep the same for 60 days.

On November 28, 2019, the Secretary Bureau of the Cyberspace Administration of China, the MIIT, the Ministry of Public Security and the SAMR jointly promulgated the Measures for the Determination of the Collection and Use of Personal Information by APPs in Violation of Laws and Regulations, which came into effect on the same day. The Measures explicitly classify acts that may be determined as "failing to make public the collection and use rules", "failing to explicitly showing the purposes, methods and scope of the collection and use of personal information", "failing to collect and using personal information with a user's consent", "collecting personal information unrelated to the services it provides against the necessary principle" and "providing personal information to others without consent."

Real-name Registration System

Pursuant to the Provisions on Administration over the Internet User Public Account Information Services, which was promulgated by the State Internet Information Office on September 7, 2017 and became effective on October 8, 2017 and amended on February 22, 2021, the network platforms providing the services of registration of the Internet user accounts shall conduct real identity verification over the registered users and require providing the identity information and mobile phone number. If a user fails to provide real identity information, the network platforms shall not provide the information release services to such user.

Online Music and Entertainment

On November 20, 2006, the MOC issued Several Suggestions of the MOC on the Development and Administration of Internet Music, or the Suggestions, which became effective on the same date. The Suggestions, among other things, reiterate the requirement for an internet service provider to obtain an Internet Culture Operation License to carry out any business relating to internet music products. In addition, foreign investors are prohibited from operating internet culture businesses. However, the laws and regulations on internet music products are still evolving, and there have not been any provisions clarifying whether music products will be regulated by the Suggestions or how such regulation would be carried out.

On July 8, 2015, the National Copyright Administration issued the Circular regarding Ceasing Transmitting Unauthorized Music Products by Online Music Service Providers, which requires that (a) all unauthorized music products on the platform of online music services providers shall be removed prior to July 31, 2015; and (b) the National Copyright Administration investigate and punish the online music services providers who continue to transmit unauthorized music products following July 31, 2015.

On October 23, 2015, the MOC promulgated the Notice on Further Strengthening and Improving the Content Management of Online Music, which stipulated that operating entities shall carry out self-examination in respect of the content management of online music, which shall be regulated by the cultural administration departments in process or afterwards.

Guangzhou Huaduo holds a valid Internet Culture Operation License covering our provision of online music. Most of the music offered on our websites is sung by grassroots performers along with recorded music. If any music provided through our platforms is found to lack necessary filings and/or approvals, we could be requested to cease providing such music or be subject to claims from third parties or penalties from the MOC or its local branches. See “D. Risk Factors— Risks Related to Our Corporate Structure—If the variable interest entities fail to obtain and maintain the requisite licenses and approvals required under the complex regulatory environment for internet-based businesses in China, our business, financial condition and results of operations in China may be adversely affected.” Moreover, the unauthorized posting of online music on our platforms by third parties may expose us to the risk of administrative penalties and intellectual property infringement lawsuits. See “D. Risk Factors—Risks Related to Our Business and Industry—We may face significant risks related to the content and communications on our platforms.” and “PRC Regulation—Intellectual Property Rights—Copyright.”

In 2011, the MOC greatly intensified its regulation of the provision of online music products. According to the series of Notices on Clearing Online Music Products that are in Violation of Relevant Regulations promulgated by the MOC since January 7, 2011, entities that provide any of the following will be subject to relevant penalties or sanctions imposed by the MOC: (a) online music products or relevant services without obtaining corresponding qualifications, (b) imported online music products that have not passed the content review of the MOC or (c) domestically developed online music products that have not been filed with the MOC. Thus far, we believe that we have eliminated from our platforms any online music products that may fall into the scope of those prohibited online music products thereunder.

Online Transmission of Audio-Visual Programs

According to the Administrative Provisions on Private Network and Targeted Publication of Audio-Visual Programs Services, or the Audio-Visual Provisions, which was promulgated by the SAPPRFT on April 25, 2016 and put into effect on June 1, 2016, to engage in the transmission and distribution of audio-visual programs, a License for the Online Transmission of Audio-Visual Programs is required. Foreign invested enterprises are not allowed to carry out such business.

On April 13, 2005, the State Council promulgated the Certain Decisions on the Entry of the Non-state-owned Capital into the Cultural Industry. On July 6, 2005, five PRC governmental authorities, including the MOC, the SARFT, the GAPP, the CSRC and the MOFCOM, jointly adopted the Several Opinions on Canvassing Foreign Investment into the Cultural Sector. According to these regulations, non-state-owned capital and foreign investors are not allowed to engage in the business of transmitting audio-visual programs through information networks.

To further regulate the provision of audio-visual program services to the public via the internet, including through mobile networks, within the territory of the PRC, the SARFT and the MIIT jointly promulgated the Administrative Provisions on Internet Audio-Visual Program Service, or the Audio-Visual Program Provisions, on December 20, 2007, which came into effect on January 31, 2008 and subsequently amended on August 28, 2015. Providers of internet audio-visual program services are required to obtain a License for Online Transmission of Audio-Visual Programs issued by SARFT, or complete certain registration procedures with SARFT. In general, providers of internet audio-visual program services must be either state-owned or state-controlled entities, and the business to be carried out by such providers must satisfy the overall planning and guidance catalog for internet audio-visual program service determined by SARFT. On May 21, 2008, SARFT issued a Notice on Relevant Issues Concerning Application and Approval of License for the Online Transmission of Audio-Visual Programs, and amended the Notice on August 28, 2015, which further sets out detailed provisions concerning the application and approval process regarding the License for Online Transmission of Audio-Visual Programs. On March 30, 2009, SARFT promulgated the Notice on Strengthening the Administration of the Content of Internet Audio-Visual Programs, which reiterates the pre-approval requirements for the audio-visual programs transmitted via the internet, including through mobile networks, where applicable, and prohibits certain types of internet audio-visual programs containing violence, pornography, gambling, terrorism, superstition or other similarly prohibited elements.

The Internet Audio-visual Program Services Categories (Provisional), or the Provisional Categories issued by the SARFT on March 17, 2010 and subsequently revised on March 10, 2017 classified internet audio-visual program services into four categories.

Administrative Measures for the Business Activities of Online Performances, or Online Performance Measures, was promulgated by the MOC on December 2, 2016 and became effective on January 1, 2017, regulating that the entity engaging in the operation of online performances shall establish content review system, and be staffed with qualified reviewers for self-censorship. Pursuant to Online Performance Measures, online performances shall not contain any illegal elements set forth in the Online Performance Measures. Once the online performances in violation of laws are found, the entity engaging in the operation of online performances shall immediately suspends the provision of such performance, and report relevant information to the authorized governmental departments.

Guangzhou Huaduo holds a valid License for Online Transmission of Audio-Visual Programs with the business classification of converging and play-on-demand service for certain kinds of audio-visual programs—literary, artistic and entertaining—as prescribed in the Provisional Categories.

Production of Radio and Television Programs

On July 19, 2004, the SARFT issued the Regulations on the Administration of Production of Radio and Television Programs, or the Radio and TV Programs Regulations, which become effective on August 20, 2004 and amended on August 28, 2015 and December 1, 2020. The Radio and TV Programs Regulations require any entity engaging in the production of radio and television programs to obtain a license for such businesses from the SARFT or its provincial branches. Entities with the License for Production and Operation of Radio and TV Programs must conduct their business operations strictly in compliance with the approved scope of production and operations and these entities (except radio and TV stations) must not produce radio and TV programs regarding current political news or similar subjects.

Guangzhou Huaduo holds an effective License for Production and Operation of Radio and TV Programs, covering the production, reproduction and publication of broadcasting plays, TV dramas, cartoons (excluding production), special subjects, special columns (excluding current political news category) and entertainment programs.

Regulation on Advertising Business and Conditions on Foreign Investment

The SAMR is the primary governmental authority regulating advertising activities in China. Regulations that apply to advertising business primarily include:

- Advertisement Law of the People's Republic of China, promulgated by the Standing Committee of the National People's Congress on October 27, 1994 and amended on April 24, 2015 which became effective since September 1, 2015, on October 26, 2018 and on April 29, 2021, respectively;

- Administrative Regulations for Advertising, promulgated by the State Council on October 26, 1987 and effective since December 1, 1987.

According to the above regulations, companies that engage in advertising activities must each obtain, from the SAMR or its local branches, a business license which specifically includes operating an advertising business in its business scope. An enterprise engaging in advertising business within the specifications in its business scope does not need to apply for an advertising operation license, provided that such enterprise is not a radio station, television station, newspaper or magazine publisher or any other entity otherwise specified in the relevant laws or administrative regulations. Enterprises conducting advertising activities without such license may be subject to penalties, including fines, confiscation of advertising income and orders to cease advertising operations. The business license of an advertising company is valid for the duration of its existence, unless the license is suspended or revoked due to a violation of any relevant laws or regulations.

Advertisers, advertising agencies, and advertising distributors are required to ensure that the content of the advertisements they prepare or distribute is true and in complete compliance with applicable laws. In providing advertising services, advertising operators and advertising distributors must review the supporting documents provided by advertisers for advertisements and verify that the content of the advertisements complies with applicable PRC laws and regulations. Prior to distributing advertisements that are subject to government censorship and approval, advertising distributors are obligated to verify that such censorship has been performed and approval has been obtained. Violation of these regulations may result in penalties, including fines, confiscation of advertising income, orders to cease dissemination of the advertisements and orders to publish an advertisement correcting the misleading information. Where serious violations occur, the SAMR or its local branches may revoke such offenders' licenses or permits for their advertising business operations.

On July 4, 2016, the SAIC issued the Interim Measures for the Administration of Internet Advertising, or the Internet Advertising Measures, which become effective on September 1, 2016. The Internet Advertising Measures specifically sets out the following requirements: (a) advertisements must be identifiable and marked with the word "advertisement" enabling consumers to distinguish them from non-advertisement information; (b) sponsored search results must be clearly distinguished from organic search results; (c) it is forbidden to send advertisements or advertisement links by email without the recipient's permission or induce Internet users to click on an advertisement in a deceptive manner; and (d) Internet information service providers who do not participate in the business activities of Internet advertising are required to stop publishing illegal advertisement only if they know or should have known the advertising is illegal.

On November 26, 2021, the SAMR promulgated the Measures for the Internet Advertisement Management Measures (Draft for Public Comments), which enhances oversight over internet advertising activities, covering all commercial advertising activities within the PRC for direct or indirect introduction of products or services promoted by business operators or service providers via websites, web pages, internet apps and other internet media in the form of text, pictures, audio, video or other forms. Pursuant to this draft, auto play-upon-open ads, video-insert ads and pop-up ads shall all be clearly marked with a "close" button in order to ensure that users can shut the ad with "one click." As of the date of this annual report, the Measures for the Internet Advertisement Management Measures (Draft for Public Comments) has not been formally adopted.

Regulation on Customs and Goods Export and Import

The Customs Law of the PRC was promulgated by the SCNPC on January 22, 1987 and came into effect on July 1, 1987, as amended on July 8, 2000, June 29, 2013, December 28, 2013, November 7, 2016, November 4, 2017 and April 29, 2021. Pursuant to the Customs Law, unless otherwise provided, the import and export goods shall be declaration by consignees and consignors themselves, or by their entrusted customs clearance agencies. In addition, the consignor or consignee of the goods exported or imported and the customs declaration enterprise shall fulfil recordation formalities for customs declaration. Failure to apply for recordation with relevant authorities may result in fines by the Customs.

On November 19, 2021, the GAC promulgated the Provisions on the Administration of Recordation of Customs Declaration Entities of the PRC, or the Provisions of Recordation of Customs Declaration Entities, which came into effect on January 1, 2022. Provisions of Recordation of Customs Declaration Entities clarified that a consignee or consignor of imported or exported goods or a customs declaration enterprise which have been recorded with the customs, or the customs declaration entities, may operate the business of customs declaration within the customs territory of the PRC. To complete the recordation formalities, the relevant customs declaration entity shall be a qualified market entity and a consignee or consignor of imported or exported goods shall complete an additional foreign trade operator recordation. The recordation information shall be published through the "Credit Publicity Platform of Import and Export Business of Customs of the People's Republic of China." Pursuant to the Announcement of Including the Recordation of Customs Declaration Entities in the Certificates Integrating Reform promulgated jointly by the GAC and the SAMR in December 20, 2021 which came into effect on January 1, 2022, application for recordation of the customs declaration entity is incorporated into the business registration with the market administration authority. Enterprises are not required to file another recordation application to the customs.

In addition, according to the Measures for the Recordation and Registration of Foreign Trade Operators promulgated by the MOFCOM on June 25, 2004 and amended respectively on August 18, 2016, November 30, 2019, and May 10, 2021, a foreign trade operator who engages in the import and export of goods shall go through the formalities for recordation and registration with the MOFCOM or an authority authorized by the MOFCOM. If a foreign trade operator fails to go through the aforesaid formalities for recordation and registration, the customs shall refuse to handle the declaration and clearance procedures of its imports and exports.

Intellectual Property Rights

Software

The State Council and the NCA have promulgated various rules and regulations relating to protection of software in China. According to these rules and regulations, software owners, licensees and transferees may register their rights in software with the SCB or its local branches and obtain software copyright registration certificates. Although such registration is not mandatory under PRC law, software owners, licensees and transferees are encouraged to go through the registration process and registered software rights to be entitled to better protections. For the number of software programs for which we had registered rights as of December 31, 2021, see "Item 4. Information on the Company—B. Business Overview—Intellectual Property."

Patents

The National People's Congress adopted the Patent Law of the People's Republic of China in 1984 and amended it in 1992, 2000, 2008 and 2020, respectively. The most recently amended Patent Law of the People's Republic of China, or the 2020 Patent Law came into force on June 1, 2021. A patentable invention, utility model or design must meet three conditions: novelty, inventiveness and practical applicability. Patents cannot be granted for scientific discoveries, rules and methods for intellectual activities, methods used to diagnose or treat diseases, animal and plant breeds or substances obtained by means of nuclear transformation. The Patent Office under the State Intellectual Property Office is responsible for receiving, examining and approving patent applications. According to the 2020 Patent Law, a patent is valid for a twenty-year term for an invention, a ten-year term for a utility model and a fifteen-year term for design, starting from the application date. Except under certain specific circumstances provided by law, any third-party user must obtain consent or a proper license from the patent owner to use the patent, or else the use will constitute an infringement of the rights of the patent holder. For the number of patents we had and the number of patent applications we made as of December 31, 2021, see "Item 4. Information on the Company—B. Business Overview—Intellectual Property."

Copyright

The Copyright Law of the People's Republic of China, or the Copyright Law, promulgated in 1990 and amended in 2001, 2010 and 2020. The most recently amended Copyright Law, or 2020 Copyright Law, took effect on June 1, 2021. The Copyright Law and its related implementing regulations, promulgated on May 30, 1991, and amended on August 2, 2002, January 8, 2011 and on January 30, 2013, respectively, are the principal laws and regulations governing the copyright related matters. The amended Copyright law covers internet activities, products disseminated over the internet and software products, among the subjects entitled to copyright protections. Registration of copyright is voluntary, and is administrated by the China Copyright Protection Center.

To further clarify some key internet copyright issues, on December 17, 2012, the PRC Supreme People's Court promulgated the Regulation on Several Issues Concerning Applicable Laws on Trial of Civil Disputes over the Infringement of Information Network Transmission Right, or the Information Network Transmission Right Infringement Regulation. The Information Network Transmission Right Infringement Regulation took effect on January 1, 2013, and replaced the Interpretations on Some Issues Concerning Applicable Laws for Trial of Disputes over Internet Copyright that was initially adopted in 2000 and subsequently amended in 2004 and 2006. The Information Network Transmission Right Infringement Regulation was amended on December 29, 2020 and came into effect on January 1, 2021. Under the Information Network Transmission Right Infringement Regulation, where an internet information service provider works in cooperation with others to jointly provide works, performances, audio and video products of which the right holders have information network transmission right, such behavior will constitute joint infringement of third parties' information network transmission right, and the PRC court shall order such internet information service provider to assume join liability for such infringement. The PRC court shall determine whether an internet information service provider is liable for abetting or contributory infringement according to its findings on the degree of fault of the internet information service provider. The fault of the internet information service provider is determined according to various criteria, including situations where such provider knew or should have known of the network user's infringement against third party's information network transmission right. If an internet information service provider can prove that it has only provided network services through automatic access, automatic transmission, data storage space, search functions, links, document sharing technology, etc., and thereby argues that it has not been involved in any alleged joint infringement, the PRC court shall find in favor of such internet information service provider. If an internet information service provider fails to take necessary measures, the PRC court shall find that it acknowledges such infringement.

Under the 2020 Copyright Law and its implementation rules, anyone infringing upon the copyrights of others is subject to various civil liabilities, which include stopping the infringement, eliminating the damages, apologizing to the copyright owners and compensating the copyright owners for such owners' actual or the income received by the offender as a result of the copyright infringement; or if such actual loss or income is in itself difficult to calculate, the relevant PRC court may decide the amount of the actual loss up to RMB 5,000,000 for each infringement.

An internet information service operator may be subject to cease-and-desist orders and other administrative penalties such as confiscation of illegal income and fines, if it is clearly aware of a copyright infringement through the internet or, although not aware of such infringement, it fails to take measures to remove relevant content upon receipt of the copyright owner's notice of infringement and, as a result, damages public interests.

On May 18, 2006, the State Council issued the Protection of the Right of Communication through Information Network, which took effect on July 1, 2006 and amended on January 30, 2013. Under this regulation, an internet information service provider may be exempt from indemnification liabilities under the certain circumstances.

We have adopted measures to mitigate copyright infringement risks. For instance, we have established a routine reporting and registration system that is updated on a monthly basis, and we require performers, channel owners and users to acknowledge and agree that (a) they would not perform or upload copyrighted content without proper authorization and (b) that they will indemnify us for any relevant copyright infringement claims in relation to their activities on our platforms.

If, despite these precautions, such procedures fail to effectively prevent unauthorized posting or use of copyrighted content or the infringement of other third-party rights on our platforms, and the PRC courts find that certain safe harbor exemptions under PRC laws are not applicable to us because, for instance, a court finds that we knew or should have known about such infringement or that we have directly derived economic benefits from allowing such infringement activities on our platforms, we may be held jointly and severally liable with the performers, channel owners or other infringement parties in lawsuits initiated by the relevant third-party copyright holders or authorized users. See "D. Risk Factors—Risks Related to Our Business and Industry—We have been and may be subject to intellectual property infringement, misappropriation or other claims or allegations in multiple jurisdictions, which could result in our payment of substantial damages, penalties and fines, removal of relevant content from our website or seeking license arrangements which may not be available on commercially reasonable terms."

Domain Name

The Measures for Administration of Domain Names, or the Domain Name Measures, was promulgated by the MIIT on August 24, 2017 and became effective on November 1, 2017. The MIIT is the major regulatory authority responsible for the administration of the PRC Internet domain names. The registration of domain names in PRC is on a "first-apply-first-registration" basis. A domain name applicant will become the domain name holder upon the completion of the application procedure. For the number of domain names we registered as of December 31, 2021, see "Item 4. Information on the Company—B. Business Overview—Intellectual Property."

Trademark

The PRC Trademark Law, adopted in 1982 and amended in 1993, 2001, 2013 and 2019, with its implementation rules adopted in 2002 and amended in 2014, protects registered trademarks. The Trademark Office of the SAIC (currently known as the Trademark Office of National Intellectual Property Administration) handles trademark registrations and grants a protection term of ten years to registered trademarks. Trademark license agreements must be filed with the Trademark Office for record. For the number of trademarks we had and trademark applications we had made as of December 31, 2021, see "Item 4. Information on the Company—B. Business Overview—Intellectual Property."

Internet Infringement

On May 28, 2020, the National People's Congress of the People's Republic of China promulgated the PRC Civil Code, which became effective on January 1, 2021. Under the Civil Code, an internet user or an internet service provider that infringes upon the civil rights or interests of others through using the internet assumes tort liability. If an internet user infringes upon the civil rights or interests of another through using the internet, the person being infringed upon has the right to notify and request the internet service provider to take necessary measures including the deletion, blocking or disconnection of an internet link. If, after being notified, the internet service provider fails to take necessary measures in a timely manner to end the infringement, it will be jointly and severally liable for any additional harm caused by its failure to act.

Regulation of Internet Content

The PRC government has promulgated measures relating to internet content through a number of governmental agencies, including the MIIT, the MOC and the GAPP. These measures specifically prohibit internet activities that result in the publication of any content which is found to contain, among others, propagate obscenity, gambling or violence, instigate crimes, undermine public morality or the cultural traditions of the PRC, or compromise state security or secrets. If an ICP license holder violates these measures, its ICP license may be revoked and its websites may be shut down by the relevant government agencies.

On December 15, 2019, the Cyberspace Administration of China promulgated the Provisions of Ecological Governance of Internet Information Content, which came into effect on March 1, 2020. Under this Provisions, an internet information content platform shall set up the mechanism of ecological governance of internet information content, develop the detailed rules for ecological governance of the internet information content on the platform and improve the systems of user registration, account management, information release and examination, etc. The platform shall set up the person in charge of the ecological governance of internet information content, equip itself with the professional personnel commensurate with the business scope and service scale, strengthen training and examination and improve the quality of practitioners, set up convenient channels for filing complaints and reports in prominent places and publish the ways of filing complaints and reports, and compile an annual report on the ecological governance of network information content. If an internet information content platform violates the provisions, the cyberspace authorities shall hold interviews, give warnings, order it to suspend information update, take measures including restricting it from engaging in internet information services, and impose online behavior restrictions and industry bans.

Information Security and Censorship

Internet content in China is regulated and restricted from a state security standpoint. The Decisions on Maintaining Internet Security which was enacted by the Standing Committee of the PRC National People’s Congress, or the SCNPC in December 2000 and amended in August 2009, may subject violators to criminal punishment in China for any effort to: (i) gain improper entry into a computer or system of strategic importance; (ii) disseminate politically disruptive information; (iii) leak state secrets; (iv) spread false commercial information; or (v) infringe intellectual property rights.

Internet companies in China are required to complete security filing procedures and regularly update information security and censorship systems for their websites with local public security bureau. The PRC Law on Preservation of State Secrets, which became effective on October 1, 2010 requires an internet information services providers to discontinue disseminating any information that may be deemed to be leaked state secrets and to report such incidents in a timely manner to the state security and public security authorities. Failure to do so in a timely and adequate manner may subject the internet information services providers to liability and certain penalties given by the Ministry of State Security, the Ministry of Public Security and/or the MIIT or their respective local branches.

On December 13, 2005, the Ministry of Public Security promulgated Provisions on Technological Measures for Internet Security Protection, or the Internet Protection Measures, which took effect on March 1, 2006. The Internet Protection Measures requires all internet information services operators to take proper measures including anti-virus, data back-up and other related measures, and keep records of certain information about their users (including user registration information, log-in and log-out time, IP address, content and time of posts by users) for at least 60 days and submit the above information as required by laws and regulations.

On June 22, 2007, the Ministry of Public Security, the State Secrecy Bureau, the State Cipher Code Administration and the Information Office of the State Council jointly promulgated the Circular on Printing and Distributing the Administrative Measures for the Graded Protection of Information Security. According to the Circular, the security protection grade of an information system may be classified into five grades. To newly build an information system of Grade II or above, its operator or user shall, within 30 days after it is put into operation, handle the record-filing procedures at the local public security organ at the level of municipality divided into districts or above of its locality.

The Internet Security Law of the People’s Republic of China, issued by the Standing Committee of the National People’s Congress on November 7, 2016 and became effective on June 1, 2017, emphasizes the implementation of classified protection with respect to Internet security. According to the Internet Security Law, Internet operators shall fulfill relevant mandatory security protection obligations.

The Administration Measures on the Security Protection of Computer Information Network with Internationally Connections, which was issued by the Ministry of Public Security in December 1997, and amended on January 8, 2011, prohibits using the internet in ways which, among others, result in a leakage of state secrets or a spread of socially destabilizing content. The Ministry of Public Security has supervision and inspection powers in this regard, and relevant local security bureaus may also have jurisdiction. If an ICP license holder violates these measures, the PRC government may revoke its ICP license and shut down its websites.

On December 28, 2012, the Standing Committee of the National People's Congress reiterated relevant rules on the protection of internet information by issuing the Decision on Strengthening the Protection of Network Information, or the 2012 Decision. The 2012 Decision distinctly clarified certain relevant obligations of the internet information service provider. Once it discovers any transmission or disclosure of information prohibited by the relevant laws and regulations, the internet information service provider shall stop transmission of such information, take measures such as elimination, keeping relevant record, and reporting to relevant authorities.

On June 28, 2016, the CAC promulgated the Provisions on the Administration of Mobile Internet Applications Information Services. According to this provisions, mobile internet application providers and internet application store service providers shall not use mobile internet applications to carry out illegal activities that endanger national security, disturb public order, and infringe upon others' lawful rights and interests, or use mobile internet apps to produce, copy, issue, or spread information contents prohibited by laws and regulations. On January 5, 2022, the CAC published the Draft for the Provisions on the Administration of Mobile Internet Applications Information Services for public comments. Pursuant to this draft, application providers and application distribution platforms shall perform the main responsibility for information content management, establish and improve management systems for information content security management, information content ecological governance, network data security, personal information protection, and minors protection to ensure information content security.

On July 12, 2021, the MIIT, the CAC and the Ministry of Public Security jointly issued the Notice on Issuing the Provisions on the Management of Security Vulnerabilities of Network Products, which requires that, among others, no organization or individual may use network product security vulnerabilities to engage in activities that endanger network security, and may not illegally collect, sell, or publish network product security vulnerability information, and network product providers, network operators and network product security vulnerability collection platforms shall establish and improve network product security vulnerability information receiving channels and keep them open, and keep network product security vulnerability information receiving logs for no less than 6 months.

On July 30, 2021, the State Council of the PRC promulgated the Provisions on Protection of the Security of Critical Information Infrastructure, which took effect on September 1, 2021. Pursuant to the Provisions on Protection of the Security of Critical Information Infrastructure, critical information infrastructure or the CII shall mean any important network facilities or information systems of the important industry or field such as public communication and information service, energy, communications, water conservation, finance, public services, e-government affairs and national defense science, which may endanger national security, people's livelihood and public interest in case of damage, function loss or data leakage. In addition, relevant administration departments of each critical industry and sector, which are referred to as the "Protection Departments," shall be responsible for formulating eligibility criteria and identifying the critical information infrastructure operator, or the CIIO, in the respective industry or sector. The CIIOs shall take the responsibility to protect the CII's security by performing certain prescribed obligations, including conducting network security test and risk assessment, reporting the assessment results to relevant regulatory authorities.

The Opinions on Further Compacting the Main Responsibility of the Website Platform on Information Content Management, issued by the CAC on September 15, 2021, further regulates the content and quality of the information, further requires the website platform to improve the content review mechanism, and strictly prohibits websites and platforms from producing and disseminating illegal information and require websites and platforms be responsible for determining how information content is displayed and shall ensure the security of information content. In addition, the website platform shall improve the manual content review system, further expand the scope of manual review, refine the review standards, improve the review process and ensure the quality of review. A dynamic update mechanism for the sample database of illegal and non-compliant information and a hierarchical classification system shall be established and regularly enriched and expanded to improve the efficiency and quality of technical review.

On September 17, 2021, the CAC and several other administrations jointly promulgated the Guiding Opinions on Strengthening the Comprehensive Governance of Network Information Service Algorithms. According to this opinions, enterprises shall establish an algorithm security accountability system and a system for the review of scientific and technological ethics, enhance the organizational structure for algorithm security, intensify efforts in the prevention of risks and the handling of risks, and increase the capacity and level in handling algorithm security emergencies. Enterprises shall also raise their awareness of responsibility and assume primary responsibilities for outcomes caused by the application of algorithms. On December 31, 2021, the CAC, together with the MIIT, the Ministry of Public Security and the SAMR, jointly issued the Administrative Provisions on Algorithm Recommendation of Internet Information Services, with effect from March 1, 2022, which provides that algorithm recommendation service providers are not allowed to use algorithms to register false user accounts, block information, give excessive recommendations, and that users should be given the option to easily turn off algorithm recommendation services.

To comply with the above laws and regulations, we have established an internet information security department to implement measures on information filtering. For example, we have adopted a voice monitor system, and installed on our platforms various alerts on sensitive words or abnormal activities of users, channels or groups. We also have a dedicated team that maintains 24-hour surveillance on the information posted on our platforms, with different categories for monitoring purposes, according to subject and content. We have also established and follow a strict review process and storage system of relevant records which, in combination with various information security measures, have effectively prevented the public dissemination of statutory prohibited information through our websites in the past. We intend to continue to further update our measurements and system and work closely with relevant authorities to avoid any violation of relevant laws and regulations in the future.

Privacy Protection

Pursuant to the Decision on Strengthening the Protection of Online Information and the Order for the Protection of Telecommunication and Internet User Personal Information issued by the MIIT on July 16, 2013 and became effective on September 1, 2013, any collection and use of user personal information must be subject to the consent of the user, abide by the principles of legality, rationality and necessity and be within the specified purposes, methods and scopes. An Internet information service provider must also keep such information strictly confidential, and is further prohibited from divulging, tampering or destroying any such information, or selling or providing such information to other parties. An Internet information service provider is required to take technical and other measures to prevent the collected personal information from any unauthorized disclosure, damage or loss. Any violation of these laws and regulations may subject the Internet information service provider to warnings, fines, confiscation of illegal gains, revocation of licenses, cancellation of filings, closedown of websites or even criminal liabilities.

Pursuant to the Interpretation of the Supreme People’s Court and the Supreme People’s Procuratorate on Several Issues regarding Legal Application in Criminal Cases Infringing upon the Personal Information of Citizens, which was issued on May 8, 2017 and took effect on June 1, 2017, the following activities may constitute the crime of infringing upon a citizen’s personal information: (i) providing a citizen’s personal information to specified persons or releasing a citizen’s personal information online or through other methods in violation of relevant national provisions; (ii) providing legitimately collected information relating to a citizen to others without such citizen’s consent (unless the information is processed, not traceable to a specific person and not recoverable); (iii) collecting a citizen’s personal information in violation of applicable rules and regulations when performing a duty or providing services; or (iv) collecting a citizen’s personal information by purchasing, accepting or exchanging such information in violation of applicable rules and regulations.

In addition, according to the General Provisions of the PRC Civil Code, promulgated by the National People’s Congress of the People’s Republic of China on May 28, 2020, which became effective on January 1, 2021, the personal information of a natural person shall be protected. Any organization or individual needing to obtain the personal information of others shall legally obtain and ensure the security of such information, and shall not illegally collect, use, process, or transmit the personal information of other persons, nor illegally buy, sell, provide, or publish the personal information of other persons.

Pursuant to the PRC Cyber Security Law issued by the SCNPC in November 2016, effective June 2017, personal information refers to all kinds of information recorded by electronic or otherwise that can be used to independently identify or be combined with other information to identify natural persons' personal information including, but not limited to, natural persons' names, dates of birth, ID numbers, biologically identified personal information, addresses and telephone numbers, etc. The Cyber Security Law also provides that: (i) to collect and use personal information, network operators shall follow the principles of legitimacy, rightfulness and necessity, disclose their rules of data collection and use, clearly express the purposes, means and scope of collecting and using the information, and obtain the consent of the persons whose data is gathered; (ii) network operators shall neither gather personal information unrelated to the services they provide, nor gather or use personal information in violation of the provisions of laws and administrative regulations or the scopes of consent given by the persons whose data is gathered; and shall dispose of personal information they have saved in accordance with the provisions of laws and administrative regulations and agreements reached with users; (iii) network operators shall not divulge, tamper with or damage the personal information they have collected, and shall not provide the personal information to others without the consent of the persons whose data is collected. However, if the information has been processed and cannot be recovered and thus it is impossible to match such information with specific persons, such circumstance is an exception.

On March 12, 2021, the CAC and other governmental authorities promulgated Necessary Personal Information Range Provisions of Common Types of Apps, effective on May 1, 2021, which specify the scope of necessary personal information for common types of mobile apps. On April 26, 2021, the MIIT promulgated Interim Provisions on the Administration of Personal Information Protection for Apps (Draft for Comments), which further stipulate the protection and management of the personal information on mobile apps. As of the date of this annual report, the Interim Provisions on the Administration of Personal Information Protection for Apps (Draft for Comments) has not been formally adopted.

In addition, the Identification Method of Illegal Collection and Use of Personal Information Through Apps jointly promulgated by the Secretary Bureau of the CAC, the General Office of the MIIT, the General Office of the Ministry of Public Security and the General Office of the SAMR in November 2019 provides guidance for the regulatory authorities to identify the illegal collection and use of personal information through mobile apps, and for the app operators to conduct self-examination and self-correction and for other participants to voluntarily monitor compliance. The Identification Method of Illegal Collection and Use of Personal Information Through Apps lists six types of acts conducted by app operators through app which may be identified as illegal, including, (i) failure to make public the rules of collection and use of personal information, (ii) failure to explicitly inform the purposes, methods and scope of collection and use of personal information; (iii) failure to obtain users' consent to collect and use their personal information; (iv) collection of personal information which is irrelevant to the services the app provides against the principle of necessity; (v) failure to obtain users' prior consent before providing users' personal information to the third parties; and (vi) failure to provide the function of deleting or correcting personal information in accordance with the laws and regulations, or failure to publish information such as ways for complaint and whistle-blowing.

On August 20, 2021, the SCNPC adopted the Personal Information Protection Law, which became effective on November 1, 2021. The Personal Information Protection Law reiterates the circumstances under which a personal information processor could process personal information and the requirements for such circumstances. The Personal Information Protection Law clarifies the scope of application, the definition of personal information and sensitive personal information, the legal basis of personal information processing and the basic requirements of notice and consent. According to the Personal Information Protection Law, where personal information is processed based on an individual's consent, such consent shall be voluntarily and explicitly given by the individual on a fully informed basis, and the individual shall have the right to withdraw his or her consent without affecting the effectiveness of personal information processing activities that have been conducted based on his or her consent before. Furthermore, the Personal Information Protection Law clarifies that personal information of minors under the age of fourteen is sensitive information, and such sensitive information may not be processed unless there are specific purposes and sufficient necessity and strict protection measures are taken.

On October 29, 2021, the draft Measures on Security Assessment of Cross-Border Transfer of Data was promulgated by the CAC, which stipulates that data processors shall make self-assessment of the risks before cross-border data transfer, and shall apply for security assessment for cross-border data transfer under certain circumstances. On November 14, 2021, the CAC published for public comment the Regulations on Cyber Data Security Management (Draft for Comments) or the Draft Cyber Data Security Regulations, which applies to activities relating to the use of networks to carry out data processing activities within the territory of the PRC and the requirement of cyber security review, including in case of data processors who process personal information of more than one million people seeking for listing abroad. As of the date of this annual report, there are uncertainties as to whether the draft Measures on Security Assessment of Cross-Border Transfer of Data and the Draft Cyber Data Security Regulations would be further amended, revised or updated and substantial uncertainties exist with respect to the enactment timetable and final content of such drafts.

On November 1, 2021, the MIIT published the Notice on the Implementation of Actions to Improve the Perception of Information and Communication Services, which stipulates that enterprises shall provide a list of personal information collected and a list of personal information shared with third parties, and shall display such lists in the second-level menu of the APP for users' access ("Dual Lists Obligation"). Furthermore, the Notice on the Implementation of Actions to Improve the Perception of Information and Communication Services requires certain enterprises as enumerated in its schedule to fulfill the Dual Lists Obligation by the end of 2021, but it does not provide a clear deadline for other enterprises.

On December 28, 2021, the CAC published the Revised Measures for Cyber Security Review, or the Revised CAC Measures, which became effective on February 15, 2022 and repeals the Measures for Cyber Security Review promulgated on April 13, 2020. The Revised CAC Measures provides that a CIIO purchasing network products and services, and platform operators carrying out data processing activities, which affect or may affect national security, shall apply for cyber security review and that a platform operator with more than one million users' personal information aiming to list abroad must apply for cyber security review.

We require our users to accept a user agreement and privacy policy whereby they agree to provide certain personal information to us. PRC laws and regulations prohibit internet content providers from disclosing any information transmitted by users through their networks to any third parties without their authorization unless otherwise permitted by law. If an internet content provider violates these regulations, the MIIT or its local bureaus may impose penalties and the internet content provider may be liable for damages caused to its users.

Anti-Monopoly Matters related to Internet Platform Companies

The PRC Anti-monopoly Law, which took effect on August 1, 2008, prohibits monopolistic conduct such as entering into monopoly agreements, abusing market dominance and concentration of undertakings that may have the effect of eliminating or restricting competition. On February 7, 2021, the Anti-monopoly Commission of the State Council officially promulgated the Guidelines to Anti-Monopoly in the Field of Internet Platforms, or the Anti-Monopoly Guidelines for Internet Platforms. Pursuant to an official interpretation from the Anti-monopoly Commission of the State Council, the Anti-Monopoly Guidelines for Internet Platforms mainly covers five aspects, including general provisions, monopoly agreements, abusing market dominance, concentration of undertakings, and abusion of administrative powers eliminating or restricting competition. The Anti-Monopoly Guidelines for Internet Platforms prohibits certain monopolistic acts of internet platforms operated in China so as to protect market competition and safeguard interests of users and undertakings participating in internet platform economy, including, without limitation, prohibiting platforms with dominant position from abusing their market dominance (such as discriminating customers in terms of pricing and other transactional conditions using big data and analytics, coercing counterparties into exclusivity arrangements, using technology means to block competitors' interface, favorable positioning in search results of goods displays, using bundle services to sell services or products, compulsory collection of unnecessary user data). In addition, the Anti-monopoly Guidelines for Internet Platforms also reinforces antitrust merger review for internet platform related transactions to safeguard market competition.

Regulation of Foreign Currency Exchange and Dividend Distribution

Foreign Currency Exchange. The core regulations governing foreign currency exchange in China are the Foreign Exchange Administration Regulations, as amended in August 2008, or the FEA Regulations. Under the FEA Regulations, the Renminbi is freely convertible for current account items, including the distribution of dividends, interest payments, trade- and service-related foreign exchange transactions, but not for capital account items, such as direct investments, loans, repatriation of investments and investments in securities outside of China, unless the prior approval of the SAFE is obtained and prior registration with the SAFE is made.

On March 30, 2015, SAFE issued the Circular on the Reforming of the Management Method of the Settlement of Foreign Currency Capital of Foreign-Invested Enterprises, or SAFE Circular 19, which took effect on June 1, 2015. Under SAFE Circular 19, a foreign-invested enterprise, within the scope of business, may also choose to convert its registered capital from foreign currency to RMB on a discretionary basis, and the RMB capital so converted can be used for equity investments within PRC, which will be regarded as the reinvestment of foreign-invested enterprise.

SAFE promulgated the Notice of the State Administration of Foreign Exchange on Reforming and Standardizing the Foreign Exchange Settlement Management Policy of Capital Account, or Circular 16, effective on June 9, 2016. Circular 16 provides that discretionary foreign exchange settlement applies to foreign exchange capital, foreign debt offering proceeds and remitted foreign listing proceeds, and the corresponding RMB capital converted from foreign exchange are not restricted from extending loans to related parties or repaying the inter-company loans (including advances by third parties).

In January 2017, SAFE promulgated the Circular on Further Improving Reform of Foreign Exchange Administration and Optimizing Genuineness and Compliance Verification, or Circular 3, which stipulates several capital control measures with respect to the outbound remittance of profit from domestic entities to offshore entities, including (i) under the principle of genuine transaction, banks shall check board resolutions regarding profit distribution, the original version of tax filing records and audited financial statements; and (ii) domestic entities shall hold income to account for previous years' losses before remitting the profits. Moreover, pursuant to Circular 3, domestic entities shall make detailed explanations of the sources of capital and utilization arrangements, and provide board resolutions, contracts and other proof when completing the registration procedures in connection with an outbound investment.

Dividend Distribution. The principal regulations governing distribution of dividends paid by wholly foreign-invested enterprises include the PRC Company Law, promulgated in 1993 and amended in 2004, 2005, 2013 and 2018, and the Foreign Investment Law and its Implementation Rules.

Under these regulations, a wholly foreign-invested enterprise in China, or a WFOE, may pay dividends only out of its accumulated profits, if any, determined in accordance with PRC accounting standards and regulations. In addition, a WFOE is required to allocate at least 10% of its accumulated profits each year, if any, to statutory reserve funds unless its reserves have reached 50% of the registered capital of the enterprises. These reserves are not distributable as cash dividends. The proportional ratio for withdrawal of rewards and welfare funds for employees shall be determined at the discretion of the WFOE. Profits of a WFOE shall not be distributed before the losses thereof before the previous accounting years have been made up. Any undistributed profit for the previous accounting years may be distributed together with the distributable profit for the current accounting year.

Circular 37. Pursuant to SAFE's Notice on Relevant Issues Relating to Domestic Residents' Investment and Financing and Round-Trip Investment through Special Purpose Vehicles, or SAFE Circular 37, issued and effective on July 4, 2014, and its appendixes, PRC residents, including PRC institutions and individuals, must register with local branches of SAFE in connection with their direct establishment or indirect control of an offshore entity, for the purpose of overseas investment and financing, with such PRC residents' legally owned assets or equity interest in domestic enterprises or offshore assets or interests, referred to in SAFE Circular 37 as a "special purpose vehicle." SAFE Circular 37 further requires amendment to the registration in the event of any significant changes with respect to the special purpose vehicle, such as increase or decrease of capital contributed by PRC individuals, share transfer or exchange, merger, division or other material event. SAFE promulgated the Notice on Further Simplifying and Improving the Administration of the Foreign Exchange Concerning Direct Investment in February 2015, which took effect on June 1, 2015, which amended SAFE Circular 37 requiring PRC residents or entities to register with qualified banks rather than SAFE or its local branch in connection with their establishment or control of an offshore entity established for the purpose of overseas investment or financing.

In the event that a PRC shareholder holding interests in a special purpose vehicle fails to fulfill the required SAFE registration, the PRC subsidiaries of that special purpose vehicle may be prohibited from making distributions of profit to the offshore parent and from carrying out subsequent cross-border foreign exchange activities and the special purpose vehicle may be restricted in their ability to contribute additional capital into its PRC subsidiary. Further, failure to comply with the various SAFE registration requirements described above could result in liability under PRC law for foreign exchange evasion. These regulations apply to our direct and indirect shareholders who are PRC residents and may apply to any offshore acquisitions and share transfer that we make in the future if our shares are issued to PRC residents. See "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—PRC regulations relating to offshore investment activities by PRC residents may limit our PRC subsidiaries' ability to increase their registered capital or distribute profits to us or otherwise expose us to liability and penalties under PRC law."

We have completed the foreign exchange registration of PRC resident shareholders of Guangzhou Huaduo, as required by SAFE Circular 37, for our financings that were completed before the end of 2010. The SAFE Circular 37 registration in relation to the issuance of common shares to Tiger Global Six YY Holdings was completed on February 6, 2012. Our PRC resident shareholders further updated their SAFE Circular 37 registrations in March 2015 to reflect shareholding changes in our company resulting from our initial public offering.

Stock Option Rules. The Administration Measures on Individual Foreign Exchange Control were promulgated by the PBOC on December 25, 2006, and their Implementation Rules, issued by the SAFE on January 5, 2007, became effective on February 1, 2007 and amended on May 29, 2016. Under these regulations, all foreign exchange matters involved in employee stock ownership plans and stock option plans participated in by onshore individuals, among others, require approval from the SAFE or its authorized branch. Furthermore, the Notices on Issues concerning the Foreign Exchange Administration for Domestic Individuals Participating in Stock Incentive Plans of Overseas Publicly-Listed Companies, or the Stock Option Rules, were promulgated by SAFE on February 15, 2012, that replaced the Application Procedures of Foreign Exchange Administration for Domestic Individuals Participating in Employee Stock Ownership Plans or Stock Option Plans of Overseas Publicly-Listed Companies issued by SAFE on March 28, 2007. Pursuant to the Stock Option Rules, PRC residents who are granted shares or stock options by companies listed on overseas stock exchanges based on the stock incentive plans are required to register with SAFE or its local branches, and PRC residents participating in the stock incentive plans of overseas listed companies shall retain a qualified PRC agent, which could be a PRC subsidiary of such overseas publicly-listed company or another qualified institution selected by such PRC subsidiary, to conduct the SAFE registration and other procedures with respect to the stock incentive plans on behalf of these participants. Such participants must also retain an overseas entrusted institution to handle matters in connection with their exercise of stock options, purchase and sale of corresponding stocks or interests, and fund transfer. In addition, the PRC agents are required to amend the SAFE registration with respect to the stock incentive plan if there is any material change to the stock incentive plan, the PRC agents or the overseas entrusted institution or other material changes. The PRC agents shall, on behalf of the PRC residents who have the right to exercise the employee share options, apply to SAFE or its local branches for an annual quota for the payment of foreign currencies in connection with the PRC residents' exercise of the employee share options. The foreign exchange proceeds received by the PRC residents from the sale of shares under the stock incentive plans granted and dividends distributed by the overseas listed companies must be remitted into the bank accounts in the PRC opened by the PRC agents before distribution to such PRC residents. In addition, the PRC agents shall file each quarter the form for record-filing of information of the Domestic Individuals Participating in the Stock Incentive Plans of Overseas Listed Companies with SAFE or its local branches.

We and our PRC citizen employees who have been granted share options, restricted shares or restricted share units, or PRC optionees, are subject to the Stock Option Rules. If we or our PRC optionees fail to comply with the Individual Foreign Exchange Rule and the Stock Option Rules, we and/or our PRC optionees may be subject to fines and other legal sanctions. See "D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—PRC regulations relating to offshore investment activities by PRC residents may limit our PRC subsidiaries' ability to increase their registered capital or distribute profits to us or otherwise expose us to liability and penalties under PRC law."

In addition, the State Administration for Taxation has issued circulars concerning employee share options, under which our employees working in the PRC who exercise share options will be subject to PRC individual income tax. Our PRC subsidiaries have obligations to file documents related to employee share options with relevant tax authorities and to withhold individual income taxes of those employees who exercise their share options. If our employees fail to pay or if we fail to withhold their income taxes as required by relevant laws and regulations, we may face sanctions imposed by the PRC tax authorities or other PRC government authorities.

Regulation on Tax

PRC Enterprise Income Tax

The PRC enterprise income tax is calculated based on the taxable income determined under the applicable the PRC Enterprise Income Tax Law, or the EIT Law and its implementation rules. On March 16, 2007, the National People's Congress of China enacted the EIT Law, which became effective on January 1, 2008 and subsequently amended on February 24, 2017 and on December 29, 2018. On December 6, 2007, the State Council promulgated the implementation rules to the EIT Law, which also became effective on January 1, 2008 and amended on April 23, 2019. The EIT Law imposes a uniform enterprise income tax rate of 25% on all resident enterprises in China, including foreign-invested enterprises and domestic enterprises, unless they qualify for certain exceptions, and terminates most of the tax exemptions, reductions and preferential treatment available under the previous tax laws and regulations. According to the EIT Law and relevant regulations, subject to the approval of competent tax authorities, the income tax of an enterprise that has been determined to be a high and new technology enterprise shall be reduced to a preferential rate of 15%.

Moreover, under the EIT Law, enterprises organized under the laws of jurisdictions outside China with their “de facto management bodies” located within China may be considered PRC resident enterprises and are therefore subject to PRC enterprise income tax at the rate of 25% on their worldwide income. Though the implementation rules of the EIT Law define “de facto management bodies” as “establishments that carry out substantial and overall management and control over the manufacturing and business operations, personnel, accounting, properties, etc. of an enterprise,” the main guidance currently available for the definition of “de facto management body” as well as the determination of offshore incorporated PRC tax resident status and its administration are set forth in the Notice Regarding the Determination of Chinese-Controlled Overseas Incorporated Enterprises as PRC Tax Resident Enterprise on the Basis of De Facto Management Bodies, or Circular 82, and the Administrative Measures for Enterprise Income Tax of Chinese-Controlled Offshore Incorporated Resident Enterprises (Trial) or SAT Bulletin No. 45, both issued by the SAT, which provide main guidance on the administration as well as determination of the tax residency status of a Chinese-controlled offshore-incorporated enterprise, defined as an enterprise that is incorporated under the law of a foreign country or territory and that has a PRC company or PRC corporate group as its primary controlling shareholder.

According to Circular 82, a Chinese-controlled offshore-incorporated enterprise will be regarded as a PRC tax resident by virtue of having its “de facto management body” in China and will be subject to PRC enterprise income tax on its global income only if certain conditions set forth in Circular 82 are met.

In addition, Bulletin No. 45 provides clarification on the resident status determination, post-determination administration, and competent tax authorities. It also specifies that when provided with a copy of PRC resident determination certificate from a resident Chinese-controlled offshore-incorporated enterprise, the payer should not withhold 10% income tax when paying certain PRC-sourced income such as dividends, interest and royalties to the Chinese-controlled offshore-incorporated enterprise.

Although we do not believe that our company should be treated as a PRC resident enterprise for PRC tax purposes, substantial uncertainty exists as to whether we will be deemed to be such by the relevant authorities. In the event that we are considered a PRC resident enterprise, we would be subject to the PRC enterprise income tax at the rate of 25% on our worldwide income. See “D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—Under the PRC enterprise income tax law, we may be classified as a PRC “resident enterprise,” which could result in unfavorable tax consequences to us and our shareholders and have a material adverse effect on our results of operations and the value of your investment.”

In addition, although the EIT Law provides that dividend income between “qualified resident enterprises” is exempted income, and the Implementation Rules refer to “qualified resident enterprises” as enterprises with “direct equity interest,” it is unclear whether dividends we receive from our PRC subsidiaries are eligible for exemption.

According to the Notice on Strengthening Administration of Enterprise Income Tax for Share Transfers by Non-PRC Resident Enterprises issued by the PRC State Administration of Taxation on December 10, 2009, with retroactive effect from January 1, 2008, or SAT Circular 698, and the Notice on Several Issues Concerning Enterprise Income Tax for Indirect Share Transfer by Non-PRC Resident Enterprises, issued by the PRC State Administration of Taxation on February 3, 2015, or SAT Circular 7, an "indirect transfer" of assets of a PRC resident enterprise, including equity interests in a PRC resident enterprise, by non-PRC resident enterprises may be re-characterized and treated as a direct transfer of PRC taxable properties, if such transaction arrangement lacks of reasonable commercial purpose and was established for the purpose of reducing, avoiding or deferring PRC enterprise income tax. As a result, gains derived from such indirect transfer may be subject to PRC enterprise income tax, and tax filing or withholding obligations may be triggered, depending on the nature of the PRC taxable properties being transferred. In respect of an indirect offshore transfer of assets of a PRC establishment or place of business of a foreign enterprise, the resulting gain is to be included with the annual enterprise filing of the PRC establishment or place of business being transferred, and would consequently be subject to PRC enterprise income tax at a rate of 25%. Where the underlying transfer relates to PRC real properties or to equity investments in a PRC resident enterprise, which is not related to a PRC establishment or place of business of a non-resident enterprise, a PRC enterprise income tax at 10% would apply, subject to available preferential tax treatment under applicable tax treaties or similar arrangements, and the party who is obligated to make the transfer payments has the withholding obligation. Where the payor fails to withhold any or sufficient tax, the transferor shall declare and pay such tax to the competent tax authority by itself within the statutory time limit. Late payment of applicable tax will subject the transferor to default interest. Currently, neither SAT Circular 698 nor SAT Circular 7 applies to transactions of sale of shares by investors through a public stock exchange where such shares were acquired from a transaction through a public stock exchange. In October 2017, SAT issued the Announcement on Issues Relating to Withholding at Source of Income Tax of Nonresident Enterprises, or SAT Circular 37, effective December 2017, superseded the Non-resident Enterprises Measures and SAT Circular 698 as a whole and partially amended some provisions in SAT Circular 7. Specifically, SAT Circular 37 provides that where the transfer income subject to withholding at source is derived by a non-PRC resident enterprise in instalments, the instalments may first be treated as recovery of costs of previous investments. Upon recovery of all costs, the tax amount to be withheld must then be computed and withheld.

We cannot assure you that the PRC tax authorities will not, at their discretion, adjust any capital gains and impose tax return filing and withholding or tax payment obligations on the transferors and transferees, while our PRC subsidiaries may be requested to assist in the filing. Any PRC tax imposed on a transfer of our shares or any adjustment of such gains would cause us to incur additional costs and may have a negative impact on the value of your investment in us.

Value Added Tax

On January 1, 2012, the State Administration of Taxation officially launched a pilot VAT reform program ("Pilot Program"), applicable to businesses in selected industries. Taxable income derived from the businesses in the Pilot Program is subject to VAT in lieu of business tax. The Pilot Program initially applied only to transportation industry and "modern service industries" ("Pilot Industries") in Shanghai in 2011 and expanded to eight trial regions (including Beijing and Guangdong province) and nationwide progressively from August to December 2012.

On March 23, 2016, the Ministry of Finance and the SAT issued the Notice of Taxation on Implementing the Pilot Program of Replacing Business Tax with Value-Added Tax in an All-round Manner, pursuant to which the pilot plan for the replacement of business tax with VAT was expanded to all regions and industries as of May 1, 2016.

Cultural Development Fee

According to applicable PRC tax regulations or rules, advertising service providers are generally required to pay a cultural development fee at the rate of 3% on the revenues (a) which are generated from providing advertising services and (b) which are also subject to VAT after the VAT reform program.

Dividends Withholding Tax

Pursuant to the EIT Law and its implementation rules, dividends generated after January 1, 2008 and distributed to us by our PRC subsidiaries are subject to withholding tax at a rate of 10%, unless otherwise exempted or reduced according to treaties or arrangements between the PRC central government and governments of other countries or regions where the non-PRC-resident holding enterprises are incorporated.

As uncertainties remain regarding the interpretation and implementation of the EIT Law and its implementation rules, we cannot assure you that, if we are deemed a PRC resident enterprise, any dividends to be distributed by us to our non-PRC shareholders and ADS holders would not be subject to any PRC withholding tax. See "D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—Under the PRC enterprise income tax law, we may be classified as a PRC "resident enterprise," which could result in unfavorable tax consequences to us and our shareholders and have a material adverse effect on our results of operations and the value of your investment."

Labor Laws and Social Insurance

The principle laws that govern employment include:

- Labor Law of the People's Republic of China, promulgated by the Standing Committee of the National People's Congress on July 5, 1994, effective since January 1, 1995 and amended on August 27, 2009 and on December 29, 2018, respectively; and

- Labor Contract Law of the People's Republic of China, promulgated by the Standing Committee of the National People's Congress on June 29, 2007 and amended on December 28, 2012.

According to the Labor Law and Labor Contract Law, employers must execute written labor contracts with full-time employees. All employers must compensate their employees with wages equal to at least the local minimum wage standards. All employers are required to establish a system for labor safety and sanitation, strictly comply with state rules and standards and provide employees with workplace safety training. Violations of the Labor Contract Law and the Labor Law may result in the imposition of fines and other administrative penalties. For serious violations, criminal liability may arise.

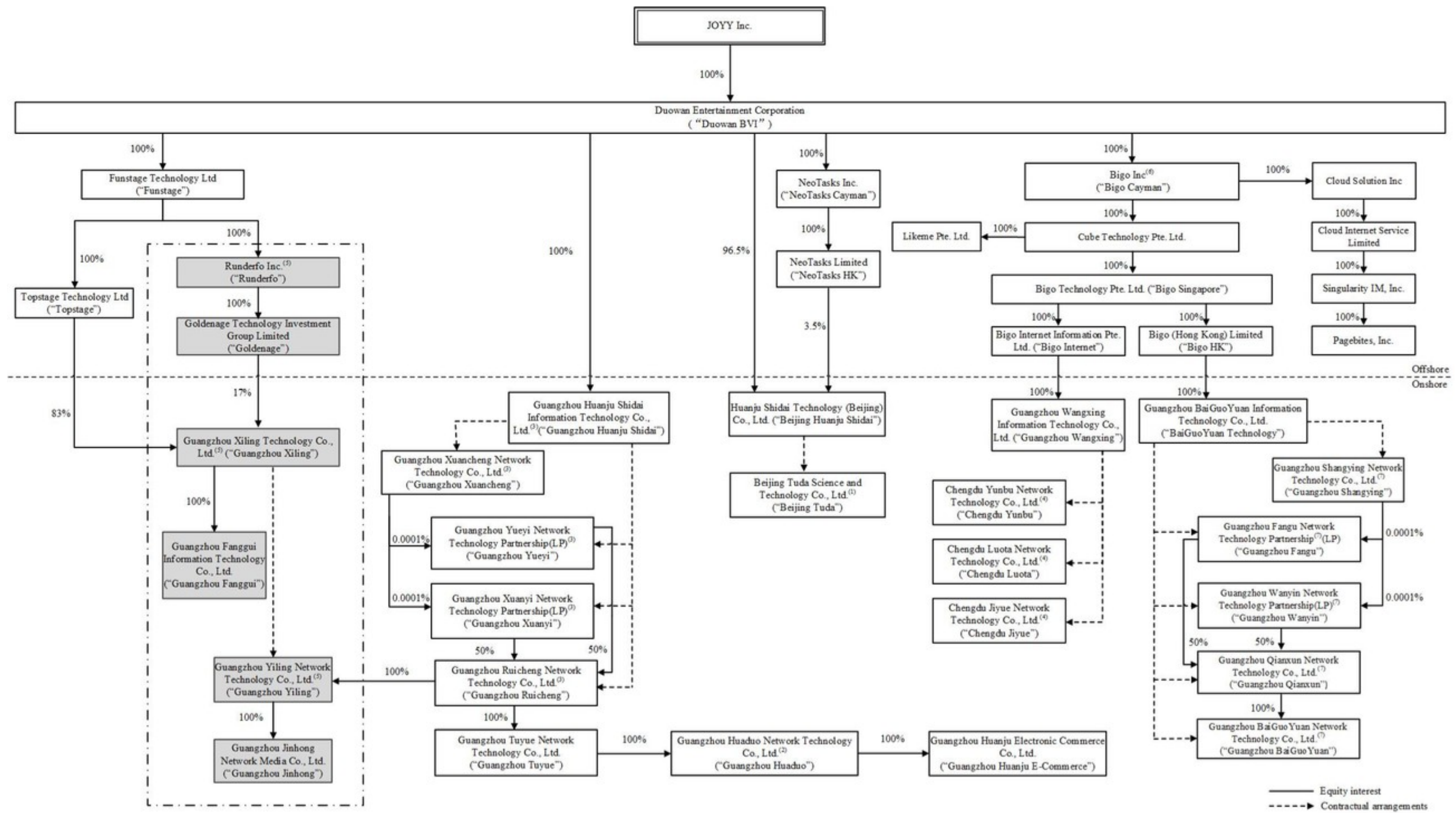
The Law on Social Insurance of the PRC, which was promulgated in October 28, 2010, effectively July 1, 2011 and amended on December 29, 2018, has consolidated pertinent provisions for basic pension insurance, unemployment insurance, maternity insurance, workplace injury insurance and basic medical insurance and has elaborated in detail the legal obligations and liabilities of employers who do not comply with relevant laws and regulations on social insurance. Pursuant to the Reform Plan for Collection and Management System of National and Local Taxes released by General Office of the Communist Party of China and the State Council on July 20, 2018, all social insurance premiums, such as basic pension insurance premium, basic medical insurance premium, unemployment insurance premium, work-related injury insurance premium and maternity insurance premium, shall be collected uniformly by the relevant tax authorities starting from January 1, 2019.

We have caused all of our full-time employees to enter into written labor contracts with us and have provided and currently provide our employees with the proper welfare and employment benefits.

C. Organizational Structure

Corporate Structure

The following diagram illustrates our corporate structure as of the date of this annual report, including our principal subsidiaries and the variable interest entities and their principal subsidiaries:



(1) Beijing Tuda is a variable interest entity. Mr. David Xueling Li, our co-founder, chairman and chief executive officer and director, owns 97.7% of Beijing Tuda's equity interests, and two individuals unaffiliated with us collectively own the remaining 2.3% of Beijing Tuda's equity interests, as of the date of this annual report. For a detailed description of the contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements with Beijing Tuda."

(2) Guangzhou Huaduo used to be a varialbe interest entity that we controlled through contractual arrangements till April 1, 2022. Guangzhou Tuyue currently owns all equity interests of Guangzhou Huaduo. Guangzhou Tuyue is indirectly held by selected individuals of JOYY Inc. (or the management) who are PRC citizens through PRC limited partnership jointly established by these individuals. For a detailed description of the contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions —Contractual Arrangements with Guangzhou Huaduo."

(3) Each of Guangzhou Xuancheng, Guangzhou Yueyi, Guangzhou Xuanyi, and Guangzhou Ruicheng is a variable interest entity, as of the date of this annual report. For a detailed description of the contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements with Guangzhou Xuancheng, Guangzhou Yueyi, Guangzhou Xuanyi, and Guangzhou Ruicheng."

(4) Each of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue is a variable interest entity, as of the date of this annual report. Two individuals from the senior management team of Bigo collectively own all equity interest of each of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, respectively. For a detailed description of the contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions—Contractual Arrangements with Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue."

(5) On November 16, 2020, we entered into definitive agreements with Baidu, Inc., or Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu agreed to acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. In August 2021, December 2021 and April 2022, we and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties.

(6) In March 2019, we completed the acquisition of the remaining 68.3% equity interest in Bigo from the other shareholders of Bigo. Upon the completion of the acquisition, we hold 100% shares of Bigo, and Bigo is our wholly owned subsidiary.

(7) Each of Guangzhou Shangying, Guangzhou Fangu, Guangzhou Wanyin, Guangzhou Qianxun, and Guangzhou BaiGuoYuan is a variable interest entity, as of the date of this annual report. For a detailed description of the contractual arrangements, see "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions— Contractual Arrangements."

D. Property, Equipment and Land Use Right

Our corporate headquarters is located in 30 Pasir Panjang Road #15-31A Mapletree Business City, Singapore 117440. We have leased office space with an aggregate area of 91,338 square meters, and we owned several buildings in China, with an aggregate area of 64,754 square meters.

The corporate headquarters of Bigo are located at the same premises in Singapore. Bigo also has local offices in China, United States, United Kingdom, and many other regions. As of the date of this annual report, Bigo has leased office space with an aggregate area of 77,296 square meters, of which 31,222 square meters are in Guangzhou and the remainder in other cities within and outside China. Bigo's physical servers are primarily hosted at internet data centers owned by major international internet data center providers hosted outside China.

The headquarters of our PRC subsidiaries is located in Panyu District, Guangzhou, China, which comprises 37,548 square meters. We acquired a building in Zhuhai in October 2017 as branch office, which comprises 27,206 square meters. We also acquired the use right of a parcel of land located in Guangzhou in August 2015 and another one in Foshan in April 2021. Our capital commitment in connection with the construction of buildings located on the parcels of lands to which we acquired use right was US$66.5 million as of December 31, 2021. We currently expect to complete the planned construction in Guangzhou and Foshan in 2023 and 2025, respectively.

We believe that our existing facilities, including facilities under construction, are sufficient for our current and prospective needs in the foreseeable future and we will obtain adequate facilities, principally through leasing, to accommodate our future expansion plans.

See Notes 13 and 14 to our financial statements for further information about our property and equipment and land use right.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the related notes included elsewhere in this annual report. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Item 3. Key Information—D. Risk Factors" and elsewhere in this annual report.

A. Operating Results

Overview

We operate leading global online social entertainment platforms, offering users around the world a uniquely engaging and immersive experience across various video-based content categories, such as live streaming, short-form video and video communication. Our global average mobile monthly active users reached 280 million in the fourth quarter of 2021, including 32.2 million of average monthly active users of Bigo Live, 67.0 million of average monthly active users of Likee, 9.5 million of average monthly active users of Hago, and 171.3 million of average monthly active users of imo.

Since our inception in 2005, we have incubated, developed, and monetized several social entertainment products and platforms in China, and accumulated deep expertise in building and operating vibrant video-based social entertainment platforms. With our business model tested first in China, foreseeing the massive global opportunities, we began to expand our global business first by investing in Bigo in 2014, followed by the internationalization of *Hago*, and by acquiring Bigo in March 2019. Today, our products and platforms are available in more than 150 countries, and our users are spread across the globe, including North America, Europe, the Middle East, Southeast Asia, Eastern Pacific regions, and others.

Our business model optimizes the seamless integration of traffic generation, user engagement and monetization. While the basic use of our platforms is currently free to attract traffic, we monetize our user base mainly through virtual tips for live streaming. We derive our revenues primarily from live streaming services, accounting for 85.4%, 94.7% and 94.6% of our total net revenues in 2019, 2020 and 2021, respectively. We have been exploring additional monetization opportunities and diversifying our revenue sources in order to capitalize on the large and highly engaged user base of our platforms. We generate other revenues mainly from advertising services, and to a lesser extent, our online game business, memberships and other services. Such other revenues accounted for 14.6%, 5.3% and 5.4% of our total net revenues in 2019, 2020 and 2021, respectively.

On April 3, 2020 and August 10, 2020, we transferred 16,523,819 and 30,000,000 Class B ordinary shares of Huya to Linen Investment Limited, a wholly-owned subsidiary of Tencent respectively. As a result of the closing of the share transfer, we would hold 38,374,463 Class B ordinary shares of Huya with Tencent becoming the controlling shareholder of Huya, and Tencent will consolidate financial statements of Huya. Starting from the second quarter of 2020, we no longer consolidate the operating results of Huya into our financial statements, and Huya's historical financial results are and will be reflected in our consolidated financial statements as discontinued operations accordingly.

On November 16, 2020, we entered into definitive agreements with Baidu, Inc., or Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu agreed to acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. Subsequently, the sale was substantially completed as of February 8, 2021, with certain customary matters remaining to be completed in the future, including necessary regulatory approvals from government authorities. As a result, the historical results of YY Live are reflected in the Company's financial statements as discontinued operations, and accordingly, we ceased consolidation of YY Live business since February 8, 2021.

Historically, we presented our financial results in Renminbi. Starting from January 1, 2021, we changed our reporting currency from Renminbi to U.S. dollars since a majority of our revenues and expenses are now denominated in U.S. dollars. We believe the alignment of the reporting currency with the primary functional currency of underlying operations would better illustrate our results of operations for each period. We have applied the change of reporting currency retrospectively to our historical results of operations and financial statements included in this annual report.

The COVID-19 outbreak may have some impact on our results of operations, and the full extent of the impact will depend on future developments that are highly uncertain and cannot be predicted.

Discussion of Selected Statements of Operations Items

Revenues

Our live streaming revenues are primarily comprised of revenues from Bigo Live, Likee, Hago and imo. Other revenues primarily include advertising revenues, and to a lesser extent revenues from online games, membership, online education, and financing income. Starting from the second quarter of 2020, we no longer consolidate the results of operations of Huya. The historical results of YY Live are reflected in the Company's financial statements as discontinued operations.

The following table sets forth the principal components of our total net revenues by amount and as a percentage of our total net revenues for the periods presented.

.	For the Year Ended December 31,					
	2019		2020		2021	
	US$	% of total net revenues	US$	% of total net revenues	US$	% of total net revenues
	(in thousands, except for percentages)					
Live streaming	769,148	85.4	1,815,826	94.7	2,476,790	94.6
Others	131,554	14.6	102,318	5.3	142,261	5.4
Total net revenues (1)	900,702	100.0	1,918,144	100.0	2,619,051	100.0

(1) Revenues are presented net of rebates and discounts.

Live streaming revenues. We generate live streaming revenues from the sales of in-channel virtual items used on our live streaming platforms. Users access content on our platforms free of charge, but are charged for purchases of virtual items.

The most significant factors that directly affect our live streaming revenues include the number of our paying users and ARPU. Our management regularly monitor these operating metrics, which are important and direct performance indicators, in managing our live streaming business and in making relevant operational and production decisions.

- *The number of paying users.* In 2021, Bigo (including Bigo Live, Likee and imo) had 3.8 million paying users for our livestreaming services. We calculate the number of paying users during a given period as the cumulative number of registered user accounts that have purchased virtual items or other products and services on the above mentioned platforms at least once during the relevant period.

- *ARPU.* In 2021, Bigo's (including Bigo Live, Likee and imo) ARPU for live streaming was US$509. ARPU is calculated by dividing our total revenues from live streaming on the above mentioned platforms during a given period by the number of paying users for our live streaming services on the above mentioned platforms for that period. As we begin to generate revenues from an increasing variety of live streaming services, our ARPU may fluctuate from period to period due to the mix of live streaming services purchased by our paying users.

Other significant factors that directly or indirectly affect our live streaming revenues include:

- our ability to increase our popularity by offering new and attractive contents, products and services that allow us to monetize our live streaming platform;

- our ability to attract and retain a large and engaged user base;
- our ability to attract and retain certain popular performers, agencies and channel owners; and
- fluctuations in the exchange rates of foreign currency in which the revenue we earn is denominated.

We create and offer to users virtual items that can be used on various channels. Users can purchase consumable virtual items from us to show support for their favorite performers or time-based virtual items that provide users with recognized status, such as priority speaking rights or special symbols on the music and entertainment channels.

Other revenues. We generate other revenues mainly from advertising services, and to a lesser extent, our online game business, memberships and other services.

(i) *Advertising revenues*. Advertising revenues were generated from sales of various forms of advertising and provision of promotion campaigns on our live streaming platforms.

(ii) *Online games revenues*. We generate online games revenues from the sales of in-game virtual items used for games developed by us or by third parties under revenue-sharing arrangements on our platforms. Users play online games free of charge, but are charged for purchases of virtual items. The online games we currently offer are primarily web games that can be run from an internet browser and require an internet connection to play.

(iii) *Membership revenues*. We generated membership revenues from the membership subscription fees paid by our users. In our membership program, users pay a flat monthly subscription fee in order to become members, and in exchange, we give them access to various privileges and enhanced features on our channels, including virtual items exclusively available to members, dedicated customer services and priority entrance to certain live performances.

(iv) *Others*. We generated other revenues from our online education, e-commerce, and financing business. Online education service consists of vocational training, language training and K-12 afterschool education courses and we generated revenue from course fee. We disposed our online education business in 2021. Our e-commerce business offers e-commerce service solutions for merchants based on our core live-streaming technology. We also generated revenues from financing business, which we ceased to extend credit since the second half of 2019.

Cost of Revenues

Cost of revenues consists primarily of (i) revenue sharing fees and content costs including payments to various channel owners and performers, and content providers, (ii) bandwidth costs, (iii) payment handling costs, (iv) salary and welfare, (v) technical service fee, (vi) depreciation and amortization expense for servers, other equipment and intangibles directly related to operating the platform, (vii) share-based compensation, (viii) other taxes and surcharges, and (ix) other costs. Our cost of revenues generally increased in the past three years ended December 31, 2021, primarily due to the growth and expansion of our businesses, including the consolidation of Bigo in 2019.

Operating Expenses

Our operating expenses consist of (i) research and development expenses, (ii) sales and marketing expenses, and (iii) general and administrative expenses.

Research and Development Expenses

Research and development expenses consist primarily of (i) salary and welfare for research and development personnel, (ii) share-based compensation for research and development personnel, (iii) depreciation of office premise and servers utilized by research and development personnel, and (iv) rental expenses. Costs incurred during the research stage are expensed as incurred. Research and development expenses generally increased in 2019 and 2020 due to the need for additional research and development personnel to accommodate the growth of our business, as well as the consolidation of Bigo in 2019. We experienced a slight decrease in research and development expenses in 2021, as compared to 2020, primarily due to the decrease in share-based compensation.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of (i) advertising and promotion expenses, (ii) amortization of intangible assets from business acquisition, and (iii) salary and welfare for sales and marketing personnel. Our sales and marketing expenses generally increased in 2019 and 2020 primarily reflecting increased marketing and promotional activities as well as the consolidation of Bigo in 2019. We experienced a slight decrease in sales and marketing expenses in 2021, as compared to 2020, primarily due to our reduced spending on user acquisition via advertisement for *Likee* and *Hago*.

General and Administrative Expenses

General and administrative expenses consist primarily of (i) salary and welfare for general and administrative personnel, (ii) share-based compensation for management and administrative personnel, (iii) impairment charge, and (iv) professional service fees. Our general and administrative expenses generally increased in 2019 and 2020 as a result of our business growth and expansion including the consolidation of Bigo in 2019. The increase in our general and administrative expenses in 2021 was primarily due to an increase in impairment charge for certain equity investments and the general growth of our business, partially offset by the decrease in share-based compensation expenses.

Share-based Compensation Expenses

We grant stock-based awards, such as share options, restricted shares, restricted share units to eligible employees, officers, directors, and non-employee consultants. Awards granted to employees, officers, and directors are initially accounted for as equity-classified awards, which are measured at the grant date fair value of the award and are recognized using the graded vesting method, net of estimated forfeitures, over the requisite service period, which is generally the vesting period. Awards granted to non-employees are initially measured at fair value on the grant date and periodically re-measured thereafter until the earlier of the performance commitment date or the date the service is completed and recognized over the period in which the service is provided.

Our operating expenses include share-based compensation expenses as follows:

	For the Year Ended December 31,		
	2019	**2020**	**2021**
	US$	**US$**	**US$**
	(in thousands, except for percentages)		
Research and development expenses	236,504	302,818	279,781
Sales and marketing expenses	404,495	505,389	468,407
General and administrative expenses	135,564	146,666	221,731
Total	776,563	954,873	969,919

Operating Income

Gain on disposal of business

We disposed our online education business in 2021 and online game business in 2019, and recognized related gain of US$5.0 million in 2021 and US$11.8 million in 2019.

Other income

Other income primarily consists of government grants in connection with our contributions to technology development, tax refund and investments in local business districts. These grants may not be recurring in nature.

Taxation

Cayman Islands

According to our Cayman Islands counsel, Maples and Calder (Hong Kong) LLP, the Cayman Islands currently levies no taxes on individuals or corporations based upon profits, income, gains or appreciations and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to us levied by the government of the Cayman Islands except for stamp duties which may be applicable on instruments executed in, or after execution brought within the jurisdiction of, the Cayman Islands. There are no exchange control regulations or currency restrictions in the Cayman Islands.

The Cayman Islands is not party to any double tax treaties that are applicable to any payments made to or by our company.

Pursuant to Section 6 of the Tax Concessions Act (As Revised) of the Cayman Islands, we have obtained an undertaking from the Governor-in-Cabinet:

(i) that no law which is enacted in the Cayman Islands imposing any tax to be levied on profits or income or gains or appreciations shall apply to us or our operations; and

(ii) that the aforesaid tax or any tax in the nature of estate duty or inheritance tax shall not be payable (i) on or in respect of our shares, debentures or other obligations, or (ii) by way of withholding in whole or in part of any relevant payment as defined in section 6(3) of the Tax Concessions Act (As Revised).

The undertaking is for a period of twenty years from August 2, 2011.

British Virgin Islands

Duowan BVI is our wholly owned subsidiary.

As Duowan BVI is a BVI business company subject to the provisions of the BVI Business Companies Act (As Revised), it is exempt from all provisions of the Income Tax Act of the BVI (including with respect to all dividends, interests, rents, royalties, compensation and other amounts payable by Duowan BVI to persons who are not persons resident in the BVI).

Capital gains realized with respect to any shares, debt obligations or other securities of Duowan BVI by persons who are not persons resident in the BVI are also exempt from all provisions of the Income Tax Act of the BVI.

No estate, inheritance, succession or gift tax, rate, duty, levy or other charge is payable by persons who are not persons resident in the BVI with respect to any shares, debt obligations or other securities of Duowan BVI, save for interest payable to or for the benefit of an individual resident in the European Union.

Hong Kong

Our subsidiary registered in Hong Kong is subject to Hong Kong Profits Tax on the taxable income as reported in its respective statutory financial statements adjusted in accordance with relevant Hong Kong tax laws. The applicable tax rate is 16.5% in Hong Kong.

Singapore

According to the Development and Expansion Incentive, or the Incentive, pursuant to the provisions of Part IIIB of the Economic Expansion Incentives (Relief from Income Tax) Act, Chapter 86, corporations engaging in new high-value-added projects, expanding or upgrading their operations, or undertaking incremental activities after their pioneer period may apply for their profits to be taxed at a reduced rate of not less than 5% for an initial period of up to ten years. The total tax relief period for each qualifying project or activity is subject to a maximum of 40 years (inclusive of the post-pioneer relief period previously granted, if applicable).

Bigo Singapore applied for the Incentive and received approval in October 2018. Bigo Singapore is entitled to enjoy the beneficial tax rate of 5% as the Incentive for the years 2018 through 2022, and will need to re-apply for the Incentive qualification renewal in 2023. Other subsidiaries incorporated in Singapore were subject to 17% of their taxable income.

PRC

Current taxation primarily represented the provision for a state and local corporate income tax, or EIT, for subsidiaries and variable interest entities operating in the PRC. On March 16, 2007, the PRC National People's Congress promulgated the EIT Law, which became effective on January 1, 2008 and was amended on February 24, 2017 and December 29, 2018. These subsidiaries and VIEs are subject to EIT Law on their taxable income as reported in their respective statutory financial statements adjusted in accordance with the relevant tax laws and regulations in the PRC. All our PRC entities are subject to EIT at a rate of 25%, with the exception of any preferential treatments they may receive, such as the 15% preferential tax rate that Guangzhou Huanju Shidai can enjoy for the periods reported as a result of its qualification as a high and new technology enterprise.

According to a policy promulgated by the state tax bureau of the PRC and effective from 2008 onwards, enterprises engaged in research and development activities are entitled to claim 150% of the research and development expenses before 2018 so incurred in a year as tax deductible expenses in determining its tax assessable profits for that year, or Super Deduction. The additional tax deducting amount of the qualified research and development expenses have been increased from 50% to 75%, and 100% for manufacturing companies since 2018. Certain subsidiaries and VIEs have claimed such Super Deduction for the period reported.

In addition, according to the EIT Law and its implementation rules, foreign enterprises, which have no establishment or place in the PRC but derive dividends, interest, rents, royalties and other income (including capital gains) from sources in the PRC is subject to PRC withholding tax, or WHT, at 10% (a further reduced WHT rate may be available according to the applicable double tax treaty or arrangement). The 10% WHT is applicable to any dividends to be distributed from our PRC subsidiaries and the variable interest entities to us and our subsidiaries outside the PRC. In 2017, Guangzhou Huanju Shidai declared and distributed a cash dividend of part of its stand-alone 2014-2016 earnings, totaling to US$15 million, to its direct oversea parent company, Duowan BVI. As a result, Guangzhou Huanju Shidai paid a withholding tax in the amount of US$1.5 million in 2017. We do not have any present plan to pay out the retained earnings in the PRC subsidiaries and the variable interest entities in the foreseeable future. Accordingly, no further WHT has been accrued.

Our PRC subsidiaries and the variable interest entities are subject to value added tax and related surcharges. Our live streaming revenues are subject to VAT at a rate of 6% for the years ended December 31, 2019, 2020 and 2021. Other revenues are subject to VAT at a rate of 6%, 9% or 13% for the years ended December 31, 2019, 2020 and 2021. We also subject to surcharges of VAT, which are calculated based on 12% of the VAT paid for the years ended December 31, 2019, 2020 and 2021.

For more information on PRC tax regulations, see " Item 4. Information on the Company—B. Business Overview—PRC Regulation—Regulation on Tax."

Impact of COVID-19 On Our Operations

Our results of operations have been, and could continue to be affected by the COVID-19 or any other epidemic. Any potential impact to our results will depend on, to a large extent, future developments and new information that may emerge regarding the duration and severity of the COVID-19 and the actions taken by government authorities and other entities to contain the COVID-19 or treat its impact, almost all of which are beyond our control.

The COVID-19 has affected and may continue to affect our business and our users' behaviors. On the one hand, lockdown and social distancing measures implemented to control the spread of COVID-19 have led to the increase in demand for premium online entertainment content and authentic social engagement. As a result, we experienced an increase in user traffic on our live streaming and short-form video platforms and time spent by our users on our platforms during the lockdown period, which partially led to the rapid growth of our global business. However, there can be no assurance that such momentum will continue in the future, especially under the circumstances that the lockdown and social distancing measures were gradually relaxed or lifted in many areas of the world starting from the second half of 2021.

On the other hand, the pandemic has also had a negative impact on the activity level of certain users and broadcasters on our social media platforms, particularly those who are interested in, or rely on, offline activities and offline venues. In addition, a number of entertainment events in various countries and regions have been cancelled, delayed or otherwise disrupted, which affected the effectiveness of some of our localized operational activities, and we devoted substantial resources to make necessary adjustment to the related plans. The pandemic may also negatively affect our users' spending and their willingness to purchase virtual items or other products or services on our platforms. As an effort to contain the spread of COVID-19, many countries took precautionary measures that reduced economic activities, including temporary closure of corporate offices, retail outlets and other business facilities, as well as strict implementation of quarantine measures. These measures adversely impacted the macroeconomic environment as well as the income and personal financial condition of many individuals, which in turn adversely affected the willingness of some of our users to purchase virtual items or other products or services on our platforms. Substantial uncertainties remain as to the impact of the resurgence of COVID-19. Our operations have and may continue to experience disruptions, such as temporary closure of our offices and/or those of our partners or suppliers, suspension or delay of services, and travel restrictions and limits on access to public venues. We have corporate offices in different parts of the world that have been significantly affected by the outbreak. Our offline operations in those regions have also been affected to varying degrees. Our business partners have also been affected by the outbreak of COVID-19, and performance of their obligations under our arrangements with them may be delayed or otherwise disrupted.

Our operations are primarily financed through cash flows from operating activities, the proceeds from our public offerings, the proceeds from our following convertible senior notes offering and other financing activities. As of December 31, 2021, our cash and cash equivalents, restricted cash and cash equivalents, short-term deposits, restricted short-term deposits, as well as short-term investments were US$4,685.2 million. We believe this level of liquidity is sufficient to meet our anticipated working capital requirements and capital expenditures needs for the next 12 months, and our abundant cash reserves, efficient operations and prudent investment approach will successfully navigate an extended period of uncertainty. See also "Item 5. Operating and Financial Review and Prospects — B. Liquidity and Capital Resources."

However, there remain significant uncertainties surrounding COVID-19 and its further development as a global pandemic. Hence, the extent of the business disruption and the related impact on our financial results and outlook cannot be reasonably estimated at this time. The extent to which the COVID-19 pandemic impacts our long-term results remains uncertain, and we are closely monitoring its impact on us. See also "Item 3. Key Information — D. Risk Factors—Risks Related to Our Business and Industry—Our business and results of operations have been and may continue to be affected by the COVID-19 pandemic."

Results of Operations

The following table sets forth a summary of our consolidated results of operations for the years indicated. Our business has grown rapidly since our inception, and our limited operating history makes it difficult to predict future operating results. We believe that period-to-period comparisons of results of operations should not be relied upon as indicative of future performance. Starting from April 3, 2020, we no longer consolidate the operating results of Huya into our financial statements. In addition, as a result of the definitive agreements entered into with Baidu on the sale of YY Live, which has been substantially completed with certain customary matters to be completed in the future, including necessary regulatory approvals from government authorities, the historical financial results of YY Live are reflected in the Company's consolidated financial statements as discontinued operations, and accordingly, we ceased consolidation of the YY Live business since February 8, 2021. For the avoidance of confusion, the continuing operations of our consolidated financial statements for the year ended December 31, 2019, 2020 and 2021 primarily consisted of BIGO, excluding Huya and YY Live. The discontinued operations reported in our consolidated financial statements include the results of Huya from January 1, 2019 to April 3, 2020, and the results of YY Live from January 1, 2019 to February 8, 2021.

	For the Year Ended December 31,					
	2019		2020		2021	
	US$	% of total net revenues	US$	% of total net revenues	US$	% of total net revenues
	(in thousands)					
Total net revenues [1]	900,702	100.0	1,918,144	100.0	2,619,051	100.0
Live streaming	769,148	85.4	1,815,826	94.7	2,476,790	94.6
Others	131,554	14.6	102,318	5.3	142,261	5.4
Cost of revenues	(656,920)	(72.9)	(1,378,146)	(71.8)	(1,781,150)	(68.0)
Gross profit	243,782	27.1	539,998	28.2	837,901	32.0
Research and development expenses	(236,504)	(26.3)	(302,818)	(15.8)	(279,781)	(10.7)
Sales and marketing expenses	(404,495)	(44.9)	(505,389)	(26.3)	(468,407)	(17.9)
General and administrative expenses	(135,564)	(15.1)	(146,666)	(7.6)	(221,731)	(8.5)
Total operating expenses	(776,563)	(86.2)	(954,873)	(49.8)	(969,919)	(37.0)
Gain on disposal of business	11,754	1.3	—	—	4,959	0.2
Other income	5,674	0.6	8,095	0.4	20,376	0.8
Operating loss	(515,353)	(57.2)	(406,780)	(21.2)	(106,683)	(4.1)
Gain (loss) on deemed disposal and disposal of investments	—	—	272,281	14.2	(23,762)	(0.9)
(Loss) gain on extinguishment of debt and derivative	(2,277)	(0.3)	(6,277)	(0.3)	5,291	0.2
Gain (loss) on fair value changes of investments	397,960	44.2	160,849	8.4	(15,435)	(0.6)
Foreign currency exchange (losses)/gains, net	1,295	0.1	(17,472)	(0.9)	(13,377)	(0.5)
Interest expense	(38,114)	(4.2)	(75,555)	(3.9)	(14,475)	(0.6)
Interest income and investment income	61,747	6.9	89,078	4.6	91,233	3.5
Other non-operating expense	—	—	(2,467)	(0.1)	(381)	0.0
(Loss) income before income tax expenses	(94,742)	(10.5)	13,657	0.7	(77,589)	(3.0)
Income tax benefits (expenses)	20,098	2.2	(27,825)	(1.5)	(25,745)	(1.0)
Loss before share of income (loss) in equity method investments, net of income taxes	(74,644)	(8.3)	(14,168)	(0.7)	(103,334)	(3.9)
Share of income (loss) in equity method investments, net of income taxes	5,974	0.7	(7,634)	(0.4)	(26,217)	(1.0)
Net loss from continuing operations	(68,670)	(7.6)	(21,802)	(1.1)	(129,551)	(4.9)
Net income from discontinued operations	615,268	68.3	1,401,670	73.1	35,567	1.4
Net income (loss)	546,598	60.7	1,379,868	71.9	(93,984)	(3.6)
Net (loss) income attributable to the non-controlling interest shareholders and the mezzanine equity classified non-controlling interest shareholders	(36,786)	(4.1)	(6,971)	(0.4)	13,691	0.5
Net income (loss) attributable to controlling interest of the Company	509,812	56.6	1,372,897	71.6	(80,293)	(3.1)
Including: Net loss from continuing operations attributable to controlling interest of the Company	(64,780)	(7.2)	(18,741)	(1.0)	(115,860)	(4.4)
Net income from discontinued operations attributable to controlling interest of the Company	574,592	63.8	1,391,638	72.6	35,567	1.4
Accretion of subsidiaries' redeemable convertible preferred shares to redemption value	(5,564)	(0.6)	(5,564)	(0.3)	(5,236)	(0.2)
Cumulative dividend on subsidiary's Series A Preferred Shares	(4,000)	(0.4)	(4,000)	(0.2)	(4,000)	(0.2)
Net income (loss) attributable to common shareholders of the Company	500,248	55.5	1,363,333	71.1	(89,529)	(3.4)
Including: Net loss from continuing operations attributable to common shareholders of the Company	(74,344)	(8.3)	(28,305)	(1.5)	(125,096)	(4.8)
Net income from discontinued operations attributable to common shareholders of the Company	574,592	63.8	1,391,638	72.6	35,567	1.4

(1) Net of rebates and discounts.

Year Ended December 31, 2021 Compared to Year Ended December 31, 2020

Net revenues. Our net revenues increased by 36.5% from US$1,918.1 million in 2020 to US$2,619.1 million in 2021. This increase was primarily driven by a 36.4% year-over-year increase in live streaming revenues.

Live streaming revenues. Our live streaming revenues increased by 36.4% from US$1,815.8 million in 2020 to US$2,476.8 million in 2021. The overall increase was primarily attributable to the increased number of paying users and average revenue per paying user of BIGO. The total number of paying users of BIGO (including Bigo Live, Likee and imo) increased from 3.4 million in 2020 to 3.8 million in 2021, while the ARPU for live streaming business of BIGO (including Bigo Live, Likee and imo) increased from US$416 in 2020 to US$509 in 2021.

Other revenues. Other revenues increased by 39.0% from US$102.3 million in 2020 to US$142.3 million in 2021, which was mainly due to the growth of our advertisement revenue.

Cost of revenues. Our cost of revenues increased by 29.2% from US$1,378.1 million in 2020 to US$1,781.2 million in 2021. The increase was mainly due to an increase in our revenue sharing fees and content costs, which increased by 42.5% from US$812.7 million in 2020 to US$1,158.4 million in 2021. This increase in revenue sharing fees and content costs was in line with the increase in live streaming revenues. Bandwidth costs decreased by 19.8% from US$120.4 million in 2020 to US$96.5 million in 2021, primarily due to our improved efficiency in bandwidth usage and the termination of bandwidth usage for users in India after its measures to block certain Chinese mobile apps in late June 2020, partially offset by Bigo Live's user base expansion outside India. Payment handling costs increased from US$190.6 million in 2020 to US$212.7 million in 2021, which was in line with the increase in live streaming revenues, partially offset by our proactive efforts in introducing third-party payment channels of lower-cost.

Operating expenses. Our operating expenses increased from US$954.9 million in 2020 to US$969.9 million in 2021, primarily due to an increase in our general and administrative expenses, partially offset by decreases in our research and development expenses and sales and marketing expenses.

Research and development expenses. Our research and development expenses decreased from US$302.8 million in 2020 to US$279.8 million in 2021. This decrease was primarily due to the decrease in share-based compensation by US$18.6 million from 2020 to 2021.

Sales and marketing expenses. Our sales and marketing expenses decreased from US$505.4 million in 2020 to US$468.4 million in 2021. This decrease was primarily due to our reduced spending on user acquisition via advertisement for Likee and Hago.

General and administrative expenses. Our general and administrative expenses increased from US$146.7 million in 2020 to US$221.7 million in 2021. This increase was associated with an increase in impairment charge for certain equity investments and the general growth of our business, partially offset by the decrease in share-based compensation expenses.

Foreign currency exchange gains (losses). We had net foreign currency exchange losses of US$13.4 million in 2021, compared to US$17.5 million in 2020, primarily due to the appreciation of Renminbi against the U.S. dollars during 2021.

Interest income and investment income. Our interest income and investment income were US$91.2 million in 2021, compared to US$89.1 million in 2020.

Income tax expenses. We recorded income tax expenses of US$25.7 million in 2021, compared to US$27.8 million in 2020. The effective tax rate of 2020 was significantly impacted by the valuation allowances provided against the deferred tax assets that were unlikely to be realized.

Net loss from continuing operations. As a result of the foregoing, we had a net loss from continuing operations attributable to common shareholders of the Company of US$125.1 million in 2021 as compared to US$28.3 million in 2020.

Net income from discontinued operations. We had net income from discontinued operations attributable to common shareholders of the Company of US$35.6 million in 2021 as compared to US$1,391.6 million in 2020. The decrease was primarily due to the gain on disposal of Huya amounting to approximately US$0.9 billion that was recorded as part of the net income from discontinued operations in 2020, as well as the deconsolidation of YY Live business since February 8, 2021.

Year Ended December 31, 2020 Compared to Year Ended December 31, 2019

Net revenues. Our net revenues increased by 113.0% from US$900.7 million in 2019 to US$1,918.1 million in 2020, primarily driven by the increase in live streaming revenues and the contribution from Bigo segment.

Live streaming revenues. Our live streaming revenues increased by 136.1% from US$769.1 million in 2019 to US$1,815.8 million in 2020. The overall increase was primarily caused by the continued live streaming revenues growth in Bigo segment, amounting to US$1,659.3 million, as a result of Bigo's successful global expansion in 2020.

Other revenues. Other revenues decreased by 22.2% from US$131.6 million in 2019 to US$102.3 million in 2020, mainly due to the decrease in revenues from all other segment. As we continued to focus on our main strategy, we exited certain business not closely related to our core focus areas.

Cost of revenues. Our cost of revenues increased by 109.8% from US$656.9 million in 2019 to US$1,378.1 million in 2020. The increase was mainly due to an increase in our revenue sharing fees and content costs, which increased by 165.9% from US$305.6 million in 2019 to US$812.7 million in 2020. This increase in revenue sharing fees and content costs was in line with the increase in live streaming revenues in Bigo. Bandwidth costs increased 18.1% from US$102.0 million in 2019 to US$120.4 million in 2020, as the global user base and time spent continued to expand following the consolidation of Bigo. Payment handling costs increased from US$94.1 million in 2019 to US$190.6 million in 2020, primarily due to the higher charge rate of payment systems as we expanded our global operations.

Operating expenses. Our operating expenses increased by 23.0% from US$776.6 million in 2019 to US$954.9 million in 2020, primarily due to an increase in sales and marketing expenses, particularly in relation to sales and marketing activities in the global market, and research and development expenses, which was associated with our commitment to research and development and the advancements in our technology development, as well as general and administrative expenses.

Research and development expenses. Our research and development expenses increased by 28.0% from US$236.5 million in 2019 to US$302.8 million in 2020. This increase was primarily due to the increase in salary of research and development staff by US$70.6 million and the decrease in share-based compensation by US$10.0 million from 2019 to 2020, which were mainly related to the increased spending on personnel costs for research and development personnel.

Sales and marketing expenses. Our sales and marketing expenses increased by 24.9% from US$404.5 million in 2019 to US$505.4 million in 2020. This increase was primarily due to our increased efforts in sales and marketing activities as we expand our global operations.

General and administrative expenses. Our general and administrative expenses increased by 8.2% from US$135.6 million in 2019 to US$146.7 million in 2020. This increase was associated with the general growth of our business and the decrease in the impairment charge.

Foreign currency exchange gains (losses). We had net foreign currency exchange losses of US$17.5 million in 2020, compared to a net foreign currency exchange gains of US$1.3 million in 2019. During 2020, RMB generally appreciated against U.S. dollars, which was opposite to the trend in 2019, leading to the change in foreign currency exchange gains (losses) during the two years.

Interest income and investment income. Our interest income and investment income increased from US$61.7 million in 2019 to US$89.1 million in 2020. This increase was primarily due to proceeds from disposal of equity interest in Huya in 2020.

Income tax expenses. We recorded income tax expenses of US$27.8 million in 2020 compared to tax benefits of US$20.1 million in 2019. The effective tax rates of 2020 and 2019 were 203.7% and 21.2%, respectively. The effective tax rate of 2020 was significantly impacted by the valuation allowances provided against deferred tax assets which were more likely that would not be realized.

Net loss from continuing operations. As a result of the foregoing, we had a net loss from continuing operations attributable to common shareholders of the Company of US$28.3 million in 2020 as compared to US$74.3 million in 2019.

Net income from discontinued operations**.** We had net income from discontinued operations attributable to common shareholders of the Company of US$1,391.6 million in 2020 as compared to US$574.6 million in 2019. This increase was primarily due to gain on disposal of Huya amounted to around US$0.9 billion was reported as part of the net income from discontinued operations in the second quarter of 2020.

Segment Revenues

Starting from the second quarter of 2020, we deconsolidated Huya and Huya's historical financial results were reflected in our consolidated financial statements as discontinued operations accordingly. As a result of the definitive agreements entered into with Baidu on the sale of YY Live on November 16, 2020, YY Live is represented as discontinued operations. YY segment is renamed as "All other" segment and has been recast to exclude the financial numbers of YY Live. The following table reflects the Huya and YY Live transactions and the elimination from historical segment results of both discontinued businesses as reportable segments. The table below sets forth our revenues by segment for the periods indicated:

	Year ended December 31,		
	2019	2020	2021
	US$	US$	US$
	(in thousands, except percentages)		
Net Revenues:			
Bigo	716,329	1,732,811	2,323,758
All other	184,373	185,333	295,360
Elimination	—	—	(67)

Bigo

2021 compared to 2020. Bigo revenues increased by 34.1% from US$1,732.8 million in 2020 to US$2,323.8 million in 2021, which primarily attributable to the increases in number of paying users and average revenue per paying user of BIGO.

2020 compared to 2019. Bigo revenues increased by 141.9% from US$716.3 million in 2019 after we consolidated Bigo's financial information to US$1,732.8 million in 2020, which primarily attributable to continued user base growth and enhanced monetization capabilities of BIGO.

All other

2021 compared to 2020. Revenues of All other segment increased by 59.4% from US$185.3 million in 2020 to US$295.4 million in 2021, primarily due to the revenue growth of Hago and other products.

2020 compared to 2019. Revenues of All other segment increased from US$184.4 million in 2019 to US$185.3 million in 2020, primarily due to the revenue growth of Hago, largely offset by the decrease resulting from the disposal of online game business in 2019.

Segment Operating Costs and Expenses

The following table sets forth our operating costs and expenses by segment for the periods indicated:

	Year ended December 31,		
	2019	2020	2021
	US$	US$	US$
	(in thousands, except percentages)		
Operating Costs and Expenses:			
Bigo	992,709	1,933,452	2,203,088
All other	440,774	399,567	548,048
Elimination	—	—	(67)

Bigo

Operating costs and expenses of Bigo mainly consist of revenue sharing, salaries and benefits, marketing and promotion expenses, bandwidth costs, depreciation and amortization, payment handling costs and other costs.

Cost of revenues.

2021 compared to 2020. The cost of revenues of Bigo increased by 27.5% from US$1,207.1 million in 2020 to US$1,539.2 million in 2021, which was in line with the increase in revenue.

2020 compared to 2019. The cost of revenues of Bigo increased by 138.7% from US$505.6 million in 2019 after we consolidated Bigo's financial information to US$1,207.1 in 2020, which was in line with the increase in revenue.

Research and development expenses.

2021 compared to 2020. The research and development expenses of Bigo increased by 5.4% from US$194.1 million in 2020 to US$204.6 million in 2021, primarily due to an increase in the salaries and welfare of research and development personnel.

2020 compared to 2019. The research and development expenses of Bigo increased by 37.1% from US$141.6 million in 2019 after we consolidated Bigo's financial information to US$194.1 million in 2020, primarily due to the increase in the salaries, welfare and shared-based compensation expenses of research and development personnel.

Sales and marketing expenses.

2021 compared to 2020. The sales and marketing expenses of Bigo decreased by 9.9% from US$446.5 million in 2020 to US$402.5 million in 2021, primarily due to our reduced spending on user acquisition via advertisement for Likee.

2020 compared to 2019. The sales and marketing expenses of Bigo increased by 50.0% from US$297.7 million in 2019 after we consolidated Bigo's financial information to US$446.5 million in 2020, primarily due to our increased efforts in sales and marketing activities as we expand our global business.

General and administrative expenses.

2021 compared to 2020. The general and administrative expenses of Bigo decreased by 33.7% from US$85.7 million in 2020 to US$56.8 million in 2021, primarily due to the decrease in share-based compensation expenses.

2020 compared to 2019. The general and administrative expenses of Bigo increased by 79.3% from US$47.8 million in 2019 after we consolidated Bigo's financial information to US$85.7 million in 2020, which was primarily due to the increase in share-based compensation expenses related to the share awards newly granted.

All other

Operating costs and expenses of All other segment mainly consist of revenue sharing fees and content costs, salaries and benefits, marketing and promotion expenses, bandwidth costs, depreciation and amortization, impairment charge and other costs.

Cost of revenues

2021 compared to 2020. The cost of revenues of All other segment increased by 41.5% from US$171.0 million in 2020 to US$242.0 million in 2021, which was in line with the increase in revenue.

2020 compared to 2019. The cost of revenues of All other segment increased by 13.1% from US$151.3 million in 2019 to US$171.0 million in 2020, which was due to the continued investment in content enrichment.

Research and development expense

2021 compared to 2020. The research and development expenses of All other segment decreased from US$108.7 million in 2020 to US$75.2 million in 2021, primarily due to the decrease in staff related expenses for research and development personnel.

2020 compared to 2019. The research and development expenses of All other segment increased by 14.5% from US$95.0 million in 2019 to US$108.7 million in 2020, primarily due to increase in staff related expenses for research and development personnel.

Sales and marketing expenses

2021 compared to 2020. The sales and marketing expenses of All other segment increased by 12.0% from US$58.9 million in 2020 to US$65.9 million in 2021, primarily due to increased efforts in sales and marketing activities for most of the other products, partially offset by our reduced spending on user acquisition via advertisement for Hago.

2020 compared to 2019. The sales and marketing expenses of All other segment decreased by 44.9% from US$106.8 million in 2019 to US$58.9 million in 2020, primarily due to Hago's decreased sales and marketing activities in global markets due to the COVID-19 outbreak, as well as Hago's decreased sales and marketing activities in India after Indian government's measures to block certain Chinese mobile apps in late June 2020.

General and administrative expense

2021 compared to 2020. The general and administrative expenses of All other segment increased from US$61.0 million in 2020 to US$164.9 million in 2021, primarily due to an increase in impairment charge for certain equity investments

2020 compared to 2019. The general and administrative expenses of All other segment decreased from US$87.8 million in 2019 to US$61.0 million in 2020, primarily due to a decrease in provision for loss allowances of receivables.

Recently Issued Accounting Pronouncements

The recently issued accounting pronouncements that are relevant to us are included in note 2(mm) to our audited consolidated financial statements, which are included in this annual report.

B. Liquidity and Capital Resources

Cash Flows and Working Capital

In recent years, we have financed our operations primarily through cash flows from operations, the proceeds from our follow-on equity offerings and convertible senior notes offerings, and gain on disposal of businesses. See "Item 4. Information on the Company—A. History and Development of the Company" for more information about our material transactions in the past few years.

We expect to require cash to fund our ongoing operational needs, particularly our revenue sharing fees and content costs, salaries and benefits, bandwidth costs and potential acquisitions or strategic investments. We believe that our current cash and cash equivalents and the anticipated cash flow from operations will be sufficient to meet our anticipated working capital requirements and capital expenditures needs for the next 12 months. However, we may require additional cash resources due to changing business conditions or other future developments, including any investments or acquisitions we may decide to selectively pursue. If our existing cash resources are insufficient to meet our requirements, we may seek to sell equity or equity-linked securities, debt securities or borrow from banks.

As of December 31, 2019, 2020 and 2021, we had US$482.7 million, US$1,788.0 million and US$2,134.5 million, respectively, in cash, cash equivalents, restricted cash, and restricted short-term deposits of continuing operation.

As of December 31, 2021, our subsidiaries, VIEs, and VIE's subsidiaries located in the PRC held cash and cash equivalents, restricted cash, short-term deposits, restricted short-term deposits and short-term investments in the amount of US$1,254.6 million. Aggregate undistributed earnings and reserves of our subsidiaries, VIEs, and VIE's subsidiaries located in the PRC that are available for distribution to our company as of December 31, 2021 were US$4,930.4 million. We would need to accrue and pay withholding taxes if we were to distribute funds from our subsidiaries in the PRC to our offshore subsidiaries. However, we plan to indefinitely reinvest aggregate undistributed earnings in the PRC for use in the operation and expansion of our business.

The following table sets forth a summary of our cash flows for the years indicated:

	For the Year Ended December 31,		
	2019	2020	2021
	US$	US$	US$
		(in thousands)	
Net cash (used in) provided by continuing operating activities	(177,585)	(2,717)	146,127
Net cash (used in) provided by continuing investing activities	(1,702,855)	690,170	(846,857)
Net cash provided by (used in) continuing financing activities	1,066,286	(136,734)	(723,536)
Net (decrease)/ increase in cash, cash equivalents and restricted cash in continuing operations	(814,154)	550,719	(1,424,266)
Net (decrease)/ increase in cash, cash equivalents and restricted cash in discontinuing operations	589,098	591,466	1,700,739
Cash, cash equivalents and restricted cash at the beginning of the year	874,844	652,427	1,819,571
Effect of exchange rate changes on cash, cash equivalents and restricted cash	2,639	24,959	38,448
Cash, cash equivalents and restricted cash at the end of the year	652,427	1,819,571	2,134,492
Less: Cash, cash equivalents and restricted cash of held for sales at the end of the year	169,764	31,600	—
Cash, cash equivalents and restricted cash of continuing operations at the end of the year	482,663	1,787,971	2,134,492

Operating Activities

Net cash used in continuing operating activities consists primarily of our net income with certain adjustments, such as gain on disposal and deemed disposal of investments, and gain on fair value changes of investments, and mitigated by non-cash adjustments, such as share-based compensation, depreciation of property and equipment, and amortization of acquired intangible assets and land use rights.

Net cash provided by continuing operating activities amounted to US$146.1 million for the year ended December 31, 2021. In 2021, the difference between our net cash provided for continuing operating activities and our net loss from continuing operations of US$129.6 million was primarily due to a decrease in accrued liabilities and other current liabilities of US$89.5 million as a result of an increase in accrued revenue sharing fees, accrued salaries and welfare, and value added taxes and other taxes payable, a non-cash item adjustment in share-based compensation of US$33.4 million, a non-cash item adjustment in amortization of acquired intangible assets and land use rights of US$67.2 million, a non-cash item adjustment in depreciation of property and equipment of US$108.7 million, partially offset by a non-cash item adjustment in gain on fair value change of investments of US$15.4 million, a non-cash item adjustment in impairment of investments of US$93.6 million, and a non-cash adjustment in gain on disposal and deemed disposal of investments of US$23.8 million.

Net cash used in continuing operating activities amounted to US$2.7 million for the year ended December 31, 2020. In 2020, the difference between our net cash used in continuing operating activities and our net loss from continuing operations of US$21.8 million was primarily due to an increase in accrued liabilities and other current liabilities of US$106.1 million as a result of an increase in accrued revenue sharing fees, accrued salaries and welfare, and value added taxes and other taxes payable, a non-cash item adjustment in share-based compensation of US$92.2 million, a non-cash item adjustment in amortization of acquired intangible assets and land use rights of US$109.4 million, a non-cash item adjustment in depreciation of property and equipment of US$77.5 million, partially offset by a non-cash item adjustment in gain on fair value change of investments of US$160.8 million, and an adjustment in gain on disposal and deemed disposal of investments of US$272.3 million.

Net cash used in continuing operating activities amounted to US$177.6 million for the year ended December 31, 2019. In 2019, the difference between our net cash used in continuing operating activities and our net loss from continuing operations of US$68.7 million was primarily due to a non-cash item adjustment in gain on fair value change of investments of US$398.0 million, partially offset by an increase in accrued liabilities and other current liabilities of US$113.8 million, a non-cash item adjustment in share-based compensation of US$76.4 million, and a non-cash item adjustment in amortization of acquired intangible assets and land use rights of US$101.5 million.

Investing Activities

Net cash used in continuing investing activities largely reflects placements of short-term deposits, placements of short-term investments, purchases of property and equipment and other non-current assets in connection with the expansion and upgrade of our technology infrastructure, and our acquisitions of and investments in certain companies.

Net cash provided by continuing investing activities largely reflects maturities of short-term deposits, maturities of short-term investments, and cash received from disposal of investments.

Net cash used in continuing investing activities amounted to US$846.9 million in the year ended December 31, 2021. Net cash used in continuing investing activities primarily resulted from the placement of short-term deposits and short-term investments in various banks in the amount of US$3,678.2 million, payments for purchase of property and equipment, intangible assets and land use right of US$184.9 million, and cash paid for certain acquisitions and strategic investments of US$89.7 million, partially offset by the maturities of short-term deposits and short-term investments in various banks in the amount of US$2,990.8 million and cash received from disposal of investments of US$156.5 million.

Net cash provided by continuing investing activities amounted to US$690.2 million in the year ended December 31, 2020. Net cash provided by continuing investing activities primarily resulted from the maturities of short-term deposits and short-term investments in various banks in the amount of US$2,285.5 million, and cash received from disposal of investments of US$826.8 million, partially offset by the placement of short-term deposits and short-term investments in various banks in the amount of US$2,103.5 million, cash paid for certain acquisitions and strategic investments of US$206.6 million, and payments of US$151.0 million for purchase of property and equipment.

Net cash used in continuing investing activities amounted to US$1,702.9 million in the year ended December 31, 2019. Net cash used in continuing investing activities primarily resulted from the placements of short-term deposits of US$1,609.1 million, the placements of short-term investments of US$700.9 million, cash paid for certain acquisitions and strategic investments of US$320.1 million, and payments of US$113.1 million to originate financing receivables, partially offset by the maturities of short-term deposits and short-term investments in various banks in the amount of US$961.1 million, and principal collection from financing receivables of US$216.1 million.

Financing Activities

Net cash used in continuing financing activities was US$723.5 million in 2021, primarily attributable to cash paid for share repurchase of US$398.6 million, dividends paid to shareholders of US$160.1 million, and US$147.6 million repayment of bank borrowings.

Net cash used in continuing financing activities was US$136.7 million in 2020, primarily attributable to dividends paid to shareholders of US$64.6 million, cash paid for share repurchase of US$106.0 million, the proceeds of US$155.7 million from bank borrowings, and US$132.9 million repayment of bank borrowings.

Net cash provided by continuing financing activities was US$1,066.3 million in 2019, primarily attributable to the proceeds of US$901.3 million from issuance of our issuance of convertible bonds, net of issuance costs, the proceeds of US$225.0 million from bank borrowings, and US$147.2 million repayment of bank borrowings.

Material Cash Requirements

Our material cash requirements as of December 31, 2021 and any subsequent interim period primarily include our operating lease commitments, capital commitment, loans obligations and convertible notes obligations.

Our operating lease commitments consist of lease of offices under operating lease agreements, where a significant portion of the risks and rewards of ownership are retained by the lessor. Payments made under operating leases are charged to our consolidated statements of operations on a straight-line basis over the period of the lease, including any free lease periods. Payment due by December 31, 2021 for our operating lease commitments amounted to US$19.9 million, representing undiscounted cash payments of both leases recognized as lease liabilities on our consolidated balance sheet and lease commitments not recognized as lease liabilities.

Our capital commitments primarily consist of capital expenditures related to properties and additional investments in equity investments. We made capital expenditures of US$150.0 million, US$153.0 million and US$186.5 million in 2019, 2020 and 2021, respectively. Our capital expenditures are primarily used to purchase office space, computers, servers, office furniture, operating rights, domain names and other assets.

Our loans obligations primarily consist of long-term loans borrowed from banks. During the year ended December 31, 2021, we entered into a long-term borrowing agreement with the Agricultural Bank of China as borrower, for an up to RMB1.1 billion loan facility with a floating interest rate determined based on the one-year loan prime rate for the construction of our building located on the parcel of land in Guangzhou to which we acquired use right. The loan was pledged by our entitlement to the rental income from such building and our land use right to the parcel of land located in Guangzhou, which amounted to US$256.1 million as of December 31, 2021. In 2021, we drew down an aggregate principal amount of US$7.4 million under such loan facility, all of which were outstanding as of December 31, 2021. As of December 31, 2021, the total payments due for our loan obligations amounted to US$8.6 million.

Our convertible notes obligations primarily consist of the 2025 Notes and the 2026 Notes we issued in June 2019. The 2025 Notes bear interest at a rate of 0.75% per year, and the 2026 Notes at a rate of 1.375% per year. Interest on the notes will accrue from, and including, June 24, 2019 and will be payable semiannually in arrears on June 15 and December 15 of each year, beginning on December 15, 2019. The 2025 Notes will mature on June 15, 2025 and the 2026 Notes will mature on June 15, 2026, unless repurchased, redeemed or converted in accordance with their terms prior to such date.

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholders' (deficit)/equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. We do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

Other than the obligations set forth above, we did not have any significant operating lease obligations, purchase obligations or other long-term obligations as of December 31, 2021.

Holding Company Structure

JOYY Inc. is a holding company with no material operations of its own. We conduct our operations primarily through (i) our subsidiaries in Singapore, the United States, the United Kingdom, and many other regions for a majority of our global business; and (ii) the variable interest entities and their subsidiaries for some of our remaining business in China. As a result, JOYY Inc.'s ability to pay dividends depends upon dividends paid by our subsidiaries, which is subject to restrictions imposed by the applicable laws and regulations in these markets. In certain jurisdictions, such as Singapore, there are currently no foreign exchange control regulations which restrict the ability of our subsidiaries in these jurisdictions to distribute dividends to us. However, the relevant regulations may be changed and the ability of these subsidiaries to distribute dividends to us may be restricted in the future. As for the jurisdiction of PRC, under the PRC laws and regulations, if our existing subsidiaries or any newly formed ones incur debt on their own behalf in the future, the instruments governing their debt may restrict their ability to pay dividends to us. In addition, our wholly foreign-owned subsidiaries in China are permitted to pay dividends to us only out of its retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under PRC law, each of our subsidiaries and the variable interest entities in China is required to set aside at least 10% of its after-tax profits each year, if any, to fund certain statutory reserve funds until such reserve funds reach 50% of their registered capital. In addition, our wholly foreign-owned subsidiaries in China may allocate a portion of their after-tax profits based on PRC accounting standards to enterprise expansion funds and staff bonus and welfare funds at their discretion, and the variable interest entities may allocate a portion of its after-tax profits based on PRC accounting standards to a surplus fund at their discretion. The statutory reserve funds and the discretionary funds are not distributable as cash dividends. Remittance of dividends by a wholly foreign-owned company out of China is subject to examination by the banks designated by SAFE. Our PRC subsidiaries have not paid dividends and will not be able to pay dividends until they generate accumulated profits and meet the requirements for statutory reserve funds.

C. Research and Development, Patents and Licenses, Etc.

In order to support the kind of multi-user, real-time online voice and video communications on a scale necessary for our platforms, we build and develop our own network infrastructure. See "Item 4. Information on the Company—B. Business Overview—Intellectual Property" for a description of the protection of our intellectual property.

Research and development expenses consist primarily of salaries and benefits for research and development personnel and rental and depreciation of office premises and servers utilized by the research and development personnel. Research and development expenses increased in the past three years ended December 31, 2021, due to the need for additional research and development personnel to accommodate the rapid growth of our business. We incurred US$236.5 million, US$302.8 million and US$279.8 million of research and development expenses in 2019, 2020 and 2021, respectively.

D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events since the beginning of our fiscal year 2021 that are reasonably likely to have a material effect on our net revenues, income from operations, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future operating results or financial condition.

E. Critical Accounting Estimates

Critical Accounting Policies and Estimates

We prepare our financial statements in conformity with U.S. GAAP, which requires us to make estimates and assumptions that affect our reporting of, among other things, assets and liabilities, revenues and expenses. We regularly evaluate these estimates and assumptions based on the most recently available information, our own historical experiences and other factors that we believe to be relevant under the circumstances. Since our financial reporting process inherently relies on the use of estimates and assumptions, our actual results could differ from these estimates. This is especially true with some accounting policies that require higher degrees of judgment than others in their application. We consider the policies discussed below to be critical to an understanding of our audited consolidated financial statements because they involve the greatest reliance on our management's judgment.

Revenue Recognition and Deferred Revenue

Revenues are recognized when control of the promised virtual items or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those virtual items or services.

We have a recharge system for users to purchase our virtual currency. Users can recharge via various online payment platforms provided by third parties. Virtual currency is non-refundable and without expiry. As the virtual currency is often consumed soon after it is purchased based on history of turnover, we consider the impact of the breakage amount for virtual currency coupons is insignificant. Unconsumed virtual currency is recorded as deferred revenue. Virtual currencies used to purchase virtual items are recognized as revenue according to the prescribed revenue recognition policies of virtual items addressed below unless otherwise stated.

Live Streaming

We generate our live streaming revenue from sales of virtual items on our live streaming platforms. Our users can access the platforms and view the live streaming content showed by the performers. We share a portion of the sales proceeds of virtual items ("revenue sharing fee") with performers and talent agencies in accordance with their revenue sharing arrangements. Those performers who do not have revenue sharing arrangements with us are not entitled to any revenue sharing fee.

We evaluate and determine that we are the principal and view users to be our customers. We report live streaming revenues on a gross basis. Accordingly, the amounts billed to users are recorded as revenues and revenue sharing fee paid to performers and talent agencies are recorded as cost of revenues. Where we are the principal, we control the virtual items before they are transferred to users. Our control is evidenced by our sole ability to monetize the virtual items before they are transferred to users, and is further supported by us being primarily responsible to users and having a level of discretion in establishing pricing.

We design, create and offer various virtual items for sales to users with pre-determined selling price. Sales proceeds are recorded as deferred revenue and recognized as revenue based on the consumption of the virtual items. Virtual items are categorized as consumable and time-based items. Consumable items are consumed upon purchase and use while time-based items could be used for a fixed period of time. Users can purchase and present consumable items to performers to show support for their favorite performers, or purchase time-based virtual items for one or multiple months for a monthly fee, which provide users with recognized status, such as priority speaking rights or special symbols over a period of time. Accordingly, live streaming revenue is recognized immediately when the consumable virtual item is used, or in the case of time-based virtual items, revenue is recognized ratably over the fixed period on a straight-line basis. We do not have further obligations to the user after the virtual items are consumed immediately or after the stated period of time for time-based items.

We may also enter into contracts that can include various combinations of virtual items, which are generally capable of being distinct and accounted for as separate performance obligations, such as noble member program. Judgments are required as follow: (1) determining whether those virtual items are considered distinct performance obligations that should be accounted for separately versus together, (2) determining the standalone selling price for each distinct performance obligation, and (3) allocating of the arrangement consideration to the separate accounting of each distinct performance obligation based on their relative standalone selling prices. Certain virtual items are provided to customers over time and have the same pattern of transfer to customers. We exercise judgement in determining the number of distinct performance obligations by accounting for services that have the same pattern of transfer to customers as a single performance obligation. In instances where standalone selling price is not directly observable as we do not sell the virtual item separately, we determine the standalone selling price based on pricing strategies, market factors and strategic objectives. We recognize revenue for each of the distinct performance obligations identified in accordance with the applicable revenue recognition method relevant for that obligation.

As our live streaming virtual items are generally sold without right of return and we do not provide any other credit and incentive to its users, therefore accounting of variable consideration when estimating the amount of revenue to recognize is not applicable to our live streaming business.

Others

Other revenues mainly generated from membership, advertising and e-commerce business.

Membership

We operate a membership subscription program where subscription members can have enhanced user privileges. The membership fee is collected up-front from subscribers. The receipt of the revenue is initially recorded as deferred revenue and revenue is recognized ratably over the period of the subscription when services are rendered. Unrecognized portion beyond 12 months from balance sheet date is classified as long-term deferred revenue.

Advertising revenues

We primarily generate advertising revenues from sales of various forms of advertising and provision of promotion campaigns on the live streaming platforms by way of advertisement display or integrated promotion activities in shows and programs on the live streaming platforms. Advertisements on our platforms are generally charged on the basis of duration, and advertising contracts are signed to establish the fixed price and the advertising services to be provided. Where collectability is reasonably assured, advertising revenues from advertising contracts are recognized ratably over the contract period of display.

We enter into advertising contracts directly with advertisers or third-party advertising agencies that represent advertisers. Payment terms and conditions vary by contract type, although the terms generally include a requirement of payment within 1 to 3 months. Both third-party advertising agencies and direct advertisers are generally billed at the end of the display period and payments are due usually within 3 months. In instances where the timing of revenue recognition differs from the timing of billing, we have determined the advertising contracts generally do not include a significant financing component. The primary purpose of the credits terms is to provide customers with simplified and predictable ways of purchasing our advertising services, not to receive financing from our customers or to provide customers with financing.

Certain customers may receive sales incentives in the forms of discounts and rebates to advertisers or advertising agencies based on purchase volume, which are accounted for as variable consideration. We estimate these amounts based on the expected amount to be provided to customers considering the contracted rebate rates and estimated sales volume based on historical experience, and reduce revenues recognized. We believe that there will not be significant changes to its estimates of variable consideration.

E-commerce business revenues

We operate several e-commerce platforms and displays goods for end customers to select and order. We are responsible to arrange delivery of the goods to the end customers after customers place an order in the platforms. We recognize e-commerce business revenue equal to the sales price (net of sales discount) to the end customers when control of the inventory is transferred. Revenues derived from e-commerce business are recorded on a gross basis, because (i) we are primarily responsible for fulfilling the promise to provide the specified good, (ii) we are subject to inventory risks before the specified goods have been transferred to a customer or after transfer of control to the customers, and (iii) we have discretion in establishing the price of the specified goods.

Advances from customers and deferred revenue

Advances from customers primarily consist of prepayments from users in the form of our virtual currency that are not yet consumed or converted into tokens, and upon the consumption or conversion, are recognized as revenue according to the prescribed revenue recognition policies described above. Deferred revenue primarily consists of the unamortized game tokens, prepaid subscriptions under the membership program and unamortized revenue from virtual items in our various channels on our platforms, where there is still an implied obligation to be provided by us which will be recognized as revenue when all of the revenue recognition criteria are met.

Accounts receivable

In June 2016, the FASB issued ASU 2016-13: Financial Instruments-Credit Losses (Topic 326), which requires entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. This replaces the existing incurred loss model and is applicable to the measurement of credit losses on financial assets measured at amortized cost. We adopted ASU 2016-13 from January 1, 2020 and maintains an allowance for credit losses in accordance with Topic 326 and records the allowance for credit losses as an offset to accounts receivable. We assess collectability by reviewing accounts receivable on a collective basis where similar characteristics exist, primarily based on similar business line, service or product offerings and on an individual basis when the we identify specific customers with known disputes or collectability issues. In calculating the expected credit loss rates, we consider historical loss rates for each category of receivables and adjusts for forward looking macroeconomic data, including global GDP and external rates of non-performing loans. We used the modified-retrospective transition approach with a cumulative-effect adjustment to shareholders' equity amounting to US$1.7 million recognized as of January 1, 2020.

Investments

Equity Investments with Readily Determinable Fair Values

Equity investments with readily determinable fair values are measured and recorded at fair value using the market approach based on the quoted prices in active markets at the reporting date. We classify the valuation techniques that use these inputs as Level 1 of fair value measurements. Gains or losses arising from changes in fair value of these investments are recorded in earnings.

Equity Investments without Readily Determinable Fair Values

After the adoption of this new accounting standard, we elected to record equity investments without readily determinable fair values and not accounted for under the equity method at cost, less impairment, adjusted for subsequent observable price changes on a nonrecurring basis, and report changes in the carrying value of the equity investments in current earnings. Changes in the carrying value of the equity investments are required to be made whenever there are observable price changes in orderly transactions for the identical or similar investment of the same issuer. The implementation guidance notes that an entity should make a "reasonable effort" to identify price changes that are known or that can reasonably be known.

Equity Investments Accounted for Using the Equity Method

We account for its equity investment over which it has significant influence but does not own a majority equity interest or otherwise control using the equity method. We adjust the carrying amount of the investment and recognizes investment income or loss for share of the earnings or loss of the investee after the date of investment. We assess its equity investment for other-than-temporary impairment (which would require an adjustment to estimated fair value) by considering factors including, but not limited to, current economic and market conditions, operating performance of the entities, including current earnings trends and undiscounted cash flows, and other entity-specific information. The fair value determination, particularly for investment in privately held entities, requires judgment to determine appropriate estimates and assumptions. Changes in these estimates and assumptions could affect the calculation of the fair value of the investment and determination of whether any identified impairment is other-than-temporary.

Consolidation

Our consolidated financial statements include the financial statements of our company, our subsidiaries, and the VIEs, for which we or our subsidiaries are the primary beneficiaries. All transactions and balances among our company, subsidiaries and VIEs have been eliminated upon consolidation.

A subsidiary is an entity in which our company, directly or indirectly, controls more than one half of the voting powers; or has the power to appoint or remove the majority of the members of the board of directors or to cast a majority of votes at the meeting of directors; or has the power to govern the financial and operating policies of the investee under a statute or agreement among the shareholders or equity holders.

A VIE is an entity in which we, or our subsidiary, through contractual agreements, bears the risks of, and enjoys the rewards normally associated with ownership of the entity, and therefore the Company or its subsidiary is the primary beneficiary of the entity. In determining whether we or our subsidiaries are the primary beneficiary, we considered whether it has the power to direct activities that are significant to the VIEs' economic performance, and also our obligation to absorb losses of the VIEs that could potentially be significant to the VIEs or the right to receive benefits from the VIEs that could potentially be significant to the VIEs. Determining the primary beneficiary by considering the factors above involves significant judgments. Guangzhou Huanju Shidai, Beijing Huanju Shidai, Huya Technology, BaiGuoYuan Technology, Guangzhou Wangxing and ultimately we hold all the variable interests of the VIEs and have been determined to be the primary beneficiary of the VIEs. As a result of the share transfer to Tencent on April 3, 2020, we no longer consolidate the results of operations of Huya.

We deconsolidates our subsidiaries or business in accordance with ASC 810 as of the date we cease to have a controlling financial interest in our subsidiaries.

We account for the deconsolidation of our subsidiaries or business by recognizing a gain or loss in net income/loss attributable to us in accordance with ASC 810. This gain or loss is measured at the date our subsidiaries are deconsolidated as the difference between (a) the aggregate of the fair value of any consideration received, the fair value of any retained non-controlling interest in our subsidiaries being deconsolidated, and the carrying amount of any non-controlling interest in our subsidiaries being deconsolidated, including any accumulated other comprehensive income/loss attributable to the non-controlling interest, and (b) the carrying amount of the assets and liabilities of our subsidiaries being deconsolidated.

Share-based compensation

We grant stock-based award, such as, but not limited to, share options, restricted shares, restricted share units of the Company, share option, restricted share units and ordinary shares of the Company's subsidiaries to eligible employees, officers, directors, and non-employee consultants. The details of these share-based awards and the respective terms and conditions are described in "Share-based compensation" in Note 26 to our audited consolidated financial statements for the years ended December 31, 2019, 2020 and 2021, which are included elsewhere in this annual report on Form 20-F.

Awards granted to employees, officers, and directors are initially accounted for as equity-classified awards. The related share-based compensation expenses are measured at the grant date fair value of the award and are recognized using the graded vesting method, net of estimated forfeiture rates, over the requisite service period, which is generally the vesting period. Forfeitures are estimated at the time of grant based on historical forfeiture rates and will be revised in the subsequent periods if actual forfeitures differ from those estimates. We also granted share options, restricted shares and restricted share units to non-employees, which are also initially accounted for as equity-classified awards. Awards granted to non-employees are initially measured at fair value on the grant date and periodically remeasured thereafter until the earlier of the performance commitment date or the date the service is completed and recognized over the period the service is provided. Awards are remeasured at each reporting date using the fair value as at each period end until the measurement date, generally when the services are completed and share-based awards are vested. Changes in fair value between the interim reporting dates are recorded in consistent with the method used in recognizing the original compensation costs.

For an award with a performance and/or service condition that affects vesting, the performance and/or service condition is not considered in determining the award's fair value on the grant date. Performance and service conditions should be considered when we are estimating the quantity of awards that will vest. Compensation cost will reflect the number of awards that are expected to vest and will be adjusted to reflect those awards that do ultimately vest. We recognize compensation cost for awards with performance conditions if and when we conclude that it is probable that the performance condition will be achieved, net of an estimate of pre-vesting forfeitures over the requisite service period. We reassess the probability of vesting at each reporting period for awards with performance conditions and adjusts compensation cost based on its probability assessment, unless on certain situations, we may not be able to determine that it is probable that a performance condition will be satisfied until the event occurs.

Share options

In determining the fair value of share options granted, a binomial option-pricing model is applied. The determination of the fair value is affected by the stock price of JOYY at the Nasdaq Global Select Market, as well as assumptions regarding a number of complex and subjective variables, including risk-free interest rates, exercise multiples, expected forfeiture rates, the expected share price volatility rates, and expected dividends.

During the years ended December 31, 2019, 2020 and 2021, we granted share options to employees of 438,100, nil, and nil, respectively, pursuant to the Amended and Restated 2011 Share Incentive Plan.

Restricted share units

In determining the fair value of restricted share units granted, the fair value of the underlying shares of JOYY on the grant dates is applied. The grant date fair value of restricted share units is based on stock price of JOYY at the Nasdaq Global Select Market.

For the years ended December 31, 2019, 2020 and 2021, 16,114,095, 62,770,405 and 9,387,270 restricted share units of JOYY were granted to our employees, respectively, pursuant to the Amended and Restated 2011 Share Incentive Plan.

Restricted shares

Upon the acquisition of Bigo, Class A common shares were issued for the replacement awards to Bigo's employees to replace their original share-based awards, namely restricted shares.

In determining the fair value of restricted shares granted to Bigo's employees, the fair value of the underlying shares of JOYY on the grant dates is applied. The grant date fair value of restricted shares is based on stock price of JOYY at the Nasdaq Global Select Market.

For the years ended December 31, 2019, 2020 and 2021, 16,041,327, 4,541,086 and 7,888,160 restricted shares of JOYY were granted to our employees, respectively.

Acquisitions

We apply the purchase method of accounting to account for our acquisitions. The acquisition date is based on the date in which we acquire substantive, or effective control of the business.

We estimate the fair value of an acquired business, using the income approach, which we believe is most appropriate to determine the fair value in an orderly transaction between market participants. Under the income approach, we determine the fair value of an acquired business based on the estimated future cash flows discounted by an estimated weighted-average cost of capital, which reflects the overall level of inherent risk and the rate of return an outside investor would expect to earn. We base the cash flow projections on forecasted cash flows derived from the most recent annual financial forecast using a terminal value based on the perpetuity growth model.

We estimated the fair value of acquired trademarks using the relief from royalty method. The value is estimated as the present value of the after-tax cost savings at an appropriate discount rate. In terms of the fair value of the acquired user base, the excess earnings method was used. The value is estimated as the present value of the revenues calculated at an appropriate discount rate. Our determination of the fair values of acquired trademark and user base acquired involved the use of estimates and assumptions related to revenue growth rates, royalty rates, discount rates and attrition rates.

In estimating the fair value of the contingent consideration recognized on the acquisition date, we consider the trinomial tree model. Under this model, we perform a scenario analysis and calculate the fair value of the contingent consideration based on the net present value of the total contingent payments under each scenario and the expected probability of each scenario.

The identifiable assets acquired and liabilities and contingent liabilities assumed in a business acquisition are measured initially at the fair value at the acquisition date. The excess of the cost of acquisition over the fair value of the identifiable net assets acquired is recorded as goodwill.

We are responsible for determining the fair value of the equity issued, assets acquired, liabilities assumed and intangibles identified as of the relevant acquisition date. Post-acquisition expenses are charged to general and administrative expenses directly.

Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business.

We assess goodwill for impairment in accordance with ASC Subtopic 350-20, Intangibles—Goodwill and Other: Goodwill (“ASC 350-20”), which requires that goodwill be tested for impairment at the reporting unit level at least annually and more frequently upon the occurrence of certain events, as defined by ASC 350-20. A reporting unit is defined as an operating segment or one level below an operating segment referred to as a component. We determine our reporting units by first identifying its operating segments, and then assesses whether any components of these segments constituted a business for which discrete financial information is available and where our segment manager regularly reviews the operating results of that component. We determined that we have one reporting unit because components below the consolidated level either did not have discrete financial information or their operating results were not regularly reviewed by the segment manager.

In January 2017, the FASB issued ASU 2017-04, Simplifying the Test for Goodwill Impairment, which simplifies the accounting for goodwill impairment by eliminating Step two from the goodwill impairment test. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, versus determining an implied fair value in Step two to measure the impairment loss. We adopted this guidance on a prospective basis on January 1, 2020 with no material impact on its consolidated financial statements and related disclosures as a result of adopting the new standard.

We have the option to assess qualitative factors first to determine whether it is necessary to perform the quantitative impairment test in accordance with ASC 350-20. If we believe, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount, the quantitative impairment test described above is required. Otherwise, no further testing is required. In the qualitative assessment, we consider primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. The quantitative goodwill impairment test, used to identify both the existence of impairment and the amount of impairment loss, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit is greater than zero and its fair value exceeds its carrying amount, goodwill of the reporting unit is considered not impaired.

We perform annual goodwill impairment test of each reporting unit in the fourth quarter, or more frequently, if certain events or circumstances warrant. Events or changes in circumstances which might indicate potential impairment in goodwill include the entity-specific factors, including, but not limited to, stock price volatility, market capitalization relative to net book value, and projected revenue, market growth and operating results.

We have performed a goodwill impairment analysis in the fourth quarter of 2019, 2020 and 2021. When determining the fair value of Bigo reporting unit, we used the income approach. The income approach determines fair value based on discounted cash flow models derived from the reporting units' long-term forecasts which included a five-year future cash flow projection and an estimated terminal value impairment analysis of 2021. The discounted cash flow model included a number of significant unobservable inputs. Key assumptions used to determine the estimated fair value include: (a) the five-year future cash flows forecasts including expected revenue growth, (b) an estimated terminal value using a terminal year long-term future growth rate determined based on the growth prospects of the reporting units; and (c) a discount rate that reflects the weighted-average cost of capital adjusted for the relevant risk associated with each reporting unit's operations and the uncertainty inherent in our internally developed forecasts. These key assumptions are subject to uncertainties and actual results may not be the same as the forecasted amounts. For example, our efforts to attract more paying users and increase the spending level of paying users may not be as successful as forecasted and therefore the actual revenue growth may not be as high as forecasted. Based on our assessment, the fair value of Bigo segment reporting units exceeded their carrying value by around 10% of their carrying value of the Bigo reporting unit as of December 31, 2021.

As of December 31, 2020 and 2021, the fair value of our reporting unit was substantially greater than the respective carrying value, and therefore goodwill related to our reporting unit was not impaired.

Intangible assets

Intangible assets mainly consist of trademark, customer relationship, non-compete agreement, operating rights, software, domain names, technology, license and others. Identifiable intangible assets are carried at acquisition cost less accumulated amortization and impairment loss, if any. Finite-lived intangible assets are tested for impairment if impairment indicators arise. Amortization of finite-lived intangible assets is computed using the straight-line method over their estimated useful lives.

Intangible assets mainly including trademark, customer relationships and technology that are acquired in business acquisitions are recognized apart from goodwill if the intangible assets arise from contractual or other legal rights, or are separately identifiable if the intangible assets do not arise from contractual or other legal rights.

We estimated the fair value of acquired trademark using the relief from royalty method. The value is estimated as the present value of the after-tax cost savings at an appropriate discount rate. In terms of the fair value of the acquired customer relationships and technology, the excess earnings method was used. The value is estimated as the present value of the revenues calculated at an appropriate discount rate. Our determination of the fair values of acquired trademark, customer relationships and technology acquired involved the use of estimates and assumptions related to revenue growth rates, royalty rates, discount rates and attrition rates.

Impairment of investments and long-lived assets

The carrying amounts of investments, mainly including equity investments accounted for using the equity method and equity investments without readily determinable fair values, and long-lived assets are evaluated for impairment whenever events or changes (triggering events) indicate that the carrying amount of an asset may no longer be recoverable. The impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. We test impairment of long-lived assets at the asset group level, the lowest level of assets with discrete cash flows.

Impairment charges related to equity investments referred to above and long-lived assets were recorded in general and administrative expenses for the years ended December 31, 2019, 2020 and 2021, totaling US$10.1 million, US$6.2 million and US$93.6 million, respectively.

Taxation and uncertain tax positions

Current income taxes are provided on the basis of net income for financial reporting purposes, adjusted for income and expense items which are not assessable or deductible for income tax purposes in accordance with the regulations of the relevant tax jurisdictions. Deferred income taxes are accounted for using an asset and liability method. Under this method, deferred income taxes are recognized for the tax consequences of temporary differences by applying enacted statutory rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. The tax base of an asset or liability is the amount attributed to that asset or liability for tax purpose. The effect on deferred taxes of a change in tax rates is recognized in statement of comprehensive income in the period of change. A valuation allowance is provided to reduce the amount of deferred tax assets if it is considered more likely than not that some portion of, or all of the deferred tax assets will not be realized.

We currently have deferred tax assets resulting from net operating loss carryforwards and deductible temporary differences, all of which are available to reduce future tax payable in our significant tax jurisdictions. The largest component of our deferred assets are the temporary differences generated by our PRC subsidiary and VIE due to recognition of the deferred revenue. In assessing whether such deferred tax assets can be realized in the future, we need to make judgments and estimates on the ability of each of our PRC subsidiary and VIE to generate taxable income in the future years. To the extent that we believe it is more likely than not that some portion or the entire amount of deferred tax assets will not be realized, we established a total valuation allowance to offset the deferred tax assets. As of December 31, 2019, 2020 and 2021, a total valuation allowance of US$87.1 million and US$150.3 million and US$213.7 million, respectively, was recognized against deferred tax assets. If we subsequently determine that all or a portion of the temporary differences are more like than not to be realized, the valuation allowance will be fully or partially released, which will result in a tax benefit in our consolidated statements of operations.

The guidance on accounting for uncertainties in income taxes prescribes a more likely than not threshold for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. Guidance was also provided on derecognition of income tax assets and liabilities, classification of current and deferred income tax assets and liabilities, accounting for interest and penalties associated with tax positions, accounting for income taxes in interim periods, and income tax disclosures. Significant judgment is required in evaluating our uncertain tax positions and determining the relevant provision for income taxes. We recognize interests and penalties, if any, under accrued expenses and other current liabilities on the balance sheet and under other expenses in the statements of other comprehensive income. We did not recognize any significant interest and penalties associated with uncertain tax positions for the years ended December 31, 2019, 2020 and 2021. As of December 31, 2019, 2020 and 2021, we did not have any significant unrecognized uncertain tax positions.

Foreign currency translation

We use U.S. dollar as our reporting currency. The functional currency of our Company and our subsidiaries incorporated in the Cayman Islands, British Virgin Islands, Hong Kong, Singapore, United States, India, Egypt and other regions is U.S. dollar or their respective local currency, while the functional currency of the other subsidiaries incorporated in PRC is RMB. In the consolidated financial statements, the financial information of our Company and our subsidiaries, which use RMB or their respective local currency as their functional currency, have been translated into U.S. dollar. Assets and liabilities are translated at the exchange rates on the balance sheet date, equity amounts are translated at historical exchange rates, and revenues, expenses, gains and losses are translated using the average rate for the period. Translation adjustments arising from these are reported as foreign currency translation adjustments and are shown as a component of other comprehensive income or loss in the statement of comprehensive income.

Foreign currency transactions denominated in currencies other than functional currency are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are remeasured at the applicable rates of exchange in effect at that date. Foreign exchange gains and losses resulting from the settlement of such transactions and from remeasurement at year-end are recognized in foreign currency exchange gains/losses, net in the consolidated statement of comprehensive income.

Convertible Bonds

Before January 1, 2021, we determine the appropriate accounting treatment of our convertible bonds in accordance with the terms in relation to the conversion feature, call and put options, and beneficial conversion feature. After considering the impact of such features, we may account for such instrument as a liability in its entirety, or separate the instrument into debt and equity components following the respective guidance described under ASC 815 Derivatives and Hedging and ASC 470 Debt. The debt discount, if any, together with related issuance cost are subsequently amortized as interest expense, using the effective interest method, from the issuance date to the earliest conversion date. Interest expenses are recognized in the statement of comprehensive income in the period in which they are incurred.

On January 1, 2021, we early adopted ASU 2020-06, “Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity” using modified-retrospective transition approach. Pursuant to ASU 2020-06, the embedded conversion features no longer are separated from the host contract for convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, Derivatives and Hedging, or that do not result in substantial premiums accounted for as paid-in capital. Consequently, a convertible debt instrument will be accounted for as a single liability measured at its amortized cost as long as no other features require bifurcation and recognition as derivatives. Following the adoption of this guidance, the amount previously allocated to additional paid-in capital was reclassified as a liability and a cumulative effect adjustment of US$86.7 million was credited to retained earnings as of January 1, 2021.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

The following table sets forth information regarding our directors and executive officers as of the date of this annual report. There are no family relationships among any of the directors or executive officers of our company.

Directors and Executive Officers	Age	Position/Title
David Xueling Li	47	Chairman of the Board and Director, Chief Executive Officer
Qin Liu	49	Director
Peter Andrew Schloss	61	Independent Director
Richard Weidong Ji	54	Independent Director
David Tang	67	Independent Director
Ting Li	39	Chief Operating Officer
Fuyong Liu	38	General Manager of Finance

Mr. David Xueling Li is our co-founder and has been our chairman since August 2016. Mr. Li served as our chief executive officer since our inception to August 2016 and as our acting chief executive officer from May 2017 to April 2019. Currently, Mr. Li serves as our chief executive officer, focusing on broader corporate strategy and the development of new and emerging applications and products. Mr. Li also heads our international business, overseeing the business operations and development strategy of Bigo. Before founding our company, Mr. Li worked at Netease.com, Inc. from July 2003 to April 2005 and served as its chief editor. In 2000, Mr. Li founded CFP.cn, a website that provided a copyright trading platform for journalists and amateur photographers. Mr. Li received a bachelor's degree in philosophy from Renmin University of China in 1997.

Mr. Qin Liu has served as our director since June 2008. Mr. Liu co-founded 5Y Capital (formerly known as Morningside Venture Capital) in June 2007. Before co-founding 5Y Capital, Mr. Liu served various roles including as a business development director for investment at Morningside IT Management Services (Shanghai) Co. Ltd. from July 2000 to November 2008. Mr. Liu became a director of Xiaomi Corporation (HKEX: 1810) in May 2010, and currently serves as a non-executive director. Since December 2014, Mr. Liu has served as a director of Agora, Inc. (Nasdaq: API). Currently, Mr. Liu has also served as a non-executive director of XPeng Inc. (NYSE: XPEV, HKEX: 9868) since September 12, 2019. Mr. Liu received a bachelor's degree in industrial electrical automation from University of Science and Technology Beijing in July 1993, and a master's degree in business administration from China Europe International Business School in April 2000.

Mr. Peter Andrew Schloss has served as our independent director since November 2012. Mr. Schloss is managing director and CEO of Castle Hill Partners. He is also an independent director and audit committee chairman of Bright Scholar Education Holdings (NYSE: BEDU). Previously Mr. Schloss was an independent director and audit committee chairman of Giant Interactive Group Inc., and an independent director of Zhaopin Limited. From 2008 to 2012, Mr. Schloss served as the chief executive officer of Allied Pacific Sports Network Limited, a leading internet and wireless provider of live and on-demand sports programs in Asia. Prior to joining Allied Pacific Sports Network Limited, Mr. Schloss worked at TOM Online Inc., serving as the chief financial officer from 2003 to 2005, as an executive director from 2004 to 2007 and as the chief legal officer from 2005 to 2007. Mr. Schloss received a bachelor's degree in political science and a juris doctor degree from Tulane University.

Mr. Richard Weidong Ji has served as our independent director since May 2013. Mr. Ji currently also serves on the board of directors of Full Truck Alliance Co. Ltd. (NYSE: YMM). Mr. Ji is the cofounder and managing partner of All-Stars Investment Limited, which focuses on investing in Internet technology leaders, such as Didi, SenseTime, Lufax, Xiaomi and Grab. From 2005 to 2012, Mr. Ji served as managing director and head of Asia-Pacific Internet/media investment research at Morgan Stanley Asia Limited. During his time with Morgan Stanley, Mr. Ji was consistently rated as one of the top internet analysts covering the Chinese internet according to the Institutional Investor and Greenwich Associates' annual surveys. Over Mr. Ji's career, he has received many awards from reputable publications and research groups including the Financial Times, South China Morning Post, Asiamoney, Absolute Return & Alpha magazine and iResearch Consulting Group. Mr. Ji holds a doctor of sciences degree from Harvard University, an MBA from the Wharton School of Business at the University of Pennsylvania and a Bachelor of Science from Fudan University in China.

Mr. David Tang has served as our independent director since May 2013. Mr. Tang currently serves as a managing director of Nokia Growth Partners, a global venture capital firm that specializes in investing in mobile technologies and mobile businesses. From 2011 to 2012, Mr. Tang was the vice president of the European Union Chamber of Commerce in China, vice chairman of the China Association of Enterprises with Foreign Investments, and vice chairman of the Beijing International Chamber of Commerce. Mr. Tang has spent nearly a decade with the Nokia group, having served as the vice chairman of Nokia (China) Investment Co., Ltd. and chairman of Nokia Telecommunications Ltd. where he was responsible for government relations, strategic partnerships, corporate development, and sustainability. Prior to serving in those roles, he was the vice chairman and vice president of sales for Nokia in the greater China region from 2005 to 2009. Mr. Tang has also held executive positions in other leading global technology firms such as Apple, AMD, 3Com, DEC, and AST. Mr. Tang received his bachelor's degree in Computer Science and Engineering from California State University at Long Beach and a master's degree in Business from California State University at Fullerton.

Ms. Ting Li has served as our chief operating officer since 2016. Ms. Li has been focusing on our ecosystem development and the enrichment of our content and product offerings since she joined us in 2011. In 2017, Ms. Li was in charge of the updates and launch of YY Live 7.0, which for the first time in the industry observed and satisfied user demand for personalized interactions with live streaming hosts. Prior to joining us, Ms. Li served as product manager at Tencent from 2006 to 2011. Ms. Li received a bachelor's degree from South China University of Technology in 2006.

Mr. Fuyong Liu has served as our general manager of the finance department since September 2019, responsible for our company's overall finance activities. Prior to joining us, Mr. Liu was with Huawei, most recently as chief financial officer of its Norway Region from April 2018 to September 2019, and prior to that, he held various finance positions for Huawei in China, Singapore and South America between 2009 and 2018. Mr. Liu received a master's degree in Economics from Nankai University in China.

B. Compensation of Directors and Executive Officers

For the fiscal year ended December 31, 2021, we paid an aggregate of US$1.7 million in cash, including salaries and bonuses, to our directors and executive officers. For details on the share incentive grants to our directors and officers, see "—Share Incentive Plans." For the fiscal year ended December 31, 2021, we made contributions for our directors and executive officers for their pension insurance, medical insurance, housing fund, unemployment and other statutory benefits in an aggregate amount of US$0.06million. We did not set aside or accrue any other pension or retirement benefits for our directors and executive officers for the fiscal year ended December 31, 2021.

Employment Agreements

We have entered into employment agreements with our senior executive officers. We may terminate a senior executive officer's employment for cause at any time without remuneration for certain acts of the officer, such as being convicted of any criminal conduct, any act of gross or willful misconduct or any serious, willful, grossly negligent or persistent breach of any employment agreement provision, or engaging in any conduct which may make the continued employment of such officer detrimental to our company. We may also terminate a senior executive officer's employment by giving three months' prior written notice. A senior executive officer may terminate his or her employment at any time by giving three months' written notice, provided that such notice may only be given by the officer any time after the third anniversary of his or her employment.

Each senior executive officer has agreed to hold all information, know-how and records in any way connected with the business of our company, including, without limitation, all formulae, designs, specifications, drawings, data, operations and testing procedures, manuals and instructions and all customer and supplier lists, sales information, business plans and forecasts and all technical or other expertise and all computer software of our company, in strict confidence during and after his or her employment. Each officer also agrees that we shall own all the intellectual property developed by such officer during his or her employment.

Share Incentive Plans

We have adopted three share incentive plans, namely, the 2009 Scheme, the Amended and Restated 2011 Plan and the 2019 Arrangement. The purpose of these share incentive plans is to attract and retain personnel by linking the personal interests of the members of the board, officers, employees and consultants to the success of our business and by providing such individuals with an incentive for outstanding performance.

As of March 31, 2022, options to purchase 9,414,400 Class A common shares, 16,154,922 restricted shares and 44,755,859 restricted share units were outstanding under the 2009 Scheme, the Amended and Restated 2011 Plan and the 2019 Arrangement.

2009 Employee Equity Incentive Scheme

We adopted the 2009 Scheme in December 2009. In September 2011, YY Inc. assumed all the rights and obligations of Duowan Entertainment Corporation under all share-based compensation previously issued by Duowan Entertainment Corporation, including under the relevant award agreement and under the 2009 Scheme, if applicable, and undertook to issue its own common shares upon the exercise of any share-based compensation awards previously issued by Duowan Entertainment Corporation, subject to compliance with the terms and conditions of the relevant award agreements and the 2009 Scheme, if applicable. The 2009 Scheme expired in December 2019. No further awards will be granted under the 2009 Scheme and the provisions under the 2009 Scheme will remain in effect to the extent necessary to effect the exercise of any options granted prior to the expiration or otherwise as may be required in accordance with the 2009 Scheme.

Under the 2009 Scheme, the maximum number of shares in respect of which options or restricted shares may be granted is 120,020,001.

The following paragraphs summarize the terms of the 2009 Scheme.

Types of Awards. The following briefly describe the principal features of the various awards that may be granted under the 2009 Scheme.

- Options. Options provide for the right to purchase a specified number of our common shares at a specified price and usually will become exercisable at the discretion of our plan administrator in one or more installments after the grant date. The option exercise price may be paid, subject to the discretion of the plan administrator, in cash or check, in our common shares which have been held by the option holder for such period of time as may be required to avoid adverse accounting consequences, in other property with value equal to the exercise price, through a broker-assisted cashless exercise, or by any combination of the foregoing.

- Restricted Shares. A restricted share award is the grant of our common shares which are subject to certain restrictions and may be subject to risk of forfeiture. Unless otherwise determined by our plan administrator, a restricted share is nontransferable and may be forfeited or repurchased by us upon termination of employment or service during a restricted period. Our plan administrator may also impose other restrictions on the restricted shares, such as limitations on the right to vote or the right to receive dividends.

Plan Administration. Our board or a committee of one or more members of our board duly authorized for the purpose of the 2009 Scheme can act as the plan administrator.

Award Agreement. Options or restricted shares granted under the 2009 Scheme are evidenced by an award agreement that sets forth the terms, conditions and limitations for each grant.

Option Exercise Price. The exercise price in respect of any option shall be fixed by reference to the date upon which the option (or the relevant part thereof) is granted, and shall be, at the election of the plan administrator, (a) the latest valuation price per share certified by a third-party valuer prior to the date of grant of the relevant option (or relevant part thereof) or (b) the latest price per share at which we have issued any shares prior to the date of grant of the relevant option (or relevant part thereof).

Eligibility. We may grant awards to our employees, officers and directors or consultants to our members.

Term of the Awards. The 2009 Scheme shall be valid and effective for a period of ten years from the date of effectiveness. The term of each option or restricted share grant shall be ten years from the date of the grant.

Vesting Schedule. In general, the plan administrator determines the vesting schedule, which is set forth in the award agreement.

Transfer Restrictions. Awards for options or restricted shares may not be transferred in any manner by the award holders and may be exercised only by such holders, subject to limited exceptions. Restricted shares may not be transferred during the period of restriction.

Termination. The plan administrator may at any time terminate the operation of the 2009 Scheme.

Prior to the adoption of the 2009 Scheme, we granted certain share options to our employees pursuant to certain share option agreements which carried substantially the same terms and conditions with those stipulated in the 2009 Scheme.

Amended and Restated 2011 Share Incentive Plan

We adopted the original 2011 share incentive plan in September 2011, which was amended in October 2012 and further amended and restated in September 2021. Upon the adoption of the Amended and Restated 2011 Share Incentive Plan, or the Amended and Restated 2011 Plan, it replaced the previously adopted 2011 share incentive plan in its entirety and the awards granted and outstanding thereunder remain effective and binding under the Amended and Restated 2011 Share Incentive Plan. Under the Amended and Restated 2011 Plan, the maximum number of common shares reserved for issuance under the plan is 131,950,949, plus an annual increase of 20,000,000 on the first day of each fiscal year, beginning in 2022, or such smaller number of common shares as determined by our board of directors. As of March 31, 2022, the maximum aggregate number of shares which may be issued under the Amended and Restated 2011 Plan is 151,950,949, subject to further adjustments. As of March 31, 2022, awards to purchase 54,976,331 Class A common shares under the Amended and Restated 2011 Plan have been granted and outstanding, excluding awards that were forfeited, canceled or exercised after the relevant grant dates.

The following paragraphs summarize the terms of the Amended and Restated 2011 Plan.

Types of Awards. The following briefly describe the principal features of the various awards that may be granted under the Amended and Restated 2011 Plan.

- *Options*. Options provide for the right to purchase a specified number of our common shares at a specified price and usually will become exercisable at the discretion of our plan administrator in one or more installments after the grant date. The option exercise price may be paid, subject to the discretion of the plan administrator, in cash or check, in our common shares which have been held by the option holder for such period of time as may be required to avoid adverse accounting consequences, in other property with value equal to the exercise price, through a broker-assisted cashless exercise, or by any combination of the foregoing.

- *Restricted Shares*. A restricted share award is the grant of our common shares which are subject to certain restrictions and may be subject to risk of forfeiture. Unless otherwise determined by our plan administrator, a restricted share is nontransferable and may be forfeited or repurchased by us upon termination of employment or service during a restricted period. Our plan administrator may also impose other restrictions on the restricted shares, such as limitations on the right to vote or the right to receive dividends.

- *Restricted Share Units*. A restricted share unit award is the grant of the right to receive a common share at a future date and may be subject to forfeiture. Our plan administrator has the discretion to set performance objectives or other vesting criteria that will determine the number or value of restricted share units to be granted. Unless otherwise determined by our plan administrator, a restricted share unit is nontransferable and may be forfeited or repurchased by us upon termination of employment or service during a restricted period. Our plan administrator, at the time of grant, specifies the dates on which the restricted share units become fully vested.

Plan Administration. Our board or a committee of one or more members of our board duly authorized for the purpose of the Amended and Restated 2011 Plan can act as the plan administrator.

Award Agreement. Options, restricted shares or restricted shares units granted under the Amended and Restated 2011 Plan are evidenced by an award agreement that sets forth the terms, conditions and limitations for each grant.

Option Exercise Price. The exercise price in respect of any option shall be determined by the plan administrator and set forth in the award agreement which may be a fixed or variable price related to the fair market value of the shares. The exercise price per share subject to an option may be amended or adjusted in the absolute discretion of the plan administrator, the determination of which shall be final, binding and conclusive.

Eligibility. We may grant awards to our employees, consultants or directors.

Term of the Awards. The Amended and Restated 2011 Plan shall be valid and effective for a period of ten years from the date of effectiveness, which is the date of its adoption by our board of directors. The term of each option grant shall not exceed ten years from the date of the grant.

Vesting Schedule. In general, the plan administrator determines the vesting schedule, which is set forth in the award agreement.

Transfer Restrictions. Awards for options, restricted shares or restricted share units may not be transferred in any manner by the award holders and may be exercised only by such holders, subject to limited exceptions. Restricted shares may not be transferred during the period of restriction.

Termination. The plan administrator may at any time terminate the operation of the Amended and Restated 2011 Plan.

2019 Share Incentive Awards Arrangement

We adopted the 2019 Arrangement in March 2019, pursuant to which we can offer share-based awards to employees of Bigo. The 2019 Arrangement reserved 65,922,045 Class A common shares for incentive awards to be granted.

In the event of any dividend, share split, combination or exchange of common shares, amalgamation, arrangement or consolidation, spin-off, recapitalization or other distribution (other than normal cash dividends) of our assets to our shareholders, or any other change affecting the shares of common shares or the share price of a common share, the board of directors shall make such proportionate adjustments, if any, as the board of directors in its discretion may deem appropriate to reflect such change with respect to (a) the aggregate number and type of shares that may be issued under the 2019 Arrangement; (b) the terms and conditions of any outstanding awards (including, without limitation, any applicable performance targets or criteria with respect thereto); and (c) the grant or exercise price per share for any outstanding awards under the 2019 Arrangement.

Grants of Options

The following table summarizes, as of March 31, 2022, the outstanding options granted to our executive officers, directors and other individuals as a group under the Amended and Restated 2011 Plan.

	Common Shares Underlying Options Awarded	Exercise Price (US$/Share)	Date of Grant	Date of Expiration
Ting Li	*	4.7025	June 30, 2018	June 30, 2026
	*	3.5350	June 30, 2018	June 30, 2025
	*	3.5350	June 30, 2019	June 30, 2025

* The aggregate number of common shares underlying the outstanding options held by this individual is less than 1% of our total outstanding shares.

Grants of Restricted Shares

As of March 31, 2022, the total amount of outstanding restricted shares granted to our executive officers, directors and other individuals as a group under the 2009 Scheme, the Amended and Restated 2011 Plan and the 2019 Arrangement is 16,154,922, among which no restricted shares are granted to our directors or management team.

Grants of Restricted Share Units

The following table summarizes, as of March 31, 2022, the outstanding restricted share units granted to our executive officers, directors and other individuals as a group under the 2009 Scheme and the Amended and Restated 2011 Plan.

Name	Common Shares Underlying Restricted Share Units Granted	Date of Grant
David Xueling Li	*	April 30, 2013
	*	June 20, 2014
Peter Andrew Schloss	*	November 7, 2012
	*	June 16, 2014
	*	November 7, 2015
Richard Weidong Ji	*	May 23, 2013
	*	June 16, 2014
David Tang	*	May 23, 2013
	*	June 16, 2014
Qin Liu	*	August 6, 2015
Ting Li	*	April 30, 2013
	*	June 20, 2014
	*	July 1, 2015
	*	June 30, 2018
	*	June 30, 2019
Fuyong Liu	*	December 30,2019
Other Individuals as a Group	38,021,339	January 1, 2011 to March 31, 2022
Total	44,755,859	

* The aggregate number of common shares underlying the outstanding restricted share units, or RSUs, held by each of these individuals is less than 1% of our total outstanding shares.

C. Board Practices

Our board of directors currently consists of five directors. A director is not required to hold any shares in our company to qualify to serve as a director. A director may vote with respect to any contract, proposed contract, or arrangement in which he or she is materially interested. A director may exercise all the powers of the company to borrow money, mortgage its business, property and uncalled capital, and issue debentures or other securities whenever money is borrowed or as security for any obligation of the company or of any third party. See “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers” for a description of the employment agreements we have entered into with our senior executive officers.

Committees of the Board of Directors

We have established an audit committee, a compensation committee, a corporate governance and nominating committee and an investment committee under the board of directors. We have adopted a charter for each of the audit committee, compensation committee and the corporate governance and nominating committee. Each committee's members and functions are described below.

Audit Committee. Our audit committee consists of Mr. Peter Andrew Schloss, Mr. David Tang and Mr. Richard Weidong Ji, and is chaired by Mr. Schloss. We have determined that each of Mr. Schloss, Mr. Tang and Mr. Ji satisfies the "independence" requirements of Rule 5605(c)(2) of the Listing Rules of the Nasdaq Global Select Market and meet the independence standards under Rule 10A-3 under the Securities Exchange Act of 1934, as amended. We have determined that Mr. Schloss qualifies as an "audit committee financial expert." The audit committee oversees our accounting and financial reporting processes and the audits of the financial statements of our company. The audit committee is responsible for, among other things:

- selecting the independent registered public accounting firm and pre-approving all auditing and non-auditing services permitted to be performed by the independent registered public accounting firm;
- reviewing with the independent registered public accounting firm any audit problems or difficulties and management's response;
- reviewing and approving all proposed related party transactions, as defined in Item 404 of Regulation S-K under the Securities Act;
- discussing the annual audited financial statements with management and the independent registered public accounting firm;
- reviewing major issues as to the adequacy of our internal controls and any special audit steps adopted in light of any material control deficiencies;
- annually reviewing and reassessing the adequacy of our audit committee charter;
- meeting separately and periodically with management and the independent registered public accounting firm; and
- reporting regularly to the board.

Compensation Committee. Our compensation committee consists of Mr. David Xueling Li and Mr. David Tang, and is chaired by Mr. David Xueling Li. We have determined that Mr. Tang satisfies the "independence" requirements of Rule 5605(c)(2) of the Listing Rules of the Nasdaq Global Select Market. The compensation committee assists the board in reviewing and approving the compensation structure, including all forms of compensation, relating to our directors and executive officers. Our directors may not be present at any committee meeting during which their compensation is deliberated upon. The compensation committee is responsible for, among other things:

- reviewing the total compensation package for our executive officers and making recommendations to the board with respect to it;
- approving and overseeing the total compensation package for our executives other than the three most senior executives;
- reviewing the compensation of our directors and making recommendations to the board with respect to it;
- periodically reviewing and approving any long-term incentive compensation or equity plans, programs or similar arrangements, annual bonuses, and employee pension and welfare benefit plans; and
- selecting compensation consultant, legal counsel or other adviser only after taking into consideration all factors relevant to that person's independence from management.

Corporate Governance and Nominating Committee. Our nominating committee consists of Mr. David Tang, Mr. Qin Liu and Mr. Peter Andrew Schloss, and is chaired by Mr. Tang. We have determined that each of Mr. Tang and Mr. Schloss satisfies the "independence" requirements of Rule 5605(c)(2) of the Listing Rules of the Nasdaq Global Select Market. The nominating committee assists the board in selecting individuals qualified to become our directors and in determining the composition of the board and its committees. The nominating committee is responsible for, among other things:

- recommending nominees to the board for election or re-election to the board, or for appointment to fill any vacancy on the board;
- reviewing annually with the board the current composition of the board with regards to characteristics such as independence, age, skills, experience and availability of service to us;
- selecting and recommending to the board the names of directors to serve as members of the audit committee and the compensation committee, as well as of the nominating committee itself; and
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance.

Investment Committee. Our investment committee consists of Mr. Xueling Li and Mr. Qin Liu. The investment committee is responsible for negotiating and determining the nature, timing, amount and other terms of an investment if such investment amount ranges from US$50 million to US$200 million.

Duties of Directors

Under Cayman Islands law, our directors owe fiduciary duties to our company including a duty of loyalty, a duty to act honestly, and a duty to act in what they consider in good faith to be in our best interests. Our directors also have a duty to exercise the care and diligence that a reasonably prudent person would exercise in comparable circumstances and a duty to exercise the skill they actually possess. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association and the class rights vested thereunder in the holders of the shares. Our company has the right to seek damages if a duty owed by our directors is breached. In limited exceptional circumstances, a shareholder may have the right to seek damages in our name if a duty owed by our directors is breached.

Terms of Directors and Officers

Our officers are elected by and serve at the discretion of the board. Our directors are not subject to a term of office and hold office until such time as they resign or are removed from office by special resolution of our shareholders. A director will be removed from office automatically if, among other things, the director (1) becomes of unsound mind or dies, (2) without special leave of absence from our board, is absent from meetings of our board for six consecutive months and our board resolves that his office be vacated; (3) becomes bankrupt or has a receiving order made against him or suspends payment or compounds with his creditors; (4) is prohibited by law from being a director; or (5) ceases to be a director by virtue of any provision of the Companies act or other laws of the Cayman Islands or is removed from office pursuant to our articles of association.

Board Diversity Matrix

Board Diversity Matrix (As of March 31, 2022)	
Country of Principal Executive Offices	Singapore
Foreign Private Issuer	Yes
Disclosure Prohibited Under Home Country Law	No
Total Number of Directors	5

	Female	Male	Non-Binary	Did Not Disclose Gender
Part I: Gender Identity				
Directors	—	5	—	—
Part II: Demographic Background				
Underrepresented Individual in Home Country Jurisdiction		—		
LGBTQ+		—		
Did Not Disclose Demographic Background		—		

D. Employees

The following table sets forth the numbers of our employees, categorized by function, as of December 31, 2021:

Functions	Number of Employees	Percentage
Customer services and operations	4,016	54%
Research and development	2,660	36%
Sales and marketing	294	4%
General and administration	479	6%
Total	7,449	100%

We had a total of 9,273, 7,931 and 7,449 employees as of December 31, 2019, 2020 and 2021, respectively. The decrease of employees was primarily due to the deconsolidation of Huya and YY Live, partially offset by the increase of employees as we expand our global operations. We have developed a corporate culture that encourages initiative, technical superiority and self-development. In addition, we periodically evaluate our employees' performance and provide them with training sessions tailored to each job function to enhance performance and service quality.

As of March 31, 2022, we had a substantial number of employees in China. As required by regulations in China, we participate in various employee social security plans that are organized by municipal and provincial governments, including pension, unemployment insurance, childbirth insurance, work-related injury insurance, medical insurance and housing insurance. We are required under PRC law to make contributions to employee benefit plans at specified percentages of the salaries, bonuses and certain allowances of our employees, up to a maximum amount specified by the local government from time to time. We believe that we maintain a good working relationship with our employees and we have not experienced any significant labor disputes.

E. Share Ownership

Class A Common Shares

As of March 31, 2022, we had 1,091,392,968 Class A common shares outstanding (excluding 226,447,496 outstanding restricted shares and treasury Class A common shares held by entities controlled by us).

Class B Common Shares

As of March 31, 2022, we had 326,509,555 Class B common shares outstanding.

Beneficial Ownership

The following table sets forth information concerning the beneficial ownership of our common shares as of March 31, 2022, by:

- each of our directors and executive officers; and
- each person known to us to beneficially own 5% or more of our common shares.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire or that would become unrestricted shares within 60 days after March 31, 2022, the most recent practicable date, including through the exercise of any option, warrant, or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person.

The calculations in the table below assume that there were 1,091,392,968 Class A common shares outstanding (excluding 226,447,496 outstanding restricted shares and treasury Class A common shares held by entities controlled by us) and 326,509,555 Class B common shares as of March 31, 2022.

	Class A Common Shares Beneficially Owned(1)	Class B Common Shares Beneficially Owned(2)	Total Common Share Beneficially Owned		Total Voting Power(5)
	Number	Number	Number(3)	%(4)	%
Directors and Executive Officers:*					
David Xueling Li(6)	160,505,284	203,768,062	364,273,346	25.6	78.5
Qin Liu	**	—	**	**	**
Peter Andrew Schloss	**	—	**	**	—
Richard Weidong Ji	**	—	**	**	**
David Tang	**	—	**	**	—
Ting Li	**	—	**	**	**
Fuyong Liu	**	—	**	**	**
All directors and executive officers as a group	183,375,949	203,768,062	387,144,011	27.1	78.9
Principal Shareholders:					
Top Brand Holdings Limited (7)	—	122,741,483	122,741,483	8.7	—
YYME Limited (8)	156,340,804	203,768,062	360,108,866	25.4	50.4
T. ROWE PRICE ASSOCIATES, INC.(9)	107,383,120	—	107,383,120	7.6	2.5

Notes:

* Except for Mr. Peter Andrew Schloss, Mr. Richard Weidong Ji, Mr. David Tang and Mr. Qin Liu, the business address of our directors and executive officers is c/o 30 Pasir Panjang Road #15-31A Mapletree Business City, Singapore 117440. The business address of Mr. Qin Liu is Suite 905-6, 9th Floor, ICBC Tower, Three Garden Road, Hong Kong. The business address of Mr. Peter Andrew Schloss is 602 Silver Tower, No. 2 Dong San Huan Bei Lu, Chaoyang District, Beijing 100027, PRC. The business address of Mr. Richard Weidong Ji is Suite 2103, Two Exchange Square, 8 Connaught Place, Central, Hong Kong. The business address of Mr. David Tang is Room 710, Office Tower II, China World Trade Centre, No.1 Jianguomenwai Avenue, Beijing 100004, PRC.

** The aggregate number of common shares beneficially owned by each of these individuals is less than 1% of our total outstanding shares.

(1) For each person and group included in this column, percentage ownership is calculated by dividing the number of Class A common shares beneficially owned by such person or group, including shares that such person or group has the right to acquire within 60 days of March 31, 2022, by the sum of (i) 1,091,392,968 which is the total number of Class A common shares outstanding as of March 31, 2022 (excluding 226,447,496 outstanding restricted shares and treasury Class A common shares held by entities controlled by us), and (ii) the number of Class A common shares that such person or group has the right to acquire within 60 days after March 31, 2022.

(2) For each person and group included in this column, percentage ownership is calculated by dividing the number of Class B common shares beneficially owned by such person or group by 326,509,555, being the total number of Class B common shares outstanding as of March 31, 2022.

(3) Represents the sum of Class A and Class B common shares beneficially owned by such person or group.

(4) For each person and group included in this column, percentage ownership is calculated by dividing the number of total common shares beneficially owned by such person or group, by the sum of the number of common shares outstanding and the number of common shares such person or group has the right to acquire upon exercise of the stock options or warrants within 60 days after March 31, 2022.

(5) For each person or group included in this column, the percentage of total voting power represents voting power based on both Class A and Class B common shares held by such person or group with respect to all of our outstanding Class A and Class B common shares as one class. Each holder of Class A common shares is entitled to one vote per share. Each holder of our Class B common shares is entitled to ten votes per share on all matters requiring a shareholders' vote. Our Class B common shares are convertible at any time by the holder into Class A common shares on a one-for-one basis, whereas Class A common shares are not convertible into Class B common shares under any circumstances.

(6) Representing (i) 156,340,804 Class A common shares (including 17,800,000 Class A common shares in the form of ADSs) and 199,448,382 Class B common shares held by YY One Limited, a British Virgin Islands company, (ii) 4,319,680 Class B common shares held by New Wales Holdings Limited, a British Virgin Islands company, and (iii) 4,164,480 Class A common shares underlying options and restricted share units granted to Mr. David Xueling Li that have vested or will become vested within 60 days of March 31, 2022. Mr. David Xueling Li is the sole owner and director of YYME Limited. Each of YY One Limited and New Wales Holdings Limited is wholly-owned by YYME Limited. In August 2016, Mr. Jun Lei, who beneficially owned 122,741,483 Class B common shares as of March 31, 2022, delegated the voting rights of such shares to Mr. David Xueling Li.

(7) Representing 122,741,483 Class B common shares held by Top Brand Holdings Limited, a BVI company wholly owned and controlled by Mr. Jun Lei. The voting rights of such 122,741,483 Class B common shares were delegated to Mr. David Xueling Li in August 2016. The business address of Top Brand Holdings Limited is c/o Jun Lei, 19E, Huating Jiayuan, No.6 of Middle Beisihuan Road, Chaoyang District, Beijing 100102, PRC.

(8) Representing (i) 156,340,804 Class A common shares and 199,448,382 Class B common shares held by YY One Limited, a British Virgin Islands company, and (ii) 4,319,680 Class B common shares held by New Wales Holdings Limited, a British Virgin Islands company. Mr. David Xueling Li is the sole owner and director of YYME Limited. Each of YY One Limited and New Wales Holdings Limited is wholly owned by YYME Limited. The business address of YYME Limited is c/o David Xueling Li, 30 Pasir Panjang Road #15-31A Mapletree Business City, Singapore 117440.

(9) Representing 107,383,120 Class A common shares (or Class A common shares represented by ADSs) beneficially owned by T. ROWE PRICE ASSOCIATES, INC., as reported in a Schedule 13G filed by T. ROWE PRICE ASSOCIATES, INC. with the SEC on February 14, 2022. Please see the Schedule 13G filed by T. ROWE PRICE ASSOCIATES, INC with the SEC on February 14, 2022 for information relating to T. ROWE PRICE ASSOCIATES, INC. The principal business office of T. ROWE PRICE ASSOCIATES, INC. is located at 100 E. Pratt Street, Baltimore, MD 21202, the United States.

As of March 31, 2022, 1,417,902,523 of our common shares were issued and outstanding, including 326,509,555 Class B common shares and 1,091,392,968 Class A common shares (excluding 226,447,496 outstanding restricted shares and treasury Class A common shares held by entities controlled by us). Based on a review of the register of members maintained by our Cayman Islands corporate administrator, we believe that as of March 31, 2022, none of our total outstanding shares were held by record holder in the United States. The number of beneficial owners of our ADSs in the United States is likely to be much larger than the number of record holders of our common shares in the United States. None of our existing shareholders have different voting rights from other shareholders in the same class. See "Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Employment Agreements" for a description of the employment agreements we have entered into with our senior executive officers.

Our common shares are divided into Class A common shares and Class B common shares. Holders of Class A common shares are entitled to one vote per share, while holders of Class B common shares are entitled to ten votes per share. We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our company.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

Please refer to “Item 6. Directors, Senior Management and Employees—E. Share Ownership.”

B. Related Party Transactions

VIE Structure Enhancement

Overview

We have completed the enhancement of the structure we use to hold our major variable interest entities so that we can better ensure the stability and proper governance of the variable interest entities as an integral part of our company, or the VIE Enhancement. The VIE Enhancement maintains the primary legal framework that we and many peer companies in our industry have adopted to operate businesses in which foreign investment is restricted or prohibited in the PRC.

Upon the completion of the VIE Enhancement for each VIE, the equity interest of each variable interest entity is, instead of being held by a few individuals, directly held by a PRC limited liability company, which in turn is indirectly held (through a layer of PRC limited partnerships) by selected individuals of the Company or our management who are PRC citizens. For our major variable interest entities, these individuals are Ting Li, Lin Song, and Di Fu (with respect to each of Guangzhou Huaduo and Guangzhou BaiGuoYuan).

With the completion of the VIE Enhancement, we believe we manage to:

(1) reduce the key man and succession risks associated with natural person VIE equity holders, through a new structure that has widely dispersed interests among natural person interest holders;

(2) create a VIE ownership structure that is more stable and self-sustaining, by distancing the natural person interest holders with the VIE with multiple layers of legal entities, including a partnership structure; and

(3) further enhance our control over the VIEs through multiple layers of contractual arrangements.

VIE equity holders after the VIE Enhancement

Pursuant to the VIE Enhancement, a variable interest entity is typically held by a PRC limited liability company. This PRC limited liability company is in turn be directly or indirectly owned by two PRC limited partnerships, each of which holds 50% of the equity interest. Each of these partnerships is comprised of (i) a PRC limited liability company, as general partner (which is formed by a number of selected individuals of the Company and our management who are PRC citizens), and (ii) the same group of natural persons, as limited partners. We may also create additional holding structures in the future in connection with the VIE Enhancement.

Following the VIE Enhancement, the designated wholly-owned entity, on the one hand, and the corresponding VIE and the multiple layers of legal entities above the VIE, as well as the natural persons described above, on the other hand, enter into contractual arrangements as summarized below, which are substantially similar to the contractual arrangements we have historically used for the variable interest entities.

Although we believe the VIE Enhancement can further improve our control over the variable interest entities, there continue to be risks associated with the VIE structure in general. See “D. Risk Factors— Risks Related to Our Corporate Structure.”

The following is a summary of our certain typical contractual arrangements.

Contractual Arrangements

The PRC government extensively regulates foreign ownership of, and the licensing and permit requirements pertaining to, companies that provide internet-based services such as our platforms. To comply with these restrictions, we conduct our operations primarily through Beijing Huanju Shidai's contractual arrangements with Beijing Tuda and its shareholders. Furthermore, we operate Bigo platform through: (i) a series of contractual arrangement among BaiGuoYuan Technology, Guangzhou BaiGuoYuan and its shareholders, (ii) a series of contractual arrangements among Guangzhou Wangxing, Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue and their shareholders, and (iii) a series of contractual arrangements among Guangzhou LianYiYun, Guangzhou AnSiChuang and its shareholder. Moreover, we operate certain other businesses through: (i) a series of contractual arrangements among Haishaman (Shanghai) Information Technology Co., Ltd., Shanghai Ruogu Information Technology Co., Ltd. and its shareholders, (ii) a series of contractual arrangements among Bluebuck Network Technology (Beijing) Co., Ltd., or Blue Buck, Guangzhou Blue Ocean Whale Riding Technology Co., Ltd., or Guangzhou Blue Ocean, Beijing Cengcengceng Information Technology Co., Ltd., or Beijing Cengcengceng, and its shareholder, and (iii) a series of contractual arrangements among Guangzhou Blue Ocean, Guangzhou Blue Whale Weaving Garment Co., Ltd., or Guangzhou Blue Whale, and the shareholders of Guangzhou Blue Whale. See "Item 3. Key Information—Cash and Asset Flows through Our Organization" and "Item 3. Key Information—Financial Information Related to the Variable Interest Entities" for details of transactions between our variable interest entities and our subsidiaries.

Contractual Arrangements with Beijing Tuda

The following is a summary of the currently effective contracts among our subsidiary, Beijing Huanju Shidai, a variable interest entity, Beijing Tuda, and the shareholders of Beijing Tuda.

Exclusive Business Cooperation Agreement

Under the exclusive business cooperation agreement between Beijing Huanju Shidai and Beijing Tuda, as amended, Beijing Huanju Shidai has the exclusive right to provide to Beijing Tuda technology support, business support and consulting services related to Beijing Tuda's business, the scope of which is to be determined by Beijing Huanju Shidai from time to time. Beijing Huanju Shidai owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Beijing Tuda to Beijing Huanju Shidai is up to 100% of the net profit of Beijing Tuda, and the timing and amount of the fee payments shall be determined at the sole discretion of Beijing Huanju Shidai. The term of this agreement will expire in 2039 and may be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai has sole discretion to terminate the agreement at any time by providing 30 days' prior written notice to Beijing Tuda, while neither Beijing Tuda nor its shareholders are entitled to terminate the agreement.

Exclusive Technology Support and Technology Services Agreement

Under the exclusive technology support and technology services agreement between Beijing Huanju Shidai and Beijing Tuda, as amended, Beijing Huanju Shidai has the exclusive right to provide to Beijing Tuda technology support and technology services related to all technologies needed for its business. Beijing Huanju Shidai owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Beijing Tuda to Beijing Huanju Shidai is 10% of Beijing Tuda's gross revenues. The term of this agreement will expire in 2029 and may be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai has sole discretion to terminate the agreement at any time by providing 30 days' prior written notice to Beijing Tuda, while neither Beijing Tuda nor its shareholders are entitled to terminate the agreement.

Powers of Attorney

Under the irrevocable powers of attorney executed by each shareholder of Beijing Tuda, each such shareholder appointed Beijing Huanju Shidai as its attorney-in-fact to exercise such shareholders' rights in Beijing Tuda, including, without limitation, the power to vote on its behalf on all matters of Beijing Tuda requiring shareholder approval under PRC laws and regulations and the articles of association of Beijing Tuda. Each power of attorney will remain in force until the shareholder ceases to hold any equity interest in Beijing Tuda.

Exclusive Option Agreement

Under the exclusive option agreement between Beijing Huanju Shidai, each of the shareholders of Beijing Tuda and Beijing Tuda, each of the shareholders irrevocably granted Beijing Huanju Shidai or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of his or its equity interests in Beijing Tuda. Beijing Huanju Shidai or its designated representative(s) have sole discretion as to when to exercise such options, either in part or in full. Without Beijing Huanju Shidai's prior written consent, Beijing Tuda's shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Beijing Tuda. The term of this agreement is ten years and may be extended at Beijing Huanju Shidai's sole discretion.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Beijing Huanju Shidai and the shareholders of Beijing Tuda, the shareholders of Beijing Tuda have pledged all of their equity interests in Beijing Tuda to Beijing Huanju Shidai to guarantee the performance by Beijing Tuda and its shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive option agreement, exclusive technology support and technology services agreement and powers of attorney. If Beijing Tuda or its shareholders breach their contractual obligations under those agreements, Beijing Huanju Shidai, as the pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. This pledge became effective on the date the pledged equity interests were registered with the competent administration for industry and commerce and will remain effective until the pledgors are no longer the shareholders of Beijing Tuda.

Contractual Arrangements with Guangzhou Ruicheng

The following is a summary of the currently effective contracts among our subsidiary, Guangzhou Huanju Shidai, a variable interest entity, Guangzhou Ruicheng, and the shareholders of Guangdong Ruicheng.

Exclusive Technology Services Agreement

Under the exclusive technology services agreement between Guangzhou Huanju Shidai and Guangzhou Ruicheng, Guangzhou Huanju Shidai had the exclusive right to provide to Guangzhou Ruicheng services related to its business. Guangzhou Huanju Shidai owned the exclusive intellectual property rights created as a result of the performance of this agreement. The service scope and service fee payable by Guangzhou Ruicheng to Guangzhou Huanju Shidai is determined by the sole discretion of Guangzhou Huanju Shidai. The term of this agreement is twenty years and will be automatically extended year by year unless Guangzhou Huanju Shidai delivers a prior written notice to Guangzhou Ruicheng not to extend the term.

Shareholder Voting Rights Proxy Agreement

On December 9, 2020, Guangzhou Huanju Shidai, Guangzhou Ruicheng, and the shareholders of Guangzhou Ruicheng entered into a voting rights proxy agreement. Under the voting rights proxy agreement, each of the shareholders of Guangzhou Ruicheng irrevocably executed a power of attorney and appointed Guangzhou Huanju Shidai's designated representatives as its attorney-in-fact to exercise such shareholders' rights in Guangzhou Ruicheng, including, without limitation, the power to vote on its behalf on all matters of Guangzhou Ruicheng requiring shareholder approval under PRC laws and regulations and the articles of association and their amendments from time to time of Guangzhou Ruicheng and rights to information relating to all business aspects of Guangzhou Ruicheng. The term of this agreement is twenty years and will be automatically extended year by year unless Guangzhou Huanju Shidai delivers a prior written notice to Guangzhou Ruicheng not to extend the term or upon mutual written agreement by all parties.

Exclusive Option Agreement

Under the exclusive option agreement between Guangzhou Huanju Shidai, each of the shareholders of Guangzhou Ruicheng and Guangzhou Ruicheng, each of such shareholders irrevocably granted Guangzhou Huanju Shidai or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of its equity interests in Guangzhou Huaduo. Guangzhou Huanju Shidai or its designated representative(s) had sole discretion as to when to exercise such options, either in part or in full. Without Guangzhou Huanju Shidai's prior written consent, Guangzhou Ruicheng's such shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Guangzhou Ruicheng. The agreement will remain effective upon all the equity interests in or assets of Guangzhou Ruicheng are transferred to Guangzhou Huanju Shidai or its designated representative(s) or may be terminated at Guangzhou Huanju Shidai's sole discretion.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Guamgzhou Huanju Shidai, the shareholders of Guangzhou Ruicheng and Guangzhou Ruicheng, such shareholders of Guangzhou Ruicheng shall pledged all of their equity interests in Guangzhou Ruicheng to Guangzhou Huanju Shidai to guarantee the performance by Guangzhou Ruicheng and its shareholders' performance of their respective obligations under the exclusive technology service agreement, exclusive option agreement, and shareholder Voting Rights Proxy Agreement. If Guangzhou Ruicheng and/or such shareholders breached their contractual obligations under those agreements, Guangzhou Huanju Shidai, as the pledgee, would be entitled to certain rights, including the right to sell the pledged equity interests. The pledge will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Contractual Arrangements with Guangzhou Huaduo

In February 2021, Beijing Tuda and Mr. David Xueling Li transferred their respective equity interests in Guangzhou Huaduo to Guangzhou Tuyue. After such transaction, Guangzhou Tuyue owns 99.50% equity interests of Guangzhou Huaduo, Mr. Jun Lei and two other unaffiliated individual shareholders in total own 0.50% equity interests of Guangzhou Huaduo. Upon the effectiveness of the foregoing equity interests transfers, Beijing Tuda and Mr. David Xueling Li have terminated the contractual arrangements with Guangzhou Huaduo and Beijing Tuda, whereas Mr. Jun Lei and two other unaffiliated individual shareholders remain the contractual arrangements with Beijing Huaju Shidai.

In April 2022, Mr. Jun Lei and two other unaffiliated individual shareholders transferred their respective equity interests in Guangzhou Huaduo to Guangzhou Tuyue. After such transaction, Guangzhou Tuyue owns 100% equity interests of Guangzhou Huaduo. Upon the effectiveness of the foregoing equity interests transfers, Guangzhou Tuyue, Mr. Jun Lei and two other unaffiliated individual shareholders have terminated the contractual arrangements with Beijing Huanju Shidai.

The following is a summary of the then effective contracts among Beijing Huanju Shidai, Guangzhou Huaduo and Mr. Jun Lei and two other unaffiliated individuals as of the date of April 1, 2022.

Exclusive Business Cooperation Agreement

Under the exclusive business cooperation agreement between Beijing Huanju Shidai and Guangzhou Huaduo, as amended, Beijing Huanju Shidai had the exclusive right to provide to Guangzhou Huaduo technology support, business support and consulting services related to Guangzhou Huaduo's business, the scope of which was to be determined by Beijing Huanju Shidai from time to time. Beijing Huanju Shidai owned the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Guangzhou Huaduo to Beijing Huanju Shidai was up to 100% of the net profit of Guangzhou Huaduo, and the timing and amount of the fee payments would be determined at the sole discretion of Beijing Huanju Shidai. The term of this agreement would expire in 2038 and might be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai had sole discretion to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huaduo, while neither Guangzhou Huaduo nor its shareholders were entitled to terminate the agreement.

Exclusive Technology Support and Technology Services Agreement

Under the exclusive technology support and technology services agreement between Beijing Huanju Shidai and Guangzhou Huaduo, as amended, Beijing Huanju Shidai had the exclusive right to provide to Guangzhou Huaduo technology support and technology services related to all technologies needed for its business. Beijing Huanju Shidai owned the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Guangzhou Huaduo to Beijing Huanju Shidai was 10% of Guangzhou Huaduo's gross revenues. The term of this agreement would expire in 2028 and might be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai had sole discretion to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huaduo, while neither Guangzhou Huaduo nor its shareholders were entitled to terminate the agreement.

Powers of Attorney

Under the irrevocable powers of attorney executed by each of Mr. Jun Lei and two other unaffiliated individuals of Guangzhou Huaduo, each such of Mr. Jun Lei and two other unaffiliated individual shareholders appointed Beijing Huanju Shidai as its attorney-in-fact to exercise such shareholders' rights in Guangzhou Huaduo, including, without limitation, the power to vote on its behalf on all matters of Guangzhou Huaduo requiring shareholder approval under PRC laws and regulations and the articles of association of Guangzhou Huaduo. Each power of attorney would remain in force until the shareholder ceases to hold any equity interest in Guangzhou Huaduo.

Exclusive Option Agreement

Under the exclusive option agreement between Beijing Huanju Shidai, each of Mr. Jun Lei and two other unaffiliated individual shareholders of Guangzhou Huaduo and Guangzhou Huaduo, each of such shareholders irrevocably granted Beijing Huanju Shidai or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of his or its equity interests in Guangzhou Huaduo. Beijing Huanju Shidai or its designated representative(s) had sole discretion as to when to exercise such options, either in part or in full. Without Beijing Huanju Shidai's prior written consent, Guangzhou Huaduo's such shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Guangzhou Huaduo. The term of this agreement was ten years and might be extended at Beijing Huanju Shidai's sole discretion.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Beijing Huanju Shidai and Mr. Jun Lei and two other unaffiliated individual shareholders of Guangzhou Huaduo, such shareholders of Guangzhou Huaduo had pledged all of their equity interests in Guangzhou Huaduo to Beijing Huanju Shidai to guarantee the performance by Guangzhou Huaduo and its shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive option agreement, exclusive technology support and technology services agreement and powers of attorney. If Guangzhou Huaduo and/or such shareholders breached their contractual obligations under those agreements, Beijing Huanju Shidai, as the pledgee, would be entitled to certain rights, including the right to sell the pledged equity interests. The pledge became effective on the date the pledged equity interests were registered with the competent administration for industry and commerce and would remain effective until the pledgors are no longer the shareholders of Guangzhou Huaduo.

Guangzhou Tuyue are indirectly held by selected individuals from the senior management team of JOYY Inc. who are PRC citizens through PRC limited partnership jointly established by these individuals. Guangzhou Tuyue, its direct and indirect shareholders and Guangzhou Huanju Shidai, have entered a series of contractual agreements. The following is a summary of the currently effective contracts among Guangzhou Tuyue, its direct and indirect shareholders and Guangzhou Huanju Shidai.

Exclusive Service Agreement

Under each of the Exclusive Service Agreements entered into by Guangzhou Tuyue's respective direct and indirect shareholders with Guangzhou Huanju Shidai dated December 9, 2020, Guangzhou Huanju Shidai has the right to exclusively provide relevant services to such shareholders, including, without limitations, the licensing of software, technology support, training, research and business consulting services related to such shareholder's applicable business, the scope of which is to be determined by Guangzhou Huanju Shidai from time to time. The service scope and service fee payable by such shareholder to Guangzhou Huanju Shidai is determined at the sole discretion of Guangzhou Huanju Shidai. The term of each exclusive service agreement is 20 years and will be automatically extended year by year unless Guangzhou Huanju Shidai delivers prior written notice to such shareholder not to extend the term.

Proxy Agreement

Under each proxy agreement entered into by Guangzhou Tuyue's respective direct and indirect shareholders with Guangzhou Huanju Shidai dated December 9, 2020, each such shareholder irrevocably authorized Guangzhou Huanju Shidai or its designee(s) to act on their respective behalf as proxy attorney, including, but not limited to proposing to convene or attend shareholder meetings, voting at such meetings, appointing directors and senior management, disposal the equity interests under the respective Exclusive Service Agreement. The term of each proxy agreement is 20 years and will be automatically extended year by year unless Guangzhou Huanju Shidai delivers prior written notice to the relevant parties under the proxy agreement not to extend the term.

Exclusive Option Agreement

Under each exclusive option agreement entered into by Guangzhou Tuyue's respective direct and indirect shareholders with Guangzhou Huanju Shidai dated December 9, 2020, each such shareholder has irrevocably granted Guangzhou Huanju Shidai or its designee(s) an exclusive call option to purchase all or any part of its equity interests, all or any part of its assets, and an exclusive call option to request the capital increase into the relevant entity, to the extent permissible by the then-applicable PRC laws and regulations, at Guangzhou Huanju Shidai's sole discretion.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Guangzhou Huanju Shidai and the direct and indirect shareholders of Guangzhou Tuyue, such shareholders of Guangzhou Tuyue have pledged all of their equity interests to Guangzhou Huanju Shidai to guarantee the performance by such shareholder's performance of their respective contractual obligations under the respective exclusive service agreement, exclusive option agreement, and proxy agreement to which such shareholder is a party. If such shareholder breach its contractual obligations under those agreements, Guangzho Huanju Shidai, as the pledgee, will be entitled to certain rights, including the right to dispose the pledged equity interests. We have completed the registration of the equity interest pledge under the equity interest pledge agreements with the relevant office of SAMR. The pledge will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Contractual Arrangements with Bilin Online

The Bilin entities had a complete VIE structure. Upon the consummation of the acquisition, Bilin Changxiang, Bilin Online and its shareholder entered into a series of agreements, which is similar to the contractual arrangements with Beijing Tuda and Beijing Huanju Shidai, to reestablish the VIE structure. The agreements and related instruments include an Exclusive Business Cooperation Agreement, a Powers of Attorney, an Exclusive Option Agreement, an Exclusive Assets Purchase Agreement, and an Equity Interest Pledge Agreement. This arrangement ensures the transfer of economic benefits to us, and our effective control over Bilin Online.

On March 29, 2021, Mr. David Xueling Li and another individual shareholder transferred their respective equity interests in Bilin Online to Guangzhou Ruicheng. After such transaction, Guangzhou Ruicheng owns 100% equity interests of Bilin Online. Upon the effectiveness of the foregoing equity interests transfers, Bilin Online, Mr. David Xueling Li and another individual shareholder have terminated the contractual arrangements with Bilin Changxiang.

Contractual Arrangements with Guangzhou BaiGuoYuan

On January 15, 2021, Mr. David Xueling Li and a senior management member of Guangzhou BaiGuoYuan have transferred in total 100% of the equity interests of Guangzhou BaiGuoYuan to Guangzhou Qianxun, and terminated the contractual arrangements upon the effectiveness of the foregoing transfers. Guangzhou Qianxun is indirectly held by selected individuals of our senior management team who are PRC citizens through PRC limited partnership jointly established by these individuals. Guangzhou BaiGuo Yuan, and its direct and indirect shareholders, are controlled by Guangzhou BaiGuoYuan Information Technology Co., Ltd., or BaiGuoYuan Technology, through a series of contractual arrangements. The following is a summary of the currently effective contracts among our subsidiary, BaiGuoYuan Technology, a variable interest entity, Guangzhou BaiGuoYuan Network Technology Co., Ltd., or Guangzhou BaiGuoYuan, and the direct and indirect shareholders of Guangzhou BaiGuoYuan.

Exclusive Service Agreement

Under each of the exclusive service agreements entered into by Guangzhou BaiGuoYuan's respective direct and indirect shareholders with BaiGuoYuan Technology dated January 15, 2021, BaiGuoYuan Technology has the right to exclusively provide relevant services to such shareholders, including, without limitations, the licensing of software, technology support, training, research and business consulting services related to such shareholder's applicable business, the scope of which is to be determined by BaiGuoYuan Technology from time to time. The service scope and service fee payable by such shareholder to BaiGuoYuan Technology is determined by the sole discretion of BaiGuoYuan Technology. The term of each exclusive service agreement is twenty years and will be automatically extended year by year unless BaiGuoYuan Technology delivers a prior written notice to such shareholder not to extend the term.

Proxy Agreement

Under each proxy agreement entered into by Guangzhou BaiGuoYuan's respective direct and indirect shareholders with BaiGuoYuan Technology dated December 9, 2020, each such shareholder irrevocably authorized BaiGuoYuan Technology or its designee(s) to act on their respective behalf as proxy attorney, including, but not limited to proposing to convene or attend shareholder meetings, voting at such meetings, appointing directors and senior management, disposal the equity interests under the respective exclusive service agreement. The term of each proxy agreement is 20 years and will be automatically extended year by year unless BaiGuoYuan Technology delivers prior written notice to the relevant parties under the proxy agreement not to extend the term.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between BaiGuoYuan Technology and the direct and indirect shareholders of Guangzhou BaiGuoYuan, such shareholders of Guangzhou BaiGuoYuan have pledged all of their equity interests to BaiGuoYuan Technology to guarantee the performance by such shareholder's performance of their respective contractual obligations under the respective exclusive service agreement, exclusive option agreement, and proxy agreement to which such shareholder is a party. If such shareholder breach its contractual obligations under those agreements, BaiGuoYuan Technology, as the pledgee, will be entitled to certain rights, including the right to dispose the pledged equity interests. We have completed the registration of the equity interest pledge under the equity interest pledge agreements with the relevant office of SAMR. The pledge will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Exclusive Option Agreement

Under each exclusive option agreement entered into by Guangzhou BaiGuoYuan's respective direct and indirect shareholders with BaiGuoYuan Technology dated December 9, 2020, each such shareholder has irrevocably granted BaiGuoYuan Technology or its designee(s) an exclusive call option to purchase all or any part of its equity interests, all or any part of its assets, and an exclusive call option to request the capital increase into the relevant entity, to the extent permissible by the then-applicable PRC laws and regulations, at BaiGuoYuan Technology's sole discretion.

Contractual Arrangements with Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue

The following is a summary of the currently effective contracts among our subsidiary, Guangzhou Wangxing Information Technology Co., Ltd., or Guangzhou Wangxing, a variable interest entity, Chengdu Yunbu Internet Technology Co., Ltd., or Chengdu Yunbu, Chengdu Luota Internet Technology Co., Ltd., or Chengdu Luota, and Chengdu Jiyue Internet Technology Co., Ltd., or Chengdu Jiyue and their shareholders.

Exclusive Business Cooperation Agreement

On July 31, 2019, Guangzhou Wangxing entered into an exclusive business cooperation agreement respectively with Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue. Under the exclusive business cooperation agreement, Guangzhou Wangxing has the exclusive right to provide Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue with technology support, business support and consulting services related to their businesses, the scope of which is to be determined by Guangzhou Wangxing from time to time. Guangzhou Wangxing owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue to Guangzhou Wangxing shall be paid quarterly, and the amount is up to 100% of the quarterly net profit of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue after deducting the operating costs, taxes, and reasonable profits according to PRC tax principles and practices. The term of this agreement is in perpetuity from the execution date of this agreement, unless otherwise decided by Guangzhou Wangxing.

Shareholder Voting Rights Proxy Agreement

On July 31, 2019, Guangzhou Wangxing, Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, and the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue respectively entered into a voting rights proxy agreement. Under the voting rights proxy agreement, each of the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue irrevocably executed a power of attorney and appointed Guangzhou Wangxing or its designated representatives as its attorney-in-fact to exercise such shareholders' rights in Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, including, without limitation, the power to vote on its behalf on all matters of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue requiring shareholder approval under PRC laws and regulations and the articles of association and their amendments from time to time of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue and rights to information relating to all business aspects of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue. The term of this agreement is in perpetuity from the execution date of this agreement, unless otherwise agreed upon by Guangzhou Wangxing, Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, and the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue.

Equity Interest Pledge Agreement

On July 31, 2019, Guangzhou Wangxing entered into an equity interest pledge agreement respectively with, Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue and the each of the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue. Pursuant to the equity interest pledge agreement, the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue have pledged all of their equity interests in Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue to Guangzhou Wangxing to guarantee the performance by Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue and their shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive option agreement, exclusive asset purchase agreement and shareholder voting rights proxy agreement. If Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue or their shareholders breach their contractual obligations under those agreements, Guangzhou Wangxing, as the pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. This pledge will become effective on the date the pledged equity interests are recorded in the registry of shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, and will remain effective until Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue and the each of the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue have fully performed their obligations under the exclusive business cooperation agreement, exclusive option agreement, exclusive asset purchase agreement, shareholder voting rights proxy agreement and equity interest pledge agreement.

Exclusive Option Agreement

On July 31, 2019, Guangzhou Wangxing, Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue, and each of the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue respectively entered into an exclusive option agreement. Under the exclusive option agreement, each of the shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue irrevocably granted Guangzhou Wangxing or its designated representatives an exclusive option to purchase, to the extent permitted under PRC law, all or part of his/her equity interests in Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue. Guangzhou Wangxing or its designated representatives have sole discretion as to when to exercise such options, either in part or in full. Without Guangzhou Wangxing's prior written consent, shareholders of Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue shall not, by any means, sell, transfer, mortgage or otherwise dispose or create any encumbrance on the pledged equity interests in Chengdu Yunbu, Chengdu Luota and Chengdu Jiyue. The term of this agreement is in perpetuity from the execution date of this agreement, unless the agreement is terminated by Guangzhou Wangxing upon thirty (30) days written notice to the other parties.

Contractual Arrangements with Guangzhou AnSiChuang

The following is a summary of the currently effective contracts among our subsidiary, Guangzhou LianYiYun Information Technology Co., Ltd., or Guangzhou LianYiYun, a variable interest entity, Guangzhou AnSiChuang Information Technology Co., Ltd., or Guangzhou AnSiChuang, and the shareholder of Guangdong AnSiChuang.

Exclusive Service Agreement

Under the exclusive services agreement between Guangzhou LianYiYun and Guangzhou AnSiChuang, dated May 31, 2021, Guangzhou LianYiYun has the exclusive right to provide or designate any third party to provide to Guangzhou AnSiChuang services related to its applicable business, including, without limitations, the licensing of software, technology support, training, business consulting service, the scope of which is to be determined by Guangzhou AnSiChuang from time to time. Guangzhou Lianyiyun owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Guangzhou AnSiChuang to Guangzhou LianYiYun is determined at the sole discretion of Guangzhou LianYiYuan. The term of each exclusive service agreement is 20 years and will be automatically extended one more year, unless Guangzhou LianYiYun agrees terminating of this agreement with thirty days prior notice.

Shareholder Voting Rights Proxy Agreement

On May 31, 2021, Guangzhou LianYiYun, Guangzhou AnSiChuang, and the shareholder of Guangzhou AnSiChuang entered into a voting rights proxy agreement. Under the voting rights proxy agreements, the shareholder of Guangzhou AnSiChuang irrevocably executed a power of attorney and appointed Guangzhou LianYiYun's designated representatives as its attorney-in-fact to exercise such shareholder's rights in Guangzhou AnSiChuang, including, without limitation, the power to vote on its behalf on all matters of Guangzhou AnSiChuang requiring shareholder approval under PRC laws and regulations and the articles of association of Guangzhou AnSiChuang and rights to information relating to all business aspects of Guangzhou AnSiChuang. The term of this agreement is twenty years from the execution date of this agreement and will be automatically extended for one more year, unless Guangzhou LianYiYun agrees terminating of this agreement with thirty days prior notice.

Exclusive Option Agreement

Under the exclusive option agreement between Guangzhou LianYiYun, the shareholder of Guangzhou AnSiChuang and Guangzhou AnSiChuang, dated May 31, 2021, the shareholder irrevocably granted Guangzhou LianYiYun or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of his equity interests in Guangzhou AnSiChuang. Guangzhou LianYiYun or its designated representative(s) have sole discretion as to when and how to exercise such options, either in part or in full. Without Guangzhou LianYiYun's prior written consent, Guangzhou AnSiChuang's shareholder shall not sell, transfer, mortgage or otherwise dispose his equity interests in Guangzhou AnSiChuang. The agreement will remain effective upon all Guangzhou AnSiChuang's equity interests transferred to Guangzhou LianYiYun or its designated representative(s) or may be terminated at Guangzhou LianYiYun's sole discretion.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Guangzhou LianYiYun, Guangzhou AnSiChuang and the shareholder of Guangzhou AnSiChuang, dated May 31, 2021, the shareholder of Guangzhou AnSiChuang have pledged all of his equity interests in Guangzhou AnSiChuang to Guangzhou LianYiYun to guarantee the performance by Guangzhou AnSiChuang and its shareholder's performance of their respective obligations under the exclusive service agreement, exclusive option agreement and powers of attorney. If Guangzhou AnSiChuang or its shareholder breach their contractual obligations under those agreements, Guangzhou LianYiYun, as the pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. This equity interest pledge agreement became effective on the date of execution and will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Contractual Arrangements with Shanghai Ruogu

The existing shareholders of Shanghai Ruogu Information Technology Co., Ltd., or Shanghai Ruogu, entered into an equity transfer agreement with the then shareholders of Shanghai Ruogu to acquire the 100% equity interests in Shanghai Ruogu on June 18, 2021. The existing shareholders, Haishaman (Shanghai) Information Technology Co., Ltd., or Haishaman, and Shanghai Ruogu entered into a series of contracts on the same day. However, the change registration with the competent office of SAMR with regards to the equity transfer and shareholders change has not been completed. The following is a summary of the currently effective contracts among our subsidiary, Haishaman, a variable interest entity, Shanghai Ruogu, and the shareholders of Shanghai Ruogu.

Exclusive Technology Development, Consultant and Service Agreement

Under the exclusive technology development, consultant and service agreement between Haishaman and Shanghai Ruogu, dated January 17, 2019, Haishaman has the exclusive right to provide to Shanghai Ruogu technology development, consulting and services. Haishaman owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Shanghai Ruogu to Haishaman is determined at the sole discretion of Haishaman. The term of this agreement is in perpetuity from the execution date of this agreement, unless Haishaman determines to terminate the agreement at any time by providing 30 days' prior written notice to Shanghai Ruogu.

Powers of Attorney

Under the irrevocable powers of attorney executed by each of Guangzhou Huaduo and Guangzhou Ruicheng, each Guangzhou Huaduo and Guangzhou Ruicheng appointed Haishaman as its attorney-in-fact to exercise such shareholders' rights in Shanghai Ruogu, including, without limitation, the power to vote on its behalf on all matters of Shanghai Ruogu requiring shareholders approval under PRC laws and regulations and the articles of association of Shanghai Ruogu. Each power of attorney will remain in force until Haishaman provides written notice terminating such power of attorney to Guangzhou Huaduo or Guangzhou Ruicheng.

Exclusive Option Agreement

Under the restated and amended exclusive option agreement between Haishaman, the shareholders of Shanghai Ruogu and Shanghai Ruogu, dated June 18, 2021, the shareholders irrevocably granted Haishaman or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of its/their equity interests in Shanghai Ruogu or all or part of Shanghai Ruogu's asset. Haishaman or its designated representative(s) have sole discretion as to when and how to exercise such options, either in part or in full. Without Haishaman's prior written consent, Shanghai Ruogu's shareholders shall not sell, transfer, mortgage or otherwise dispose its/their equity interests in Shanghai Ruogu. The agreement will remain effective until all the parties agree to termination in written form.

Equity Interest Pledge Agreement

Under the restated and amended equity interest pledge agreement between Haimaisha, Shanghai Ruogu and the shareholders of Shanghai Ruogu, dated June 18, 2021, the shareholders of Shanghai Ruogu have pledged all of their equity interests in Shanghai Ruogu to Haishaman to guarantee the performance by Shanghai Ruogu under the exclusive technology development, consultant and service agreement. If Shanghai Ruogu breaches its contractual obligations under the exclusive technology development, consultant and service agreement, Haishaman, as the pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. However, we have not completed the change registration of equity interest pledge with competent office of SAMR. This equity interest pledge agreement became effective on the date of execution and will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Contractual Arrangements with Beijing Cengcengceng

The following is a summary of the currently effective contracts among our subsidiaries, Blue Buck, Guangzhou Blue Ocean, a variable interest entity, Beijing Cengcengceng and the shareholder of Beijing Cengcengceng.

Exclusive Technology Development, Consultant and Service Agreement

Under the exclusive technology development, consultant and service agreement between Blue Buck, Guangzhou Blue Ocean and Beijing Cengcengceng, dated February 18, 2022, Blue Buck and Guangzhou Blue Ocean have the exclusive right to provide to Beijing Cengcengceng technology development, consulting and services. Blue Buck and Guangzhou Blue Ocean own the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Blue Buck and Guangzhou Blue Ocean to Beijing Cengcengceng is determined at the discretion of Blue Buck and Guangzhou Blue Ocean. The term of this agreement is ten years and will be extended to another ten years or other years agreed by all parties upon the written confirmation of Blue Buck and Guangzhou Blue Ocean, unless Blue Buck and Guangzhou Blue Ocean determine to terminate the agreement at any time by providing 30 days' prior written notice to Beijing Cengcengceng.

Powers of Attorney

Under the irrevocable powers of attorney executed by the shareholder of Beijing Cengcengceng on February 18, 2022, the shareholder of, Beijing Cengcengceng appointed Blue Buck and Guangzhou Blue Ocean as his attorney-in-fact to exercise such shareholder's rights in Beijing Cengcengceng, including, without limitation, the power to vote on his behalf on all matters of Beijing Cengcengceng requiring shareholder approval under PRC laws and regulations and the articles of association of Beijing Cengcengceng. The power of attorney will remain in force until the shareholder ceases to hold any equity interest in Beijing Cengcengceng.

Exclusive Option Agreement

Under the exclusive option agreement between Blue Buck, Guangzhou Blue Ocean, the shareholder of Beijing Cengcengceng and Beijing Cengcengceng, dated February 18, 2022, the shareholder irrevocably granted Blue Buck and Guangzhou Blue Ocean or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of his equity interests in Beijing Cengcengceng or all or part of Beijing Cengcengceng's asset. Blue Buck and Guangzhou Blue Ocean or its designated representative(s) have sole discretion as to when and how to exercise such options, either in part or in full. Without prior written consent from Blue Buck and Guangzhou Blue Ocean, Beijing Cengcengceng's shareholder shall not sell, transfer, mortgage or otherwise dispose his equity interests in Beijing Cengcengceng. The term of this agreement is ten years and could be extended for ten more years at the discretion of Blue Buck and Guangzhou Blue Ocean.

Equity Interest Pledge Agreement

Under the equity interest pledge agreement between Blue Buck, Guangzhou Blue Ocean, the shareholder of Beijing Cengcengceng and Beijing Cengcengceng, dated February 18, 2022, the shareholder of Beijing Cengcengceng has pledged all of his equity interests in Beijing Cengcengceng to Blue Buck and Guangzhou Blue Ocean to guarantee the performance by Beijing Cengcengceng under the exclusive technology development, consultant and service agreement. If Beijing Cengcengceng breaches its contractual obligations under the exclusive technology development, consultant and service agreement, Blue Buck and Guangzhou Blue Ocean, as the pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. However, we have not completed the change registration of equity interest pledge with competent office of SAMR. This equity interest pledge agreement became effective on the date of execution and will remain effective upon the contractual obligations have been fully performed or the secured debts have been fully paid.

Contractual Arrangements with Guangzhou Blue Whale

A series of contractual agreements, including exclusive technology development, consultant and service agreement, equity interest pledge agreements, exclusive option agreements and powers of attorney have been entered into by and among Guangzhou Blue Ocean, Guangzhou Blue Whale and the shareholders of Guangzhou Blue Whale on April 15, 2021, the terms of which are substantially similar to those of contractual agreements entered into by and among Blue Buck, Guangzhou Blue Ocean, Beijing Cengcengceng and the shareholder of Beijing Cengcengceng.

Transactions with Affiliates

In 2010 and 2011, Guangzhou Huaduo and Guangzhou Sunhongs Corp., Ltd (formerly named as Guangzhou Shanghang Information Technical Co., Ltd.), or Guangzhou Sunhongs, entered into certain server co-location agreements, under which Guangzhou Sunhongs provides Guangzhou Huaduo with bandwidth and server co-location services in different cities in China. In addition, Guangzhou Huaduo and Guangzhou Sunhongs entered into two content delivery network acceleration service agreements, under which Guangzhou Sunhongs provides content delivery network acceleration services to Guangzhou Huaduo. Guangzhou Sunhongs is an investee of Mr. Jun Lei, one of our major shareholders, and Shanghai Yilian Equity Investment Partnership (LP), one of the subsidiaries of Guangzhou Huaduo. In the years ended December 31, 2019, 2020 and 2021, the bandwidth service that we received from Guangzhou Sunhongs amounted to US$13.4 million, US$14.2 million and US$3.3 million, respectively.

Guangzhou Huaduo and Kingsoft Cloud Holdings Limited (Nasdaq: KC) ("Kingsoft Cloud") entered into certain cloud service agreements, under which Kingsoft Cloud provides Guangzhou Huaduo with bandwidth service. Mr. Jun Lei, our major shareholder, is also the major shareholder and Chairman of the Board of Directors of Kingsoft Cloud. In the years ended December 31, 2019, 2020 and 2021, the bandwidth service that we received from Kingsoft Cloud amounted to US$1.7 million, US$2.1 million and US$0.4 million, respectively. We also purchased servers and equipments from Kingsoft Cloud. In the years ended December 31, 2019 and 2020, the fixed assets that we purchased from Kingsoft Cloud amounted to US$2.4 million and US$0.4 million.

See Note 28 to our financial statements for further information about our related party transactions.

Registration Rights Agreement with Huya

On April 3, 2020, Huya and we entered into a registration rights agreement. Under the agreement, Huya have granted us certain registration rights, including:

- *Demand registration rights*. So long as we hold 25% or more of the voting power of Huya outstanding shares, we have the right to request us effect a registration for their shares. Huya is not obligated to effect more than two demand registrations that have been declared and ordered effective.

- *Form F-3 registration rights*. If Huya qualifies for registration on Form F-3, we may request Huya to file a registration statement on Form F-3. Huya is not obligated to effect more than six registration statements on Form F-3 that have been declared and ordered effective.

- *Piggyback registration rights*. If Huya proposes to file a registration statement for a public offering of its securities, it must afford us an opportunity to participate in that offering. Huya has the right to terminate or withdraw any registration initiated by it under the piggyback registration rights prior to the effectiveness of such registration.

Employment Agreements

See "Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Employment Agreements" for a description of the employment agreements we have entered into with our senior executive officers.

Share Incentives

See "Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers" for a description of share-based compensation awards we have granted to our directors, officers and other individuals as a group.

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

See "Item 18. Financial Statements."

Legal Proceedings

Guangzhou NetEase Computer System Co., Ltd. has initiated a lawsuit against us in Guangzhou in October 2014, claiming infringement of its rights of reproduction concerning the online game of Fantasy Westward Journey in an amount of RMB100 million. In 2017, Guangzhou Intellectual Property Court ordered us to compensate NetEase in an amount of RMB20.0 million. In December 2019, the Higher People's Court of Guangdong Province rejected the appeal of NetEase and us, and upheld the judgement of the Guangzhou Intellectual Property Court. We have applied for adjudication supervision from the Supreme People's Court of PRC against the judgement in 2020, and we have applied for withdrawal of such adjudication supervision in April 2021. We paid the compensation of RMB20.0 million to NetEase in 2020 following the effective judgement.

On November 20, 2020, a putative securities class action complaint captioned Hershewe v. JOYY Inc. et al., No. 2:20-cv-10611 (C.D. Cal.) was filed in the United States District Court for Central District of California against the Company and certain of its current and former officers. The complaint asserts claims for violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10b-5 promulgated thereunder and seeks damages based on alleged material misrepresentations and omissions about the Company's revenue, component businesses, and acquisition of Bigo. The proposed class period is April 28, 2016, through November 18, 2020, inclusive. On March 9, 2022, the court granted the defendants' motion to dismiss and dismissed the operative complaint in its entirety with prejudice. On April 8, 2022, the co-lead plaintiffs filed a notice of appeal. The Company cannot reasonably estimate a potential future loss.

Apart from the aforesaid lawsuit, we are not currently a party to any pending material litigation or other material legal proceeding and are not aware of any pending or threatened litigation or other legal proceeding that may have a material adverse impact on our business or operations. However, we may be subject to various legal proceedings and claims that are incidental to our ordinary course of business. Regardless of the outcome, legal or administrative proceedings or claims may have an adverse impact on us because of defense and settlement costs, diversion of management attention and other factors.

Dividend Policy

On August 11, 2020, our board of directors approved a quarterly dividend policy for the next three years commencing in the second quarter of 2020. Under the policy, total cash dividend amount expected to be paid will be approximately US$300 million and quarterly dividends will be set at approximately US$25 million in each fiscal quarter. On November 20, 2020, our board of directors approved an additional quarterly dividend policy for the next three years, under which the total cash dividend amount expected to be paid will be approximately US$200 million and quarterly dividend set at a fixed amount of approximately US$16.67 million in each fiscal quarter. As of March 31, 2022, we have paid dividends in an aggregate amount of US$160.1 million.

We are a holding company incorporated in the Cayman Islands. We may receive dividends from our PRC and other subsidiaries for our cash requirements, including any payment of dividends to our shareholders. Our ability to pay dividends depends upon dividends paid by our subsidiaries, which is subject to restrictions imposed by the applicable laws and regulations in these markets. In certain jurisdictions, such as Singapore, there are currently no foreign exchange control regulations which restrict the ability of our subsidiaries in these jurisdictions to distribute dividends to us. However, the relevant regulations may be changed and the ability of these subsidiaries to distribute dividends to us may be restricted in the future. As for the jurisdiction of PRC, PRC regulations may restrict the ability of our PRC subsidiary to pay dividends to us. See "Item 3. Key information—D. Risk Factors— Risks Related to Doing Business in Jurisdictions We Operate —Our PRC subsidiaries and the variable interest entities are subject to restrictions on paying dividends or making other payments to us, which may restrict our ability to satisfy our liquidity requirements" and "Item 4. Information on the Company—B. Business Overview—PRC Regulation—Regulation of Foreign Currency Exchange and Dividend Distribution."

Our board of directors has complete discretion on whether to distribute dividends, subject to the approval of our shareholders. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that the board of directors may deem relevant. If we pay any dividends, we will pay our ADS holders to the same extent as holders of our Class A common shares, subject to the terms of the deposit agreement, including the fees and expenses payable thereunder. See "Item 12. Description of Securities Other than Equity Securities—D. American Depositary Shares." Cash dividends on our Class A common shares, if any, will be paid in U.S. dollars.

B. Significant Changes

Except as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of our audited consolidated financial statements included in this annual report.

ITEM 9. THE OFFER AND LISTING

A. Offering and Listing Details

See "—C. Markets" and "Item 12. Description of Securities other than Equity Securities—D. American Depositary Shares." We have a dual-class common share structure in which Class A common shares have different voting rights from Class B common shares. Class B common shares are each entitled to ten votes, whereas Class A common shares are each entitled to one vote. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our ADSs—Our dual class common share structure with different voting rights will limit your ability to influence corporate matters and could discourage others from pursuing any change of control transactions that holders of our Class A common shares and ADSs may view as beneficial."

B. Plan of Distribution

Not applicable.

C. Markets

Our ADSs, each representing twenty Class A common shares, have been listed on the Nasdaq Global Select Market since November 21, 2012 and trade under the symbol "YY."

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

We are a Cayman Islands exempted company and our affairs are governed by our memorandum and articles of association and the Companies Act (As Revised) of the Cayman Islands, referred to as the Companies Act below. The following are summaries of certain provisions of our memorandum and articles of association in effect as of the date of this annual report insofar as they relate to the material terms of our common shares.

Registered Office and Objects

Our registered office in the Cayman Islands is located at Conyers Trust Company (Cayman) Limited, Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KYI-1111, Cayman Islands. The memorandum of association provides, inter alia, that the liability of the members of our company is limited to the amount, if any, for the time being unpaid on the common shares. The objects for which our company is established are unrestricted (including acting as an investment company), and we shall have and be capable of exercising all the functions of a natural person of full capacity irrespective of corporate benefit, as provided in Section 27(2) of the Companies Act and in view of the fact that we are an exempted Company, we will not trade in the Cayman Islands with any person, firm or corporation except in furtherance of our business carried on outside the Cayman Islands.

Board of Directors

See "Item 6. Directors, Senior Management and Employees—C. Board Practices—Duties of Directors" and "—Terms of Directors and Officers."

Common Shares

General

Our common shares are divided into Class A common shares and Class B common shares. Holders of Class A common shares and Class B common shares will have the same rights except for voting and conversion rights. The holders of ADSs will not be treated as our shareholders and will be required to surrender their ADSs for cancellation and withdrawal from the depositary facility in which the Class A common shares are held in accordance with the provisions of the deposit agreement in order to exercise shareholders' rights in respect of the Class A common shares. The depositary will agree, so far as it is practical, to vote or cause to be voted the amount of underlying Class A common shares represented by ADSs in accordance with the non-discretionary written instructions of the holders of such ADSs.

All of our issued and outstanding common shares are fully paid and non-assessable. Our common shares are issued in registered form and are issued when registered in our register of members (shareholders). We may not issue shares to bearer. Our shareholders who are non-residents of the Cayman Islands may freely hold and vote their common shares.

Meetings

As a Cayman Islands exempted company, we are not obliged by the Companies Act to call shareholders' annual general meetings. Our third amended and restated memorandum and articles of association provide that we may (but are not obliged to) in each year hold a general meeting as our annual general meeting in which case we shall specify the meeting as such in the notices calling it, and the annual general meeting shall be held at such time and place as may be determined by our directors. In addition, extraordinary general meetings of our shareholders may be convened by a majority of our board of directors or the chairman of our board of directors. Advance notice in writing of at least ten clear days is required for the convening of our annual general meeting and any other general meeting of our shareholders. A quorum required for a meeting of shareholders consists of at least one or more shareholders present in person or by proxy, or (in the case of a shareholder being a corporation) by its duly authorized representative representing not less than one-third in nominal value of the total issued voting shares in our company throughout the meeting.

If our directors wish to make this facility available for a specific general meeting or all general meetings of our company, attendance and participation in any such general meeting may be by means of Communication Facilities (as defined in our articles of association, including video, video-conferencing, internet or online conferencing applications, telephone or tele-conferencing and/or any other video-communications, internet or online conferencing application or telecommunications facilities by means of which all persons participating in the meeting are capable of hearing and being heard by each other), including entirely virtual meetings. A shareholder attending any such general meeting by means of Communications Facilities shall be deemed to be present at the meeting, including for quorum purposes.

Notwithstanding that a meeting is called by shorter notice than that mentioned above, it will be deemed to have been duly called, if it is so agreed (a) in the case of a meeting called as an annual general meeting by all of our shareholders entitled to attend and vote at the meeting; and (b) in the case of any other meeting, by a majority in number of the shareholders having the right to attend and vote at the meeting, being a majority together holding not less than 95% in nominal value of the issued shares giving that right.

No business other than the appointment of a chairman may be transacted at any general meeting unless a quorum is present at the commencement of business. However, the absence of a quorum will not preclude the appointment of a chairman. If present, the chairman of our board of directors shall be the chairman presiding at any shareholders' meetings.

A corporation being a shareholder shall be deemed for the purpose of our articles of association to be present in person if represented by its duly authorized representative being the person appointed by resolution of the directors or other governing body of such corporation to act as its representative at the relevant general meeting or at any relevant general meeting of any class of our shareholders. Such duly authorized representative shall be entitled to exercise the same powers on behalf of the corporation that he represents as that corporation could exercise if it were our individual shareholder.

The quorum for a separate general meeting of the holders of a separate class of shares is described in "—Modification of Rights" below.

Our articles of association do not allow our shareholders to approve matters to be determined at shareholders' meetings by way of written resolutions without a meeting.

Voting Rights

In respect of all matters requiring a shareholders' vote, each Class A common share is entitled to one vote, and each Class B common share is entitled to ten votes, voting together as one class. At any shareholders' meeting, and subject to the voting rights attached to our Class A common shares and Class B common shares as described in this paragraph, on a show of hands, every shareholder present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its duly authorized representative) or by means of Communications Facilities (as defined in our articles of association), if permitted) shall have one vote and on a poll, every shareholder present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its duly authorized representative) or by means of Communications Facilities (as defined in our articles of association), if permitted) shall have one vote for each fully paid share of which such shareholder is the holder.

No shareholder shall, unless our board of directors otherwise determines, be entitled to vote or be reckoned in a quorum, in respect of any share, unless such shareholder is duly registered as our shareholder and all calls or installments due by such shareholder to us have been paid.

If a clearing house (or its nominee(s)) or a central depositary entity, being a corporation, is a shareholder, it may authorize such person or persons as it thinks fit to act as its representative(s) at any meeting or at any meeting of any class of shareholders, provided that the authorization shall specify the number and class of shares in respect of which each such person is so authorized. A person so authorized is entitled to exercise the same rights and powers on behalf of the clearing house or central depositary entity (or its nominee(s)) as if such person was the registered holder of our shares held by the clearing house or central depositary entity (or its nominee(s)) including the right to vote individually on a show of hands.

While there is nothing under the laws of the Cayman Islands which specifically prohibits or restricts the creation of cumulative voting rights for the election of directors of our company, it is not a concept that is accepted as a common practice in the Cayman Islands, and our company has made no provisions in our articles of association to allow cumulative voting for such elections.

Conversion

Each Class B common share is convertible into one Class A common share at any time by the holder thereof. Class A common shares are not convertible into Class B common shares under any circumstances. Upon any transfer, sale, pledge, assignment or disposition of Class B common shares by a holder to any person or entity which is not an affiliate of such holder and which is not any of our founders or any affiliates of our founders, such Class B common shares shall be automatically and immediately converted into the equivalent number of Class A common shares. In addition, if at any time, Messrs. David Xueling Li, Jun Lei, Tony Bin Zhao and Jin Cao and their affiliates collectively beneficially own less than 5% of the total number of the issued and outstanding Class B common shares, each issued and outstanding Class B common share will be automatically and immediately converted into one Class A common share, and we will not issue any Class B common shares thereafter. Furthermore, if at any time more than 50% of the ultimate beneficial ownership of any holder of Class B common shares (other than our founders or our founders' affiliates) changes, each such Class B common share will be automatically and immediately converted into one Class A common share.

Calls on Shares and Forfeiture of Shares

Subject to our memorandum and articles of association, our directors may from time to time make such calls upon the members in respect of any amounts unpaid on the shares held by them. The shares that have been called upon and remain unpaid after it has become due and payable are subject to forfeiture.

Protection of Minority Shareholders

In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company because as a general rule a derivative action may not be brought by a minority shareholder. However, based on English authorities, which would in all likelihood be of persuasive authority in the Cayman Islands, the Cayman Islands court can be expected to apply and follow the common law principles (namely the rule in Foss v. Harbottle and the exceptions thereto) which permit a minority shareholder to commence a class action against, or derivative actions in the name of, a company to challenge the following:

(i) an acts which is illegal or ultra vires and is therefore incapable of ratification by the shareholders;

(ii) an act which, although not ultra vires, could only be effected duly if authorized by a special or qualified majority vote that has not been obtained; and

(iii) an act which constitutes a fraud against, the minority where the wrongdoers are themselves in control of the company.

In the case of a company (not being a bank) having its share capital divided into shares, the Grand Court of the Cayman Islands may, on the application of members holding not less than one fifth of the shares of the company in issue, appoint an inspector to examine the affairs of the company and to report thereon in such manner as the Grand Court of the Cayman Islands shall direct.

Any of our shareholders may petition the Grand Court of the Cayman Islands which may make a winding up order if the Grand Court of the Cayman Islands is of the opinion that it is just and equitable that we should be wound up or, as an alternative to a winding up order, (a) an order regulating the conduct of our affairs in the future, (b) an order requiring us to refrain from doing or continuing an act complained of by the shareholder petitioner or to do an act which the shareholder petitioner has complained we have omitted to do, (c) an order authorizing civil proceedings to be brought in our name and on our behalf by the shareholder petitioner on such terms as the Grand Court of the Cayman Islands may direct, or (d) an order providing for the purchase of the shares of any of our shareholders by other shareholders or us and, in the case of a purchase by us, a reduction of our capital accordingly.

Generally, claims against us must be based on the general laws of contract or tort applicable in the Cayman Islands or individual rights as shareholders as established by our articles of association.

Pre-Emption Rights

There are no pre-emption rights applicable to the issue of new shares of our company under either Cayman Islands law or our memorandum and articles of association.

Liquidation Rights

Subject to any class or classes of shares or future shares which are issued with specific rights, privileges or restrictions as to the distribution of available surplus assets on liquidation, (a) if we are wound up and the assets available for distribution among our shareholders are more than sufficient to repay the whole of the capital paid up at the commencement of the winding up, the excess shall be distributed pari passu among those shareholders in proportion to the amount paid up at the commencement of the winding up on the shares held by them, respectively, and (b) if we are wound up and the assets available for distribution among the shareholders as such are insufficient to repay the whole of the paid-up capital, those assets shall be distributed so that, as nearly as may be, the losses shall be borne by the shareholders in proportion to the capital paid up at the commencement of the winding up on the shares held by them, respectively.

If we are wound up (whether the liquidation is voluntary or by the court), the liquidator may with the sanction of our special resolution and any other sanction required by the Companies Act, divide among our shareholders in specie or kind the whole or any part of our assets (whether or not they shall consist of property of the same kind) and may, for such purpose, set such value as the liquidator deems fair upon any property to be divided and may determine how such division shall be carried out as between the shareholders or different classes of shareholders. The liquidator may also vest the whole or any part of these assets in trustees upon such trusts for the benefit of the shareholders as the liquidator shall think fit, but so that no shareholder will be compelled to accept any assets, shares or other securities upon which there is a liability.

The consideration received by each holder of a Class A common share and a holder of a Class B common share will be the same in any liquidation event.

Variation of Rights

Alterations to our memorandum and articles of association may only be made by special resolution, meaning a majority of not less than two-thirds of votes cast at a shareholders' meeting.

Subject to applicable laws and our memorandum and articles of association, all or any of the special rights for the time being attached to the shares or any class of shares may, unless otherwise provided by the terms of issue of the shares of that class, from time to time be varied, modified or abrogated by a special resolution passed at a separate general meeting of the holders of the shares of that class. All the provisions of our articles of association relating to general meetings shall, mutatis mutandis, apply, but so that:

- separate general meetings of the holders of a class or series of shares may be called only by (i) the chairman of our board of directors, or (ii) a majority of our board of directors (unless otherwise specifically provided by the terms of issue of the shares of such class or series). Our articles of association does not give any shareholder(s) the right to call a class or series meeting;
- the necessary quorum shall be a person or persons (or in the case of a shareholder being a corporation, its duly authorized representative) together holding or representing by proxy not less than one-third in nominal value of the issued shares of that class;
- every holder of shares of the class shall be entitled on a poll to one vote for every such share held by him; and
- any holder of shares of the class present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its authorized representative) or by means of Communication Facilities (as defined in our articles of association), if permitted) may demand a poll.

The special rights conferred upon the holders of any shares or class of shares shall not, unless otherwise expressly provided in the rights attaching to or the terms of issue of such shares, be deemed to be varied, modified or abrogated by the creation or issue of further shares ranking pari passu with such existing shares or class of shares.

Alteration of Capital

We may from time to time by ordinary resolution in accordance with the Companies Act alter the conditions of our memorandum of association to:

- increase our capital by such sum, to be divided into shares of such amounts, as the resolution shall prescribe;
- consolidate and divide all or any of our share capital into shares of larger amounts than our existing shares;
- cancel any shares which at the date of the passing of the resolution have not been taken or agreed to be taken by any person, and diminish the amount of its share capital by the amount of the shares so cancelled subject to the provisions of the Companies Act;

- sub-divide our shares or any of them into shares of smaller amount than is fixed by our memorandum of association, subject nevertheless to the Companies Act, so that the resolution whereby any share is sub-divided may determine that, as between the holders of the shares resulting from such subdivision, one or more of the shares may have any such preferred or other special rights over, or may have such deferred rights or be subject to any such restrictions as compared with the others, as we have power to attach to unissued or new shares; and

- divide our shares into several classes and without prejudice to any special rights previously conferred on the holders of existing shares, attach to the shares respectively any preferential, deferred, qualified or special rights, privileges, conditions or such restrictions that in the absence of any such determination in a general meeting may be determined by our directors.

We may, by special resolution, subject to any confirmation or consent required by the Companies Act, reduce our share capital or any capital redemption reserve in any manner authorized by law.

Transfer of Shares

Subject to any applicable restrictions set forth in our articles of association, including, for example, the board of directors' discretion to refuse to register a transfer of any share (not being a fully paid up share) to a person of whom it does not approve, or any share issued under share incentive plans for employees upon which a restriction on transfer imposed thereby still subsists, or a transfer of any share to more than four joint holders, any of our shareholders may transfer all or any of his or her shares by an instrument of transfer in the usual or common form or in a form prescribed by the Nasdaq Global Select Market or in another form that our directors may approve.

Our directors may decline to register any transfer of any share which is not paid up or on which we have a lien. Our directors may also decline to register any transfer of any share unless:

- the instrument of transfer is lodged with us and is accompanied by the certificate for the shares to which it relates and such other evidence as our directors may reasonably require to show the right of the transferor to make the transfer;

- the instrument of transfer is in respect of only one class of share;

- the instrument of transfer is properly stamped (in circumstances where stamping is required); and

- fee of such maximum sum as the Nasdaq Global Select Market may determine to be payable or such lesser sum as our directors may from time to time require is paid to us in respect thereof.

If our directors refuse to register a transfer, they shall, within three months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal.

The registration of transfers may, after compliance with any notice requirement of the Nasdaq Global Select Market, be suspended and the register closed at such times and for such periods as our directors may from time to time determine; provided, however, that the registration of transfers shall not be suspended nor the register closed for more than 30 days in any year as our directors may determine.

Register of Members

In accordance with Section 48 of the Companies Act, the register of members is prima facie evidence of the registered holder or member of shares of a company. Therefore, a person becomes a registered holder or member of shares of the company only upon entry being made in the register of members. Our directors will maintain one register of members, at the office of Conyers Trust Company (Cayman) Limited, Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands, which provides us with corporate administrative services. We will perform the procedures necessary to register the shares in the register of members as required in "PART III—Distribution of Capital and Liability of Members of Companies and Associations" of the Companies Act, and will ensure that the entries on the register of members are made without any delay.

The common shares underlying our ADSs are not shares in bearer form, but are in registered form and are "non-negotiable" or "registered" shares and accordingly the common shares underlying our ADSs can only be transferred on the books of the company in accordance with Section 166 of the Companies Act.

If the name of any person is incorrectly entered in or omitted from our register of members, or if there is any default or unnecessary delay in entering on the register the fact of any person having ceased to be a member of our company, the person or member aggrieved (or any member of our company or our company itself) may apply to the Grand Court of the Cayman Islands for an order that the register be rectified, and the Court may either refuse such application or it may, if satisfied of the justice of the case, make an order for the rectification of the register.

Share Repurchases

We are empowered by the Companies Act and our articles of association to purchase our own shares, subject to certain restrictions. Our directors may only exercise this power on our behalf, subject to the Companies Act, our memorandum and articles of association and to any applicable requirements imposed from time to time by the Nasdaq Global Select Market, the U.S. Securities and Exchange Commission, or by any other recognized stock exchange on which our securities are listed.

Dividends

Subject to the Companies Act, our company in a general meeting or our directors may declare dividends in any currency to be paid to our shareholders, but no dividend shall be declared in excess of the amount recommended by our board of directors. Dividends may be declared and paid out of our profits, realized or unrealized, or from any reserve set aside from profits which our directors determine is no longer needed. Our board of directors may also declare and pay dividends out of our share premium account or any other fund or account that can be authorized for this purpose in accordance with the Companies Act. However, even if our company has sufficient profits or share premium, it may not pay a dividend if this would result in our company being unable to pay its debts as they fall due in the ordinary course of business.

Except in so far as the rights attaching to, or the terms of issue of, any share otherwise provides, (a) all dividends shall be declared and paid according to the amounts paid up on the shares in respect of which the dividend is paid, but no amount paid up on a share in advance of calls shall be treated for this purpose as paid up on that share and (b) all dividends shall be apportioned and paid pro rata according to the amounts paid up on the shares during any portion or portions of the period in respect of which the dividend is paid.

Our directors may also pay interim dividends, whenever our financial position, in the opinion of our directors, justifies such payment.

Our directors may deduct from any dividend or bonus payable to any shareholder all sums of money (if any) presently payable by such shareholder to us on account of calls or otherwise.

No dividend or other money payable by us on or in respect of any share shall bear interest against us.

In respect of any dividend proposed to be paid or declared on our share capital, our directors may resolve and direct that (a) such dividend be satisfied wholly or in part in the form of an allotment of shares credited as fully paid up, provided that our shareholders entitled thereto will be entitled to elect to receive such dividend (or part thereof if our directors so determine) in cash in lieu of such allotment or (b) the shareholders entitled to such dividend will be entitled to elect to receive an allotment of shares credited as fully paid up in lieu of the whole or such part of the dividend as our directors may think fit. Our shareholders may, upon the recommendation of our directors, by ordinary resolution resolve in respect of any particular dividend that, notwithstanding the foregoing, a dividend may be satisfied wholly in the form of an allotment of shares credited as fully paid up without offering any right to shareholders to elect to receive such dividend in cash in lieu of such allotment.

Any dividend interest or other sum payable in cash to the holder of shares may be paid by check or warrant sent by mail addressed to the holder at his registered address, or addressed to such person and at such addresses as the holder may direct. Every check or warrant shall, unless the holder or joint holders otherwise direct, be made payable to the order of the holder or, in the case of joint holders, to the order of the holder whose name stands first on the register in respect of such shares, and shall be sent at his or their risk and payment of the check or warrant by the bank on which it is drawn shall constitute a good discharge to us.

All dividends unclaimed for one year after having been declared may be invested or otherwise made use of by our board of directors for the benefit of our company until claimed. Any dividend unclaimed after a period of six years from the date of declaration of such dividend shall be forfeited and reverted to us.

Whenever our directors have resolved that a dividend be paid or declared, our directors may further resolve that such dividend be satisfied wholly or in part by the distribution of specific assets of any kind, and in particular of paid up shares, debentures or warrants to subscribe for our securities or securities of any other company. Where any difficulty arises with regard to such distribution, our directors may settle it as they think expedient. In particular, our directors may issue fractional certificates, ignore fractions altogether or round the same up or down, fix the value for distribution purposes of any such specific assets, determine that cash payments shall be made to any of our shareholders upon the footing of the value so fixed in order to adjust the rights of the parties, vest any such specific assets in trustees as may seem expedient to our directors, and appoint any person to sign any requisite instruments of transfer and other documents on behalf of the persons entitled to the dividend, which appointment shall be effective and binding on our shareholders.

Untraceable Shareholders

We are entitled to sell any shares of a shareholder who is untraceable, provided that no such sale shall be made unless:

- all checks or warrants in respect of dividends of such shares, not being less than three in number, for any sums payable in cash to the holder of such shares have remained un-cashed for a period of 12 years prior to the publication of the advertisement and during the three months referred to in the third bullet point below;

- we have not during that time received any indication of the existence of the shareholder or person entitled to such shares by death, bankruptcy or operation of law; and

- we, if so required by the rules of the Nasdaq Global Select Market, have given notice to, and caused an advertisement to be published in newspapers in accordance with such applicable rules giving notice of our intention to sell these shares, and a period of three months (or such shorter period as permitted under the applicable rules) has elapsed since the date of such advertisement.

The net proceeds of any such sale shall belong to us, and when we receive these net proceeds we shall become indebted to the former shareholder for an amount equal to such net proceeds.

Exclusive Forum

Unless we consent in writing to the selection of an alternative forum, the United States District Court for the Southern District of New York (or, if the United States District Court for the Southern District of New York lacks subject matter jurisdiction over a particular dispute, the state courts in New York County, New York) shall be the exclusive forum within the United States for the resolution of any complaint asserting a cause of action arising out of or relating in any way to the federal securities laws of the United States, regardless of whether such legal suit, action, or proceeding also involves parties other than us. Any person or entity purchasing or otherwise acquiring any share or other securities in our company, or purchasing or otherwise acquiring American depositary shares issued pursuant to deposit agreements, shall be deemed to have notice of and consented to the provisions of this article. Without prejudice to the foregoing, if the provision in this article is held to be illegal, invalid or unenforceable under applicable law, the legality, validity or enforceability of the rest of articles of association shall not be affected and this article shall be interpreted and construed to the maximum extent possible to apply in the relevant jurisdiction with whatever modification or deletion may be necessary so as best to give effect to our intention.

Differences Between the Law of Different Jurisdictions

The Companies Act of the Cayman Islands is derived, to a large extent, from the older Companies Acts of England but does not follow recent English statutory enactments and accordingly there are significant differences between the Companies Act of the Cayman Islands and the current Companies Act of England. In addition, the Companies Act of the Cayman Islands differs from laws applicable to U.S. corporations and their shareholders. Set forth below is a summary of the significant differences between the provisions of the Companies Act of the Cayman Islands applicable to us and the laws applicable to companies incorporated in the United States and their shareholders.

Mergers and Similar Arrangements. The Companies Act permits mergers and consolidations between Cayman Islands companies and between Cayman Islands companies and non-Cayman Islands companies. For these purposes, (a) "merger" means the merging of two or more constituent companies and the vesting of their undertaking, property and liabilities in one of such companies as the surviving company, and (b) a "consolidation" means the combination of two or more constituent companies into a consolidated company and the vesting of the undertaking, property and liabilities of such companies to the consolidated company. In order to effect such a merger or consolidation, the directors of each constituent company must approve a written plan of merger or consolidation, which must then be authorized by (a) a special resolution of the shareholders of each constituent company, and (b) such other authorization, if any, as may be specified in such constituent company's articles of association. The plan must be filed with the Registrar of Companies of the Cayman Islands together with a declaration as to the solvency of the consolidated or surviving company, a list of the assets and liabilities of each constituent company and an undertaking that a copy of the certificate of merger or consolidation will be given to the members and creditors of each constituent company and that notification of the merger or consolidation will be published in the Cayman Islands Gazette. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

A merger between a Cayman parent company and its Cayman subsidiary or subsidiaries does not require authorization by a resolution of shareholders of that Cayman subsidiary if a copy of the plan of merger is given to every member of that Cayman subsidiary to be merged unless that member agrees otherwise. For this purpose a company is a "parent" of a subsidiary if it holds issued shares that together represent at least ninety percent (90%) of the votes at a general meeting of the subsidiary.

The consent of each holder of a fixed or floating security interest over a constituent company is required unless this requirement is waived by a court in the Cayman Islands.

Save in certain limited circumstances, a shareholder of a Cayman constituent company who dissents from the merger or consolidation is entitled to payment of the fair value of his shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) upon dissenting to the merger or consolidation, provide the dissenting shareholder complies strictly with the procedures set out in the Companies Act. The exercise of dissenter rights will preclude the exercise by the dissenting shareholder of any other rights to which he or she might otherwise be entitled by virtue of holding shares, save for the right to seek relief on the grounds that the merger or consolidation is void or unlawful.

Separate from the statutory provisions relating to mergers and consolidations, the Companies Act also contains statutory provisions that facilitate the reconstruction and amalgamation of companies by way of schemes of arrangement, provided that the arrangement is approved by a majority in number of each class of shareholders and creditors with whom the arrangement is to be made, and who must in addition represent three-fourths in value of each such class of shareholders or creditors, as the case may be, that are present and voting either in person or by proxy at a meeting, or meetings, convened for that purpose. The convening of the meetings and subsequently the arrangement must be sanctioned by the Grand Court of the Cayman Islands. While a dissenting shareholder has the right to express to the court the view that the transaction ought not to be approved, the court can be expected to approve the arrangement if it determines that:

- the statutory provisions as to the required majority vote have been met;
- the shareholders have been fairly represented at the meeting in question and the statutory majority are acting bona fide without coercion of the minority to promote interests adverse to those of the class;
- the arrangement is such that may be reasonably approved by an intelligent and honest man of that class acting in respect of his interest; and
- the arrangement is not one that would more properly be sanctioned under some other provision of the Companies Act.

The Companies Act also contains a statutory power of compulsory acquisition which may facilitate the "squeeze out" of dissentient minority shareholder upon a tender offer. When a tender offer is made and accepted by holders of 90% of the shares affected within four months, the offeror may, within a two-month period commencing on the expiration of such four-month period, require the holders of the remaining shares to transfer such shares to the offeror on the terms of the offer. An objection can be made to the Grand Court of the Cayman Islands but this is unlikely to succeed in the case of an offer which has been so approved unless there is evidence of fraud, bad faith or collusion.

If an arrangement and reconstruction by way of scheme of arrangement is thus approved and sanctioned, or if a tender offer is made and accepted in accordance with the foregoing statutory procedures, a dissenting shareholder would have no rights comparable to appraisal rights, save that objectors to a takeover offer may apply to the Grand Court of the Cayman Islands for various orders that the Grand Court of the Cayman Islands has a broad discretion to make, which would otherwise ordinarily be available to dissenting shareholders of Delaware corporations, providing rights to receive payment in cash for the judicially determined value of the shares.

Shareholders' Suits. In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company and as a general rule, a derivative action may not be brought by a minority shareholder. However, based on English authorities, which would in all likelihood be of persuasive authority in the Cayman Islands, there are exceptions to the foregoing principle which permit a minority shareholder to commence a class action against, or derivative actions in the name of, a company, including when:

- a company acts or proposes to act illegally or ultra vires;
- the act complained of, although not ultra vires, could only be effected duly if authorized by more than a simple majority vote that has not been obtained; and
- those who control the company are perpetrating a "fraud on the minority."

Indemnification of Directors and Executive Officers and Limitation of Liability. Cayman Islands law does not limit the extent to which a company's memorandum and articles of association may provide for indemnification of officers and directors, except to the extent any such provision may be held by the Cayman Islands courts to be contrary to public policy, such as to provide indemnification against civil fraud or the consequences of committing a crime. Our Memorandum and Articles of Association provide that our Company shall indemnify our officers and directors from and against all actions, costs, charges, losses, damages and expenses incurred in their capacities as such unless such losses or damages arise from dishonesty or fraud of such directors or officers. This standard of conduct is generally the same as permitted under the Delaware General Corporation Law for a Delaware corporation.

In addition, we have entered into indemnification agreements with our directors and executive officers that provide such persons with additional indemnification beyond that provided in our Memorandum and Articles of Association.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Anti-Takeover Provisions in the Memorandum and Articles of Association. Some provisions of our current Memorandum and Articles of Association may discourage, delay or prevent a change in control of our company or management that shareholders may consider favorable, including provisions that authorize our board of directors to issue preferred shares in one or more series and to designate the price, rights, preferences, privileges and restrictions of such preferred shares without any further vote or action by our shareholders.

However, under Cayman Islands law, our directors may only exercise the rights and powers granted to them under our Memorandum and Articles of Association, as amended and restated from time to time, for a proper purpose and for what they believe in good faith to be in the best interests of our company.

Directors' Fiduciary Duties. Under Delaware corporate law, a director of a Delaware corporation has a fiduciary duty to the corporation and its shareholders. This duty has two components: the duty of care and the duty of loyalty. The duty of care requires that a director act in good faith, with the care that an ordinarily prudent person would exercise under similar circumstances. Under this duty, a director must inform himself of and disclose to shareholders, all material information reasonably available regarding a significant transaction. The duty of loyalty requires that a director acts in a manner he reasonably believes to be in the best interests of the corporation. He must not use his corporate position for personal gain or advantage. This duty prohibits self-dealing by a director and mandates that the best interest of the corporation and its shareholders take precedence over any interest possessed by a director, officer or controlling shareholder and not shared by the shareholders generally. In general, actions of a director are presumed to have been made on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the corporation. However, this presumption may be rebutted by evidence of a breach of one of the fiduciary duties. Should such evidence be presented concerning a transaction by a director, the director must prove the procedural fairness of the transaction and that the transaction was of fair value to the corporation.

As a matter of Cayman Islands law, a director of a Cayman Islands company is in the position of a fiduciary with respect to the company and therefore it is considered that he owes the following duties to the company — a duty to act bona fide in the best interests of the company, a duty not to make a profit based on his position as director (unless the company permits him to do so) and a duty not to put himself in a position where the interests of the company conflict with his personal interest or his duty to a third party. A director of a Cayman Islands company owes to the company a duty to act with skill and care. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands.

Shareholder Action by Written Consent. Under the Delaware General Corporation Law, a corporation may eliminate the right of shareholders to act by written consent by amendment to its certificate of incorporation. Our Memorandum and Articles of Association do not allow our shareholders to approve matters to be determined at shareholders' meetings by way of written resolutions without a meeting.

Shareholder Proposals. Under the Delaware General Corporation Law, a shareholder has the right to put any proposal before the annual meeting of shareholders, provided it complies with the notice provisions in the governing documents. A special meeting may be called by the board of directors or any other person authorized to do so in the governing documents, but shareholders may be precluded from calling special meetings.

The Companies Act provides shareholders with only limited rights to requisition a general meeting, and does not provide shareholders with any right to put any proposal before a general meeting. These rights may be provided in a company's articles of association. However, our memorandum and articles of association do not allow our shareholders to requisition any general meeting of our shareholders and do not provide our shareholders with any other right to put proposals before any annual general meetings or extraordinary general meetings. As a Cayman Islands exempted company, we are not obliged by law to call shareholders' annual general meetings. Our third amended and restated memorandum and articles of association provide that we may (but are not obliged to) in each year hold a general meeting as our annual general meeting. In addition, extraordinary general meetings of our shareholders may be convened only by a majority of our board of directors or the chairman of our board of directors. *Cumulative Voting*. Under the Delaware General Corporation Law, cumulative voting for elections of directors is not permitted unless the corporation's certificate of incorporation specifically provides for it. Cumulative voting potentially facilitates the representation of minority shareholders on a board of directors since it permits the minority shareholder to cast all the votes to which the shareholder is entitled on a single director, which increases the shareholder's voting power with respect to electing such director. While there is nothing under the laws of the Cayman Islands which specifically prohibits or restricts the creation of cumulative voting rights for the election of directors of our company, it is not a concept that is accepted as a common practice in the Cayman Islands, and our company has made no provisions in our Memorandum and Articles of Association to allow cumulative voting for such elections. As a result, our shareholders are not afforded any less protections or rights on this issue than shareholders of a Delaware corporation.

Removal of Directors. Under the Delaware General Corporation Law, a director of a corporation with a classified board may be removed only for cause with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under our Memorandum and Articles of Association, a director may be removed by a special resolution of our shareholders.

Transactions with Interested Shareholders. The Delaware General Corporation Law contains a business combination statute applicable to Delaware corporations whereby, unless the corporation has specifically elected not to be governed by such statute by amendment to its certificate of incorporation, it is prohibited from engaging in certain business combinations with an "interested shareholder" for three years following the date that such person becomes an interested shareholder. An interested shareholder generally is a person or a group who or which owns or owned 15% or more of the target's outstanding voting share within the past three years. This has the effect of limiting the ability of a potential acquirer to make a two-tiered bid for the target in which all shareholders would not be treated equally. The statute does not apply if, among other things, prior to the date on which such shareholder becomes an interested shareholder, the board of directors approves either the business combination or the transaction which resulted in the person becoming an interested shareholder. This encourages any potential acquirer of a Delaware corporation to negotiate the terms of any acquisition transaction with the target's board of directors.

Cayman Islands law has no comparable statute. As a result, we cannot avail ourselves of the types of protections afforded by the Delaware business combination statute. However, although Cayman Islands law does not regulate transactions between a company and its significant shareholders, it does provide that such transactions must be entered into bona fide in the best interests of the company and not with the effect of constituting a fraud on the minority shareholders.

Dissolution; Winding up. Under the Delaware General Corporation Law, unless the board of directors approves the proposal to dissolve, dissolution must be approved by shareholders holding 100% of the total voting power of the corporation. Only if the dissolution is initiated by the board of directors may it be approved by a simple majority of the corporation's outstanding shares. Delaware law allows a Delaware corporation to include in its certificate of incorporation a supermajority voting requirement in connection with dissolutions initiated by the board.

Under Cayman Islands law, a company may be wound up by either an order of the courts of the Cayman Islands or by a special resolution of its members or, if the company is unable to pay its debts as they fall due, by an ordinary resolution of its members. The court has authority to order winding up in a number of specified circumstances including where it is, in the opinion of the court, just and equitable to do so.

Variation of Rights of Shares. Under the Delaware General Corporation Law, a corporation may vary the rights of a class of shares with the approval of a majority of the outstanding shares of such class, unless the certificate of incorporation provides otherwise. Under our Memorandum and Articles of Association, all or any of the special rights for the time being attached to the shares or any class of shares may, unless otherwise provided by the terms of issue of the shares of that class, from time to time be varied, modified or abrogated by a special resolution passed at a separate general meeting of the holders of the shares of that class. The special rights conferred upon the holders of any shares or class of shares shall not, unless otherwise expressly provided in the rights attaching to or the terms of issue of such shares, be deemed to be varied, modified or abrogated by the creation or issue of further shares ranking pari passu with such existing class of shares.

Amendment of Governing Documents. Under the Delaware General Corporation Law, a corporation's governing documents may be amended with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. As permitted by Cayman Islands law and our Memorandum and Articles of Association, our Memorandum and Articles of Association may only be amended with a special resolution of our shareholders.

Rights of Non-resident or Foreign Shareholders. There are no limitations imposed by our Memorandum and Articles of Association on the rights of nonresident or foreign shareholders to hold or exercise voting rights on our shares. In addition, there are no provisions in our Memorandum and Articles of Association which require our company to disclose shareholder ownership above any particular ownership threshold.

Exempted Company. The Companies Act in the Cayman Islands distinguishes between ordinary resident companies and exempted companies. Any company that is registered in the Cayman Islands but conducts business mainly outside of the Cayman Islands may apply to be registered as an exempted company. The requirements for an exempted company are essentially the same as for an ordinary company except for the exemptions and privileges listed below:

- an exempted company does not have to file an annual return of its shareholders with the Registrar of Companies;
- an exempted company's register of members is not required to be open to inspection;
- an exempted company does not have to hold an annual general meeting;
- an exempted company may issue no par value shares;
- an exempted company may obtain an undertaking against the imposition of taxation on profits, capital gains or inheritance (such undertakings are usually given for 20 years in the first instance);
- an exempted company may register by way of continuation in another jurisdiction and be deregistered in the Cayman Islands;

- an exempted company may register as a limited duration company; and
- an exempted company may register as a segregated portfolio company.

"Limited liability" means that the liability of each shareholder is limited to the amount unpaid by the shareholder on that shareholder's shares of the company (except in exceptional circumstances, such as involving fraud, the establishment of an agency relationship or an illegal or improper purpose or other circumstances in which a court may be prepared to pierce or lift the corporate veil).

Inspection of Books and Records

Holders of our common shares will have no general right under Cayman Islands law to inspect or obtain copies of our list of shareholders or our corporate records (other than our memorandum and articles of association, special resolutions passed by our shareholders, and our register of mortgages and charges). However, we will provide our shareholders with annual audited financial statements.

C. Material Contracts

We have not entered into any material contracts other than in the ordinary course of business and other than those described elsewhere in "Item 4. Information on the Company—B. Business Overview," "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions," or elsewhere in this annual report.

D. Exchange Controls

See "Item 4. Information on the Company—B. Business Overview—PRC Regulation—Regulation of Foreign Currency Exchange and Dividend Distribution."

E. Taxation

Cayman Islands Taxation

See "Item 5. Operating and Financial Review and Prospects—A. Operating Results—Discussion of Selected Statements of Operations Items—Taxation—Cayman Islands."

Singapore Taxation

The following discussion is a summary of Singapore income tax, goods and services tax and stamp duty considerations relevant to the acquisition, ownership and disposition of ADSs or our common shares. The statements made herein regarding taxation are general in nature and based upon certain aspects of the current tax laws of Singapore and administrative guidelines issued by the relevant authorities in force as of the date hereof and are subject to any changes in such laws or administrative guidelines or the interpretation of such laws or guidelines occurring after such date, which changes could be made on a retrospective basis. The statements made herein do not purport to be a comprehensive or exhaustive description of all of the tax considerations that may be relevant to a decision to acquire, own or dispose of our ADSs or our common shares and do not purport to deal with the tax consequences applicable to all categories of investors, some of which (such as dealers in securities) may be subject to special rules. Prospective shareholders are advised to consult their own tax advisers as to the Singapore or other tax consequences of the acquisition, ownership of or disposal of our ADSs and our common shares, taking into account their own particular circumstances. It is emphasized that neither we nor any other persons involved in this annual report accept responsibility for any tax effects or liabilities resulting from the acquisition, holding or disposal of our ADSs or our common shares.

Income Tax

Under the Singapore Income Tax Act (Chapter 134 of Singapore), a company established outside Singapore but whose governing body, being the board of directors, usually exercises de facto control and management of its business in Singapore could be considered tax residents in Singapore. However, such control and management of the business should not be deemed to be in Singapore if physical board meetings are mainly conducted outside Singapore. Where board resolutions are passed in the form of written consent signed by the directors each acting in their own jurisdictions, or where the board meetings are held by teleconference or videoconference, it is possible that the place of de facto control and management will be considered to be where the majority of the board are located when they sign such consent or attend such conferences.

We believe that JOYY Inc. is not a Singapore tax resident for Singapore income tax purposes. However, the tax resident status of JOYY Inc. is subject to determination by the IRAS and uncertainties remain with respect to our tax residence status. It is not certain if JOYY Inc. will be classified as a Singapore tax resident. See “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operation— It is not certain if we will be classified as a Singapore tax resident” for a discussion of the Singapore tax consequences to non-resident investors if JOYY Inc. is deemed to be a Singapore tax resident. The statements below are based on the assumption that JOYY Inc. is not a tax resident in Singapore for Singapore income tax purposes.

Dividends With Respect to Our ADSs or Our Common Shares

Where JOYY Inc. is not considered a tax resident in Singapore for Singapore income tax purposes, the dividend payments made by JOYY Inc. would be considered sourced outside Singapore (unless our ADSs or our common shares are held as part of a trade or business carried out in Singapore, in which case the holders of our ADSs or our common shares may be taxed on the dividends distributed to them). Foreign-sourced dividends received or deemed to be received in Singapore by non-resident individuals are exempt from Singapore income tax. This exemption also applies to Singapore tax resident individuals who have received or, are deemed to have received his foreign-sourced income in Singapore on or after January 1, 2004 (except where such income is received through a partnership in Singapore).

Foreign-sourced dividends received or deemed to be received in Singapore by corporate investors who do not have a business presence in Singapore, are not tax resident in Singapore, and who do not have a permanent establishment or tax presence in Singapore, will generally not be subject to income tax in Singapore. Foreign-sourced dividends received or deemed to be received in Singapore by corporate investors who are tax residents in Singapore will generally be subject to Singapore income tax. Since JOYY Inc. is a company incorporated in the Cayman Islands, and the prevailing rate of tax in the Cayman Islands, being a tax of a similar character to the Singapore income tax, is 0%, dividends received in Singapore by resident corporate investors would be subject to Singapore income tax at the prevailing rate of 17%.

Dividends received in respect of our ADSs or our common shares whether by a Singapore tax resident or a non-Singapore tax resident as a shareholder are not subject to any withholding tax in Singapore.

Gains With Respect to Disposition of Our ADSs or Our Common Shares

There is no capital gain tax in Singapore and there is no specific law or regulation in Singapore dealing with the characterization of a gain as income or capital in nature. Gains arising from disposition of our ADSs or our common shares may be construed as income and subject to Singapore income tax if they arise from or are otherwise connected with a trade or business activity in Singapore. Factors that determine the existence of a trade include, inter alia, the length of ownership, the frequency of similar transactions, and the motive of acquisition.

Such gains may also be considered income in nature, even if they do not arise from an activity in the ordinary course of trade or business or an ordinary incident of some other business activity, if our ADSs or our common shares were purchased with the intention or purpose of making a profit by sale rather than holding for long-term investment purposes in Singapore. Conversely, gains from disposition of our ADSs or our common shares in Singapore, if considered as capital gains rather than income by the Inland Revenue Authority of Singapore, are not taxable in Singapore.

For corporate shareholders who are subject to Singapore income tax treatment under Section 34A or 34AA of the Income Tax Act (Chapter 134 of Singapore) in relation to the adoption of Singapore Financial Reporting Standard 39—Financial Instruments: Recognition and Measurement (FRS 39) or Singapore Financial Reporting Standard 109—Financial Instruments (FRS 109), for accounting purposes, they may be required to recognize gains or losses (not being gains or losses in the nature of capital) even though no sale or disposal of our ADSs or our common shares has been made. Our corporate shareholders who may be subject to such provisions should consult their own accounting and tax advisers regarding the Singapore income tax consequences of their acquisition, ownership and disposition of our ADSs and our common shares arising from the adoption of FRS 39 or FRS 109.

Notwithstanding the above, foreign investors may claim that the gains from disposition of their ADSs or common shares are not sourced or received in Singapore (so that such gains will not be subject to Singapore income tax) if (i) the foreign investor is not a tax resident in Singapore, (ii) the foreign investor does not maintain a permanent establishment in Singapore, to which the disposition gains may be effectively connected, and (iii) the entire process (including the negotiation, deliberation, execution of the acquisition and sale, etc.) leading up to the actual acquisition and sale of our ADSs or our common shares is performed outside of Singapore.

Goods and Services Tax

The issuance of our ADSs or our common shares is not subject to Singapore goods and services tax (GST).

The sale of our ADS or our common shares by a GST-registered investor in Singapore to another person belonging in Singapore is an exempt supply (i.e. not subject to GST). Any input GST (for example, GST on brokerage) incurred by the GST-registered investor in connection with the making of this exempt supply is generally not recoverable and will become an additional cost to the investor unless the investor satisfies certain conditions prescribed under the GST legislation or satisfies certain GST concessions.

Where our ADS or our common shares are sold by a GST-registered investor in the course or furtherance of a business carried on by such an investor to a person belonging outside Singapore (and who is outside Singapore at the time of supply), the sale is a taxable supply subject to GST at a zero rate (i.e. 0%). Any input GST (for example, GST on brokerage) incurred by the GST-registered investor in making this zero-rated supply for the purpose of his business will, subject to the conditions prescribed under the GST legislation, be recoverable from the Comptroller of GST.

Investors should seek their own tax advice on the recoverability of GST incurred on expenses in connection with the purchase and sale of our ADSs or our common shares.

Services such as brokerage and handling services rendered by a GST-registered person to an investor belonging in Singapore in connection with the investor’s purchase or sale of our ADSs or our common shares will be subject to GST at the prevailing rate (currently at 7%). Similar services rendered contractually to an investor belonging outside Singapore should, subject to certain conditions prescribed under the GST legislation, qualify for GST at zero rate (i.e. 0%).

Stamp Duty

No stamp duty is payable on the subscription and issuance of our ADSs or our common shares. As JOYY Inc. is incorporated in the Cayman Islands and our ADSs and our common shares are not registered in any register kept in Singapore, no stamp duty is payable in Singapore on any instrument of transfer upon a sale or gift of our ADSs or our common shares. This position would remain as long as JOYY Inc. is not considered a residential property-holding entity.

United States Federal Income Tax Considerations

The following is a summary of certain United States federal income tax considerations relating to the ownership and disposition of our ADSs or Class A common shares by a U.S. holder (as defined below) that holds our ADSs or Class A common shares as "capital assets" (generally, property held for investment) under the United States Internal Revenue Code of 1986, as amended (the "Code"). This summary is based upon existing United States federal income tax law, which is subject to differing interpretations or change, possibly with retroactive effect. This summary does not discuss all aspects of United States federal income taxation that may be important to particular holders in light of their particular circumstances, including holders subject to special tax rules (for example, banks and other financial institutions, insurance companies, broker-dealers, pension plans, cooperatives, real estate investment trusts, regulated investment companies, traders in securities that have elected the mark-to-market method of accounting for their securities, certain former U.S. citizens or long-term residents, partnerships and their partners, and tax-exempt organizations (including private foundations)), holders who are not U.S. holders, holders who own (directly, indirectly, or constructively) 10% or more of our stock (by vote or value), holders that hold their ADSs or Class A common shares as part of a straddle, hedge, conversion, constructive sale, or other integrated transaction for United States federal income tax purposes, persons who acquired ADSs or Class A common shares pursuant to the exercise of any employee share option or otherwise as compensation, or holders that have a functional currency other than the United States dollar, all of whom may be subject to tax rules that differ significantly from those summarized below. In addition, except to the extent described below, this summary does not discuss any state, local or non-United States tax considerations, Medicare tax, the alternative minimum tax or any non-income tax (such as the United States federal estate or gift tax) considerations. Each U.S. holder is urged to consult its tax advisor regarding the United States federal, state, local, and non-United States income and other tax considerations relating to the ownership and disposition of our ADSs or Class A common shares.

General

For purposes of this summary, a "U.S. holder" is a beneficial owner of our ADSs or Class A common shares that is, for United States federal income tax purposes, (i) an individual who is a citizen or resident of the United States, (ii) a corporation (or other entity treated as a corporation for United States federal income tax purposes) created in, or organized under the law of, the United States or any state thereof or the District of Columbia, (iii) an estate the income of which is includible in gross income for United States federal income tax purposes regardless of its source, or (iv) a trust (A) the administration of which is subject to the primary supervision of a United States court and which has one or more United States persons who have the authority to control all substantial decisions of the trust or (B) that has otherwise elected to be treated as a United States person.

If a partnership (or other entity treated as a partnership for United States federal income tax purposes) is a beneficial owner of our ADSs or Class A common shares, the tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. Partnerships holding our ADSs or Class A common shares and partners in such partnerships are urged to consult their tax advisors regarding the ownership and disposition of our ADSs or Class A common shares.

It is generally expected that a holder of ADSs should be treated, for United States federal income tax purposes, as the beneficial owner of the Class A common shares represented by the ADSs. The remainder of this discussion assumes that a holder of ADSs will be treated in this manner. Predicated upon such treatment, deposits or withdrawals of common shares for ADSs will not be subject to United States federal income tax.

Passive Foreign Investment Company Considerations

A non-United States corporation, such as our company, will be classified as a "passive foreign investment company," or "PFIC," for United States federal income tax purposes, for any taxable year, if either (i) 75% or more of its gross income for such year consists of certain types of "passive" income or (ii) 50% or more of its assets (generally determined on the basis of a quarterly average) during such year produce or are held for the production of passive income. For this purpose, cash and assets readily convertible into cash are categorized as passive assets and the company's unbooked intangibles are taken into account for determining the value of its assets. We will be treated as owning our proportionate share of the assets and earning our proportionate share of the income of any other corporation in which we own, directly or indirectly, 25% or more (by value) of the stock.

Although the law in this regard is unclear, we treat the variable interest entities as being owned by us for United States federal income tax purposes, not only because we exercise effective control over the operation of such entities but also because we are entitled to substantially all of their economic benefits, and, as a result, we consolidate their operating results in our consolidated financial statements.

Based on the market price of our ADSs and the nature and composition of our assets (in particular, the retention of substantial amounts of cash, deposits and investments), we believe that we were a PFIC for United States federal income tax purposes for the taxable year ended December 31, 2021, and we will likely be a PFIC for our current taxable year unless the market price of our ADSs increases and/or we invest a substantial amount of the cash and other passive assets we hold in assets that produce or are held for the production of active income.

If we are a PFIC for any year during which a U.S. holder holds our ADSs or Class A common shares, we generally would continue to be treated as a PFIC for all succeeding years during which such U.S. holder holds our ADSs or Class A common shares even if we cease to meet the threshold requirements for PFIC status, unless a U.S. holder makes a taxable "deemed sale" election that may allow the U.S. holder to eliminate the continuing PFIC status under certain circumstances.

The United States federal income tax rules that apply if we are classified as a PFIC for the current taxable year or any subsequent taxable year are generally discussed below under "Passive Foreign Investment Company Rules."

Dividends

Subject to the discussion below under "Passive Foreign Investment Company Rules," any cash distributions (including the amount of any taxes withheld) paid on our ADSs or Class A common shares out of our current or accumulated earnings and profits, as determined under United States federal income tax principles, will generally be includible in the gross income of a U.S. holder as dividend income on the day actually or constructively received by the U.S. holder, in the case of common shares, or by the Depositary, in the case of ADSs. Because we do not intend to determine our earnings and profits on the basis of United States federal income tax principles, any distribution paid will generally be reported as a "dividend" for United States federal income tax purposes. A non-corporate recipient of dividend income will generally be subject to tax on dividend income from a "qualified foreign corporation" at a reduced United States federal tax rate rather than the marginal tax rates generally applicable to ordinary income provided that certain holding period requirements are met.

A non-United States corporation (other than a corporation that is classified as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) will generally be considered to be a qualified foreign corporation with respect to any dividend it pays on stock (or ADSs in respect of such stock) which is readily tradable on an established securities market in the United States or, in the event that the company is deemed to be a PRC resident under the PRC Enterprise Income Tax Law, the company is eligible for the benefits of the United States-PRC treaty (the "Treaty"). Although no assurances may be given, our ADSs are expected to be readily tradable on the Nasdaq Global Select Market, which is an established securities market in the United States. Since we do not expect that our Class A common shares will be listed on established securities markets, it is unclear whether dividends that we pay on our Class A common shares that are not backed by ADSs currently meet the conditions required for these reduced tax rates. There can be no assurance that our ADSs will be considered readily tradable on an established securities market in the current taxable year or future taxable years. Furthermore, as mentioned above, we believe that we were a PFIC for the taxable year ended December 31, 2021, and we will likely be classified as a PFIC for our current taxable year. U.S. holders are urged to consult their tax advisors regarding the availability of the reduced tax rate on dividends with respect to our ADSs or Class A common shares in their particular circumstances.

Dividends received on the ADSs or Class A common shares are not expected to be eligible for the dividends received deduction allowed to corporations. Each U.S. holder is advised to consult its tax advisor regarding the rate of tax that will apply to such holder with respect to dividend distributions, if any, received from us.

Dividends generally will be treated as income from foreign sources for United States foreign tax credit purposes and generally will constitute passive category income. A U.S. holder may be eligible, subject to a number of complex limitations, to claim a foreign tax credit in respect of any foreign withholding taxes imposed on dividends received on ADSs or Class A common shares. A U.S. holder who does not elect to claim a foreign tax credit for foreign tax withheld, may instead claim a deduction, for United States federal income tax purposes, in respect of such withholdings, but only for a year in which such U.S. holder elects to do so for all creditable foreign income taxes. The rules governing the foreign tax credit are complex. Each U.S. holder is advised to consult its tax advisor regarding the availability of the foreign tax credit under their particular circumstances.

Sale or Other Disposition of ADSs or Common Shares

Subject to the discussion below under "Passive Foreign Investment Company Rules," a U.S. holder generally will recognize capital gain or loss upon the sale or other disposition of ADSs or Class A common shares in an amount equal to the difference between the amount realized upon the disposition and the U.S. holder's adjusted tax basis in such ADSs or Class A common shares. Any capital gain or loss will be long-term if the ADSs or Class A common shares have been held for more than one year and will generally be United States source gain or loss for United States foreign tax credit purposes, which will generally limit the availability of foreign tax credits. Long-term capital gains of individuals and other non-corporate U.S. holders generally are eligible for a reduced rate of taxation. The deductibility of a capital loss may be subject to limitations.

As described in "Item 10. Additional Information—E. Taxation—People's Republic of China Taxation," if we are deemed to be a PRC resident enterprise under the PRC Enterprise Income Tax Law, gains from the disposition of the ADSs or Class A common shares may be subject to PRC income tax and will generally be United States source, which may limit the ability to receive a foreign tax credit. If a U.S. Holder is eligible for the benefits of the Treaty, such holder may be able to elect to treat such gain as PRC source income under the Treaty. Pursuant to recently issued United States Treasury regulations, however, if a U.S. Holder is not eligible for the benefits of the Treaty or does not elect to apply the Treaty, then such holder may not be able to claim a foreign tax credit arising from any PRC tax imposed on the disposition of the ADSs or Class A common shares. The rules regarding foreign tax credits and deduction of foreign taxes are complex. U.S. Holders should consult their tax advisors regarding the availability of a foreign tax credit or deduction in light of their particular circumstances, including their eligibility for benefits under the Treaty, and the potential impact of the recently issued United States Treasury regulations.

As mentioned above, we believe that we were a PFIC for the taxable year ended December 31, 2021, and we will likely be classified as a PFIC for our current taxable year. U.S. holders are urged to consult their tax advisors regarding the tax considerations of the sale or other disposition of our ADSs or Class A common shares under their particular circumstances.

Passive Foreign Investment Company Rules

As mentioned above, we believe that we were a PFIC for the taxable year ended December 31, 2021, and we will likely be classified as a PFIC for our current taxable year. If we are classified as a PFIC for any taxable year during which a U.S. holder holds our ADSs or Class A common shares, and unless the U.S. holder makes a mark-to-market election (as described below), the U.S. holder will generally be subject to special tax rules that have a penalizing effect, regardless of whether we remain a PFIC, on (i) any excess distribution that we make to the U.S. holder (which generally means any distribution paid during a taxable year to a U.S. holder that is greater than 125% of the average annual distributions paid in the three preceding taxable years or, if shorter, the U.S. holder's holding period for the ADSs or Class A common shares), and (ii) any gain realized on the sale or other disposition, including, under certain circumstances, a pledge, of ADSs or Class A common shares. Under the PFIC rules:

- such excess distribution and/or gain will be allocated ratably over the U.S. holder's holding period for the ADSs or Class A common shares;

- such amount allocated to the current taxable year and any taxable years in the U.S. holder's holding period prior to the first taxable year in which we are classified as a PFIC, or pre-PFIC year, will be taxable as ordinary income;

- such amount allocated to each prior taxable year, other than a pre-PFIC year, will be subject to tax at the highest tax rate in effect applicable to the U.S. holder for that year; and

- an interest charge generally applicable to underpayments of tax will be imposed on the tax attributable to each prior taxable year, other than a pre-PFIC year.

If we are a PFIC for any taxable year during which a U.S. holder holds our ADSs or Class A common shares and any of our non-United States subsidiaries is also a PFIC, such U.S. holder would be treated as owning a proportionate amount (by value) of the shares of the lower-tier PFIC and would be subject to the rules described above on certain distributions by a lower-tier PFIC and a disposition of shares of a lower-tier PFIC even though such U.S. holder would not receive the proceeds of those distributions or dispositions. Each U.S. holder is advised to consult its tax advisor regarding the application of the PFIC rules to any of our subsidiaries.

As an alternative to the foregoing rules, a U.S. holder of "marketable stock" (as defined below) in a PFIC may make a mark-to-market election for such stock to elect out of the tax treatment discussed above. The mark-to-market election is available only for "marketable stock," which is stock that is traded in other than de minimis quantities on at least 15 days during each calendar quarter ("regularly traded") on a qualified exchange or other market, as defined in applicable United States Treasury regulations. Our ADSs are listed on the Nasdaq Global Select Market, which is a qualified exchange or market for these purposes. We anticipate that our ADSs should qualify as being regularly traded, but no assurances may be given in this regard. Because a mark-to-market election technically cannot be made for equity interests in any lower-tier PFICs that we own, a U.S. holder may continue to be subject to the PFIC rules with respect to its indirect interest in any investments held by us that are treated as an equity interest in a PFIC for United States federal income tax purposes. If a mark-to-market election is made, the U.S. holder will generally (i) include as ordinary income for each taxable year that we are a PFIC the excess, if any, of the fair market value of ADSs held at the end of the taxable year over the adjusted tax basis of such ADSs and (ii) deduct as an ordinary loss the excess, if any, of the adjusted tax basis of the ADSs over the fair market value of such ADSs held at the end of the taxable year, but only to the extent of the net amount previously included in income as a result of the mark-to-market election. The U.S. holder's adjusted tax basis in the ADSs would be adjusted to reflect any income or loss resulting from the mark-to-market election.

If a U.S. holder makes a mark-to-market election in respect of a corporation classified as a PFIC and such corporation ceases to be classified as a PFIC, the U.S. holder will not be required to take into account the mark-to-market gain or loss described above during any period that such corporation is not classified as a PFIC.

We do not intend to provide information necessary for U.S. holders to make qualified electing fund elections, which, if available, would result in tax treatment different from (and generally less adverse than) the general tax treatment for PFICs described above.

If a U.S. holder owns our ADSs or Class A common shares during any taxable year that we are a PFIC, such holder is required to file an annual report containing such information as the United States Treasury Department may require and may be required to file an annual IRS Form 8621. Each U.S. holder is advised to consult its tax advisors regarding the potential tax consequences to such holder if we are or become classified as a PFIC, including the possibility of making a mark-to-market election.

People's Republic of China Taxation

Under the existing tax laws in the PRC, we are qualified as a non-resident enterprise. We are a holding company incorporated in the Cayman Islands. Our holding company indirectly holds 100% of the equity interests in our PRC subsidiaries. Our business operations within PRC are principally conducted through our PRC subsidiaries and the variable interest entities. The PRC Enterprise Income Tax Law, which was most recently amended on December 29, 2018, and its implementation rules, which was most recently amended on April 23, 2019, provide that China-sourced income of foreign enterprises, such as dividends paid by a PRC subsidiary to its overseas parent that is not a PRC resident enterprise and has no establishment in the PRC, will normally be subject to PRC withholding tax at a rate of 10% (a further reduced WHT rate may be available according to the applicable double tax treaty or arrangement).

If the PRC tax authorities determine that JOYY Inc., our Cayman Islands holding company, is a PRC resident enterprise for enterprise income tax purposes, our world-wide income could be subject to PRC tax at a rate of 25%, which could materially reduce our net income. In addition, we will also be subject to PRC enterprise income tax reporting obligations. Furthermore, although dividends paid by one PRC tax resident to another PRC tax resident should be qualified as "tax-exempt income" under the PRC Enterprise Income Tax Law, we cannot assure you that dividends by our PRC subsidiaries to our Cayman holding company will not be subject to a 10% withholding tax, as the PRC foreign exchange control authorities, which enforce the withholding tax on dividends, and the PRC tax authorities have not yet issued guidance with respect to the processing of outbound remittances to entities that are treated as resident enterprises for PRC enterprise income tax purposes. In addition, ADS holders may be subject to PRC withholding tax on dividends payable by us and gains realized on the sale or other dispositions of ADSs or common shares, if the PRC tax authorities determine that our Cayman Islands holding company is a PRC resident enterprise for enterprise income tax purposes. See "Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate—Under the PRC enterprise income tax law, we may be classified as a PRC "resident enterprise," which could result in unfavorable tax consequences to us and our shareholders and have a material adverse effect on our results of operations and the value of your investment."

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

We are subject to the periodic reporting and other informational requirements of the Securities Exchange Act of 1934 or the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F within four months after the end of each fiscal year which is December 31. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. Copies of reports and other information, when filed, may also be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the SEC at 1-800-SEC-0330. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

We will furnish Citibank N.A., the depositary of our ADSs, with our annual reports, which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP, and all notices of shareholders' meetings and other reports and communications that are made generally available to our shareholders. The depositary will make such notices, reports and communications available to holders of ADSs and, upon our request, will mail to all record holders of ADSs the information contained in any notice of a shareholders' meeting received by the depositary from us.

I. Subsidiary Information

For a list of our principal subsidiaries, see "Item 4. Information on the Company—C. Organizational Structure."

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Exchange Risk

We are exposed to foreign exchange risks arising from various currency exposures. While a majority of our revenues and expenses are denominated in U.S. dollars, some of our expenses and revenues are dominated in various other foreign currencies, such as Renminbi, Euro, Singapore dollars, Japanese yen, Indonesian rupiah, Vietnamese dong, Thai baht, Malaysian ringgit, Turkish lira, among other currencies. We do not rely on any single currency as we earn revenue in different local currencies across our markets and keep a significant cash position in U.S. dollars.

Our expenses may become higher and our revenue and operating metrics may become lower than would be the case if exchange rates were stable or if we were operating and reporting in one currency. For example, if the U.S. dollar weakens relative to currencies in our local markets, our revenue and operating expenses will be higher than if currencies had remained constant. Likewise, if the U.S. dollar strengthens relative to currencies in our local markets, our revenue and operating expenses will be lower than if currencies had remained constant. Movements in foreign currency exchange rates may have a material adverse effect on our results of operations, which may cause our financial and operational metrics reported in the U.S. dollar to be not fully representative of the underlying business performance. We believe that our diversification in geographic coverage benefits our shareholders over the long-term. We had used and may enter into derivative financial instruments including the forward exchange contracts to hedge our exposure to potential foreign currency risks. See "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in Jurisdictions We Operate— Fluctuations in foreign currency exchange rates may adversely affect our operational and financial results, which we report in U.S. dollars."

As of December 31, 2021, we had RMB-denominated cash and cash equivalents, restricted cash and cash equivalents, short-term deposits and short-term investments of RMB3,462.6 million, RMB47.0 million, RMB2,170.0 million and RMB2,250.1 million, respectively. A 10% depreciation of Renminbi against the U.S. dollars based on the foreign exchange rate on December 31, 2021 would result in a decrease of US$54.3 million in cash and cash equivalents, US$0.7 million in restricted cash and cash equivalents, US$34.0 million in short-term deposits and US$35.3 million in short-term investments. A 10% appreciation of Renminbi against the U.S. dollars based on the foreign exchange rate on December 31, 2021 would result in an increase of US$54.3 million in cash and cash equivalents, US$0.7 million in restricted cash and cash equivalents, US$34.0 million in short-term deposits and US$35.3 million in short-term investments.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to the interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. Interest-earning instruments carry a degree of interest rate risk. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in market interest rates. However, our future interest income may fall short of expectations due to changes in market interest rates. A hypothetical one percentage point decrease in interest rates would have resulted in a decrease of US$17.5 million in our interest income for the year ended December 31, 2021.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. Debt Securities

Not applicable.

B. Warrants and Rights

Not applicable.

C. Other Securities

Not applicable.

D. American Depositary Shares

Fees and Charges Our ADS holders May Have to Pay

As an ADS holder, you will be required to pay the following service fees to the depositary bank:

Service	Fees
• Issuance of ADSs (e.g., an issuance upon a deposit of Shares, upon a change in the ADS(s)-to-Share(s) ratio, or for any other reason), excluding issuances as a result of distributions described in paragraph (4) below	Up to US$5.00 per 100 ADSs (or fraction thereof) issued
• Cancellation of ADSs (e.g., a cancellation of ADSs for Delivery of deposited Shares, upon a change in the ADS(s)-to-Share(s) ratio, or for any other reason)	Up to US$5.00 per 100 ADSs (or fraction thereof) cancelled
• Distribution of cash dividends or other cash distributions (e.g., upon a sale of rights and other entitlements)	Up to US$5.00 per 100 ADSs (or fraction thereof) held
• Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions, or (ii) an exercise of rights to purchase additional ADSs	Up to US$5.00 per 100 ADSs (or fraction thereof) held
• Distribution of securities other than ADSs or rights to purchase additional ADSs (e.g., spin-off shares)	Up to US$5.00 per 100 ADSs (or fraction thereof) held
• ADS Services	Up to US$5.00 per 100 ADSs (or fraction thereof) held on the applicable record date(s) established by the Depositary

As an ADS holder, you will also be responsible for the following ADS charges:

(i) taxes (including applicable interest and penalties) and other governmental charges;

(ii) the registration fees as may from time to time be in effect for the registration of Class A common shares on the share register and applicable to transfers of Class A common shares to or from the name of the custodian, the depositary bank or any nominees upon the making of deposits and withdrawals, respectively;

(iii) certain cable, telex and facsimile transmission and delivery expenses;

(iv) the expenses and charges incurred by the depositary bank in the conversion of foreign currency;

(v) the fees and expenses incurred by the depositary bank in connection with compliance with exchange control regulations and other regulatory requirements applicable to Class A common shares, ADSs and ADRs; and

(vi) the fees and expenses incurred by the depositary bank, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

ADS fees and charges for (i) the issuance of ADSs and (ii) the cancellation of ADSs will be payable by the person for whom the ADSs are so issued by the depositary bank (in the case of ADS issuances) and by the person for whom ADSs are being cancelled (in the case of ADS cancellations). In the case of ADSs issued by the depositary bank into DTC or presented to the depositary via DTC, the ADS issuance and cancellation fees and charges will be payable by the DTC participant(s) receiving the ADSs from the depositary bank or the DTC participant(s) holding the ADSs being cancelled, as the case may be, on behalf of the beneficial owner(s) and will be charged by the DTC participant(s) to the account(s) of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participant(s) as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are payable by holders as of the applicable ADS record date established by the depositary bank. In the case of distributions of cash, the amount of the applicable ADS fees and charges is deducted from the funds being distributed. In the case of (i) distributions other than cash and (ii) the ADS service fee, the applicable holders as of the ADS record date established by the depositary bank will be invoiced for the amount of the ADS fees and charges and such ADS fees may be deducted from distributions made to holders. For ADSs held through DTC, the ADS fees and charges for distributions other than cash and the ADS service fee may be deducted from distributions made through DTC, and may be charged to the DTC participants in accordance with the procedures and practices prescribed by DTC from time to time and the DTC participants in turn charge the amount of such ADS fees and charges to the beneficial owners for whom they hold ADSs.

In the event of refusal to pay the depositary bank fees, the depositary bank may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary bank fees from any distribution to be made to the ADS holder. Certain of the depositary fees and charges (such as the ADS service fee) may become payable shortly after the closing of the ADS offering. Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the depositary bank. You will receive prior notice of such changes. The depositary bank may reimburse us for certain expenses incurred by us in respect of the ADR program, by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the depositary bank agree from time to time.

Fees and Other Payments Made by the Depositary to Us

Citibank, N.A., as our depositary, has agreed to reimburse us for a portion of certain expenses we incur that are related to establishment and maintenance of the ADS program, including investor relations expenses. There are limits on the amount of expenses for which the depositary will reimburse us, but the amount of reimbursement available to us is not related to the amount of fees the depositary collects from investors. Further, the depositary has agreed to reimburse us certain fees payable to the depositary by holders of ADSs. For the year ended December 31, 2021, we were entitled to reimbursement of an insignificant amount for our expenses incurred in connection with the establishment and maintenance of our ADS program.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

See “Item 10. Additional Information” for a description of the rights of securities holders, which remain unchanged.

ITEM 15. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) under the Exchange Act, our management, including our chief executive officer, and our general manager of finance, performed an evaluation of the effectiveness of our disclosure controls and procedures, as that term is defined in Rules 13a-15(e) of the Exchange Act, as of the end of the period covered by this annual report. Based on that evaluation, our management has concluded that our disclosure controls and procedures as of December 31, 2021, were effective in ensuring that the information required to be disclosed by us in the reports that we file and furnish under the Exchange Act was recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our chief executive officer and general manager of finance, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with Generally Accepted Accounting Principles (GAAP) in the United States of America and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of our company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with GAAP, and that receipts and expenditures of our company are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of the unauthorized acquisition, use or disposition of our company's assets that could have a material effect on the consolidated financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management conducted an evaluation of the effectiveness of our company's internal control over financial reporting as of December 31, 2021 based on the framework in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2021.

Attestation Report of the Independent Registered Public Accounting Firm

PricewaterhouseCoopers Zhong Tian LLP, our independent registered public accounting firm, audited the effectiveness of our company's internal control over financial reporting as of December 31, 2021, as stated in its report, which appears on page F-2 of this Form 20-F.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Rule 13a-15 or Rule 15d-15 that occurred during the year ended December 31, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Mr. Peter Andrew Schloss is our audit committee financial expert, who is an independent director under the standards set forth in Nasdaq Stock Market Rule 5605(a)(2) and Rule 10A-3 of the Exchange Act. Mr. Schloss is the chairman of our audit committee.

ITEM 16B. CODE OF ETHICS

Our board of directors has adopted a code of ethics that applies to our directors, officers, employees and agents, including certain provisions that specifically apply to our chief executive officers, chief technology officer, general manager of finance, vice presidents and any other persons who perform similar functions for us, as amended and restated from time to time. We have filed our currently effective code of business conduct and ethics as an exhibit to our annual report on Form 20-F, and have posted a copy of our code of business conduct and ethics on our website at http://ir.joyy.com/corporate-governance.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate fees in connection with certain professional services rendered by PricewaterhouseCoopers Zhong Tian LLP, our independent registered public accounting firm, and its affiliates, for the years indicated. We did not pay any other fees to our independent registered public accounting firm during the periods other than those indicated below.

	For the Year Ended December 31,	
	2020	2021
	(US$ in thousands)	
Audit fees [1]	2,505	2,772
Tax fees[2]	187	—
Others[3]	8	—

(1) "Audit fees" means the aggregate fees billed for professional services rendered by our independent registered public accounting firm for the annual audit and the quarterly reviews of our consolidated financial statements, audit of internal controls over financial reporting of the Company.

(2) "Tax fees" means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal auditors for tax service.

(3) "Others" means the aggregate fees billed in each of the fiscal years listed services rendered by our principal auditors other than services reported under "Audit fees," "Audit related fees" and "Tax fees." In 2020, the other fees was related to general business regulatory advisory service.

The policy of our audit committee is to pre-approve all audit and non-audit services provided by PricewaterhouseCoopers Zhong Tian LLP, and its affiliates, including audit services, audit-related services, tax services and other services, other than those for de minimis services which are approved by the audit committee prior to the completion of the audit. Our audit committee has approved all of our audit and non-audit fees for the year ended December 31, 2021.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

Our board of directors approved a share repurchase plan, or the 2019 Share Repurchase Plan, on August 13, 2019, under which we were authorized to repurchase up to US$300.0 million of our ADSs or common shares over the next 12 months. The 2019 Share Repurchase Plan was publicly announced on August 14, 2019. In May 2020, we announced that, as approved by our board of directors, the 2019 Share Repurchase Plan was extended for another 12-month period upon its original expiry date under which we were authorized to repurchase up to US$300 million of our shares between August 2019 and August 2021. The 2019 Share Repurchase Plan expired already and we repurchased approximately US$300 million of our shares.

Our board of directors approved a new share repurchase plan, or the September 2021 Share Repurchase Plan, on September 9, 2021, under which we may repurchase up to US$200 million of our ADSs or common shares over the next 12 months. The September 2021 Share Repurchase Plan was publicly announced on the same date.

Our board of directors further approved an additional share repurchase plan, or the November 2021 Share Repurchase Plan, on November 16, 2021, under which we may repurchase up to US$1 billion of our ADSs or common shares over the next 12 months. The November 2021 Share Repurchase Plan was publicly announced on November 17, 2021.

In 2021, we purchased an aggregate of approximately 6.5 million ADSs under our share repurchase plans. The table below is a summary of the shares repurchased by us in 2021. All shares were repurchased in the open market pursuant to the 2019 Share Repurchase Plan, the September 2021 Share Repurchase Plan and the November 2021 Share Repurchase Plan.

Period	Total Number of ADSs Purchased	Average Price Paid Per ADS	Total Number of ADSs Purchased as Part of the Publicly Announced Plan	Approximate Dollar Value of ADSs that May Yet Be Purchased Under the Plan
January 2021	170,183	79.26	2,262,619	146,982
March 2021	458,507	95.60	2,721,126	103,149
April 2021	1,009,579	99.05	3,730,705	3,149
September 2021	328,075	50.96	328,075	183,281
October 2021	185,268	50.99	513,343	173,834
November 2021	782,605	49.72	1,295,948	1,134,925
December 2021	3,581,271	47.63	4,877,219	964,336
Total	**6,515,488**	**60.32**	**4,877,219**	**964,336**

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

As a Cayman Islands company listed on the Nasdaq Global Select Market, we are subject to the Nasdaq Global Select Market corporate governance requirements. However, Nasdaq Global Select Market rules permit a foreign private issuer like us to follow the corporate governance practices of its home country. Certain corporate governance practices in the Cayman Islands, which is our home country, may differ significantly from the Nasdaq Global Select Market corporate governance requirements.

We relied on the exemption available to foreign private issuers to the requirement that each member of the compensation committee and the corporate governance and nominating committee be an independent director, following our home country practice in the Cayman Islands. Our compensation committee is chaired by a non-independent director, Mr. David Xueling Li, whose extensive experience in talent management and human resource in the internet industry is considered to be valuable for the functioning of our compensation committee. One of the members of our corporate governance and nominating committee, Mr. Qin Liu, is a non-independent director, whose extensive experience is considered to be valuable for functioning of our corporate governance and nominating committee.

We also relied on the exemption available to foreign private issuers to the requirement that shareholder approval should be obtained prior to the issuance of securities when a stock option or purchase plan is to be established or materially amended or other equity compensation arrangement made or materially amended, pursuant to which stock may be acquired by officers, directors, employees, or consultants. We relied on home country practice exemption and did not convene a shareholder meeting to approve the Amended and Restated 2011 Plan. We also relied on home country practice exemption and did not solicit proxies or provide proxy statements for all meetings of shareholders and provide copies of proxy solicitation to Nasdaq. If we continue to rely on the above and other exemptions available to foreign private issuers in the future, our shareholders may be afforded less protection than they otherwise would under the Nasdaq Global Select Market corporate governance requirements applicable to U.S. domestic issuers. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our ADSs—We are a foreign private issuer within the meaning of the rules under the Exchange Act, and as such we are exempt from certain provisions applicable to United States domestic public companies."

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16I. DISCLOSURE REGARDING FOREIGN JURISDICTION THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

The consolidated financial statements of JOYY Inc. are included at the end of this annual report.

ITEM 19. EXHIBITS

Exhibit Number	Description of Document
1.1	Third Amended and Restated Memorandum and Articles of Association of the Registrant (incorporated herein by reference to Exhibit 3.1 to the current report on Form 6-K (File No. 001-35729), filed with the Securities and Exchange Commission on December 27, 2021)
2.1	Registrant's Specimen American Depositary Receipt (incorporated herein by reference to Exhibit 4.1 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
2.2	Registrant's Specimen Certificate for Common Shares (incorporated herein by reference to Exhibit 4.2 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
2.3	Form of Deposit Agreement, among the Registrant, the depositary and holder of the American Depositary Receipts (incorporated herein by reference to Exhibit 4.3 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
2.4	Amended and Restated Deposit Agreement dated May 21, 2018 among the Registrant, Citibank N.A., as depositary, and holders and beneficial owners of American Depositary Shares evidenced by American Depositary Receipts issued thereunder (incorporated by reference to Exhibit 4.3 to the registration statement on Form S-8 (File No. 333-229099), filed with the Securities and Exchange Commission on December 31, 2018)
2.5*	Description of Securities
4.1	2009 Employee Equity Incentive Scheme of the Registrant, as amended and restated. (incorporated herein by reference to Exhibit 10.1 to the registration statement on Form F-1, as amended (File. No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.2	Amended and Restated 2011 Share Incentive Plan of the Registrant (incorporated herein by reference to Exhibit 99.1 to the current report on Form 6-K (File No. 001-35729), filed with the Securities and Exchange Commission on July 2, 2021)
4.3	Form of Indemnification Agreement with the Registrant's directors and officers (incorporated herein by reference to Exhibit 10.3 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.4	Form of Employment Agreement between the Registrant and an executive officer of the Registrant (incorporated herein by reference to Exhibit 10.4 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.5	English translation of Exclusive Business Cooperation Agreement dated August 12, 2008 between Huanju Shidai (formerly known as Duowan Entertainment Information Technology (Beijing) Co., Ltd.) and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.5 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.6	English translation of Supplementary Agreement dated November 10, 2011 to Exclusive Business Cooperation Agreement between Huanju Shidai and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.6 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.7	English translation of Confirmation Letter dated November 10, 2011 to Exclusive Business Cooperation Agreement between Huanju Shidai and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.7 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)

Exhibit Number	Description of Document
4.8	English translation of Exclusive Technology Support and Technology Services Agreement dated August 12, 2008 between Huanju Shidai and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.8 to the registration statement on Form F-1, as amended (File No. 333184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.9	English translation of Supplementary Agreement dated November 10, 2011 to Exclusive Technology Support and Technology Services Agreement between Huanju Shidai and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.9 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.10	English translation of Confirmation letter dated November 10, 2011 to Exclusive Technology Support and Technology Services Agreement between Huanju Shidai and Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.10 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.11	English translation of Powers of Attorney dated September 16, 2011 issued to Huanju Shidai by each of the shareholders of Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.11 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.12	English translation of Exclusive Option Agreements dated September 16, 2011 among Huanju Shidai, Guangzhou Huaduo and each of the shareholders of Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.12 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.13	English translation of Equity Interest Pledge Agreements dated September 16, 2011 between Huanju Shidai and each of the shareholders of Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.13 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.14	English translation of Consent Letter dated November 10, 2011 issued by the shareholders of Guangzhou Huaduo (incorporated herein by reference to Exhibit 10.14 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.15	English translation of Equity Pledge Agreements dated January 15, 2021 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and the shareholder of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.15 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.16	English translation of Exclusive Service Agreement dated January 15, 2021 between Guangzhou BaiGuoYuan and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.16 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.17	English translation of Exclusive Option Agreements dated January 15, 2021 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and the shareholder of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.17 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.18	English translation of Shareholder Voting Rights Proxy Agreements dated January 15, 2021 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and the shareholder of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.18 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)

Exhibit Number	Description of Document
4.19	English translation of Equity Pledge Agreements dated January 15, 2021 among Guangzhou Qianxun, BaiGuoYuan Technology and each of shareholders of Guangzhou Qianxun (incorporated herein by reference to Exhibit 4.19 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.20	English translation of Exclusive Service Agreement dated January 15, 2021 between Guangzhou Qianxun and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.20 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.21	English translation of Exclusive Option Agreements dated January 15, 2021 among Guangzhou Qianxun, BaiGuoYuan Technology and each of shareholders of Guangzhou Qianxun (incorporated herein by reference to Exhibit 4.21 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.22	English translation of Shareholder Voting Rights Proxy Agreements dated January 15, 2021 among Guangzhou Qianxun, BaiGuoYuan Technology and each of shareholders of Guangzhou Qianxun (incorporated herein by reference to Exhibit 4.22 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.23	English translation of Equity Pledge Agreements dated January 15, 2021 among Guangzhou Shangying Internet Technology Co., Ltd. (“Guangzhou Shangying”), BaiGuoYuan Technology and each of shareholders of Guangzhou Shangying (incorporated herein by reference to Exhibit 4.23 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.24	English translation of Exclusive Service Agreement dated January 15, 2021 between Guangzhou Shangying and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.24 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.25	English translation of Exclusive Option Agreements dated January 15, 2021 among Guangzhou Shangying, BaoGuoYuan Technology and each of shareholders of Guangzhou Shangying (incorporated herein by reference to Exhibit 4.25 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.26	English translation of Shareholder Voting Rights Proxy Agreements dated January 15, 2021 among Guangzhou Shangying, BaiGuoYuan Technology and each of shareholders of Guangzhou Shangying (incorporated herein by reference to Exhibit 4.26 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.27	English translation of Partnership Interest Pledge Agreements dated January 15, 2021 among Guangzhou Fangu Internet Technology L.P. (“Guangzhou Fangu”), BaiGuoYuan Technology and each of partners of Guangzhou Fangu (incorporated herein by reference to Exhibit 4.27 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.28	English translation of Exclusive Service Agreement dated January 15, 2021 between Guangzhou Fangu and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.28 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.29	English translation of Exclusive Option Agreements dated January 15, 2021 among Guangzhou Fangu, BaiGuoYuan Technology and each of partners of Guangzhou Fangu (incorporated herein by reference to Exhibit 4.29 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.30	English translation of Partner Voting Rights Proxy Agreements dated January 15, 2021 among Guangzhou Fangu, BaiGuoYuan Technology and each of partners of Guangzhou Fangu (incorporated herein by reference to Exhibit 4.30 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)

Exhibit Number	Description of Document
4.31	English translation of Partnership Interest Pledge Agreements dated January 15, 2021 among Guangzhou Wanyin Internet Technology L.P. ("Guangzhou Wanyin"), BaiGuoYuan Technology and each of partners of Guangzhou Wanyin (incorporated herein by reference to Exhibit 4.31 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.32	English translation of Exclusive Service Agreement dated January 15, 2021 between Guangzhou Wanyin and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.32 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.33	English translation of Exclusive Option Agreements dated January 15, 2021 among Guangzhou Wanyin, BaiGuoYuan Technology and each of partners of Guangzhou Wanyin (incorporated herein by reference to Exhibit 4.33 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.34	English translation of Partner Voting Rights Proxy Agreements dated January 15, 2021 among Guangzhou Wanyin, BaiGuoYuan Technology and each of partners of Guangzhou Wanyin (incorporated herein by reference to Exhibit 4.34 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.35	English translation of Equity Pledge Agreements dated December 9, 2020 among Guangzhou Ruicheng Internet Technology Co., Ltd. ("Guangzhou Ruicheng"), Guangzhou Huanju Shidai and each of shareholders of Guangzhou Ruicheng (incorporated herein by reference to Exhibit 4.35 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.36	English translation of Exclusive Service Agreement dated December 9, 2020 between Guangzhou Ruicheng and Guangzhou Huanju Shidai (incorporated herein by reference to Exhibit 4.36 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.37	English translation of Exclusive Option Agreements dated December 9, 2020 among Guangzhou Ruicheng, Guangzhou Huanju Shidai and each of shareholders of Guangzhou Ruicheng (incorporated herein by reference to Exhibit 4.37 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.38	English translation of Shareholder Voting Rights Proxy Agreements dated December 9, 2020 among Guangzhou Ruicheng, Guangzhou Huanju Shidai and each of shareholders of Guangzhou Ruicheng (incorporated herein by reference to Exhibit 4.38 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.39	English translation of Equity Pledge Agreements dated December 9, 2020 among Guang-zhou Xuancheng Internet Technology Co., Ltd. ("Guangzhou Xuancheng"), Guangzhou Huanju Shidai and each of shareholders of Guangzhou Ruicheng (incorporated herein by reference to Exhibit 4.39 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.40	English translation of Exclusive Service Agreement dated December 9, 2020 between Guangzhou Xuancheng and Guangzhou Huanju Shidai (incorporated herein by reference to Exhibit 4.40 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.41	English translation of Exclusive Option Agreements dated December 9, 2020 among Guangzhou Xuancheng, Guangzhou Huanju Shidai and each of shareholders of Guangzhou Xuancheng (incorporated herein by reference to Exhibit 4.41 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.42	English translation of Shareholder Voting Rights Proxy Agreements dated December 9, 2020 among Guangzhou Xuancheng, Guangzhou Huanju Shidai and each of shareholders of Guangzhou Xuancheng (incorporated herein by reference to Exhibit 4.42 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)

Exhibit Number	Description of Document
4.43	English translation of Partnership Interest Pledge Agreements dated December 9, 2020 among Guangzhou Xuanyi Internet Technology L.P. (“Guangzhou Xuanyi”), Guangzhou Huanju Shidai and each of partners of Guangzhou Xuanyi (incorporated herein by reference to Exhibit 4.43 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.44	English translation of Exclusive Service Agreement dated December 9, 2020 between Guangzhou Xuanyi and Guangzhou Huanju Shidai (incorporated herein by reference to Exhibit 4.44 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.45	English translation of Exclusive Option Agreements dated December 9, 2020 among Guangzhou Xuanyi, Guangzhou Huanju Shidai and each of partners of Guangzhou Xuanyi (incorporated herein by reference to Exhibit 4.45 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.46	English translation of Partner Voting Rights Proxy Agreements dated December 9, 2020 among Guangzhou Xuanyi, Guangzhou Huanju Shidai and each of partners of Guangzhou Xuanyi (incorporated herein by reference to Exhibit 4.46 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.47	English translation of Partnership Interest Pledge Agreements dated December 9, 2020 among Guangzhou Yueyi Internet Technology L.P. (“Guangzhou Yueyi”), Guangzhou Huanju Shidai and each of partners of Guangzhou Yueyi (incorporated herein by reference to Exhibit 4.47 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.48	English translation of Exclusive Service Agreement dated December 9, 2020 between Guangzhou Yueyi and Guangzhou Huanju Shidai (incorporated herein by reference to Exhibit 4.48 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.49	English translation of Exclusive Option Agreements dated December 9, 2020 among Guangzhou Yueyi, Guangzhou Huanju Shidai and each of partners of Guangzhou Yueyi (incorporated herein by reference to Exhibit 4.49 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.50	English translation of Partner Voting Rights Proxy Agreements dated December 9, 2020 among Guangzhou Yueyi, Guangzhou Huanju Shidai and each of partners of Guangzhou Yueyi (incorporated herein by reference to Exhibit 4.50 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.51	English translation of Exclusive Business Cooperation Agreement dated December 3, 2009 between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.15 to the registration statement on Form F-1, as amended (File No. 333184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.52	English translation of Supplementary Agreement dated November 10, 2011 to Exclusive Business Cooperation Agreement between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.16 to the registration statement on Form F-1, as amended (File No. 333184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.53	English translation of Confirmation Letter dated November 10, 2011 to Exclusive Business Cooperation Agreement between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.17 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.54	English translation of Exclusive Technology Support and Technology Services Agreement dated December 3, 2009 between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.18 to the registration

Exhibit Number	Description of Document
	statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.55	English translation of Supplementary Agreement dated November 10, 2011 to Exclusive Technology Support and Technology Services Agreement between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.19 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.56	English translation of Confirmation Letter dated November 10, 2011 to Exclusive Technology Support and Technology Services Agreement between Huanju Shidai and Beijing Tuda (incorporated herein by reference to Exhibit 10.20 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.57	English translation of Powers of Attorney dated May 27, 2011 issued to Huanju Shidai by each of the shareholders of Beijing Tuda (incorporated herein by reference to Exhibit 10.21 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.58	English translation of Exclusive Option Agreements dated May 27, 2011 among Huanju Shidai, Beijing Tuda and each of the shareholders of Beijing Tuda (incorporated herein by reference to Exhibit 10.22 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.59	English translation of Equity Interest Pledge Agreements dated July 1, 2011 between Huanju Shidai and each of the shareholders of Beijing Tuda (incorporated herein by reference to Exhibit 10.23 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.60	English translation of Consent Letter dated November 10, 2011 issued by the shareholders of Beijing Tuda (incorporated herein by reference to Exhibit 10.24 to the registration statement on Form F-1, as amended (File No. 333-184414), initially filed with the Securities and Exchange Commission on October 15, 2012)
4.61	English summary of Contract for State-owned Construction Land Use Rights Assignment, dated August 20, 2015, by and between Guangzhou Land Resources and Real Estate Administration Bureau and Guangzhou Huaduo (incorporated herein by reference to Exhibit 4.27 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)
4.62	English translation of Exclusive Business Cooperation Agreement dated August 25, 2015 between Bilin online and Bilin Changxiang (incorporated herein by reference to Exhibit 4.28 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)
4.63	English translation of Exclusive Option Agreement dated August 25, 2015 among David Xueling Li, Bilin Online and Bilin Changxiang (incorporated herein by reference to Exhibit 4.29 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)
4.64	English translation of Exclusive Assets Purchase Agreement dated August 25, 2015 among David Xueling Li, Bilin Online and Bilin Changxiang (incorporated herein by reference to Exhibit 4.30 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)
4.65	English translation of Equity Interest Pledge Agreement dated August 25, 2015 among David Xueling Li, Bilin Online and Bilin Changxiang (incorporated herein by reference to Exhibit 4.31 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)
4.66	English translation of Power of Attorney dated August 25, 2015 issued to Bilin Changxiang by David Xueling Li (incorporated herein by reference to Exhibit 4.32 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 28, 2016)

Exhibit Number	Description of Document
4.67	Amended and Restated Shareholders Agreement dated as of March 8, 2018 between HUYA Inc. and other parties thereto (incorporated herein by reference to Exhibit 4.37 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2018)
4.68	English translation of Non-Compete Agreement between Guangzhou Huaduo and Guangzhou Huya dated March 8, 2018 (incorporated herein by reference to Exhibit 4.38 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2018)
4.69	English translation of Business Cooperation Agreement between Shenzhen Tencent Computer Systems Company Ltd. and Guangzhou Huya dated February 5, 2018 (incorporated herein by reference to Exhibit 4.39 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2018)
4.70	English translation of Equity Interest Pledge Agreements dated January 17, 2017 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and each of the shareholders of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.44 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2019)
4.71	English translation of Exclusive Asset Purchase Agreements dated January 17, 2017 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and each of the shareholders of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.45 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2019)
4.72	English translation of Exclusive Business Cooperation Agreement dated January 17, 2017 between Guangzhou BaiGuoYuan and BaiGuoYuan Technology (incorporated herein by reference to Exhibit 4.46 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2019)
4.73	English translation of Exclusive Option Agreements dated January 17, 2017 among Guangzhou BaiGuoYuan, BaiGuoYuan Technology and each of the shareholders of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.47 from our annual report on Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 26, 2019)
4.74	English translation of Shareholder Voting Rights Proxy Agreements dated January 17, 2017 issued to BaiGuoYuan Technology by each of the shareholders of Guangzhou BaiGuoYuan (incorporated herein by reference to Exhibit 4.48 from our annual report on Form 20-F (File No. 00135729), filed with the Securities and Exchange Commission on April 26, 2019)
4.75	English translation of Equity Interest Pledge Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Yunbu and each of the shareholders of Chengdu Yunbu (incorporated by reference to Exhibit 4.49 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.76	English translation of Exclusive Asset Purchase Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Yunbu and each of the shareholders of Chengdu Yunbu (incorporated by reference to Exhibit 4.50 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.77	English translation of Exclusive Business Cooperation Agreement dated July 31, 2019 between Guangzhou Wangxing and Chengdu Yunbu (incorporated by reference to Exhibit 4.51 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.78	English translation of Exclusive Option Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Yunbu and each of the shareholders of Chengdu Yunbu (incorporated by reference to Exhibit 4.52 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)

Exhibit Number	Description of Document
4.79	English translation of Shareholder Voting Rights Proxy Agreements dated July 31, 2019 issued to Guangzhou Wangxing by each of the shareholders of Chengdu Yunbu (incorporated by reference to Exhibit 4.53 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.80	English translation of Equity Interest Pledge Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Luota and each of the shareholders of Chengdu Luota (incorporated by reference to Exhibit 4.54 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.81	English translation of Exclusive Asset Purchase Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Luota and each of the shareholders of Chengdu Luota (incorporated by reference to Exhibit 4.55 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.82	English translation of Exclusive Business Cooperation Agreement dated July 31, 2019 between Guangzhou Wangxing and Chengdu Luota (incorporated by reference to Exhibit 4.56 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.83	English translation of Exclusive Option Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Luota and each of the shareholders of Chengdu Luota (incorporated by reference to Exhibit 4.57 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.84	English translation of Shareholder Voting Rights Proxy Agreements dated July 31, 2019 issued to Guangzhou Wangxing by each of the shareholders of Chengdu Luota (incorporated by reference to Exhibit 4.58 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.85	English translation of Equity Interest Pledge Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Jiyue and each of the shareholders of Chengdu Jiyue (incorporated by reference to Exhibit 4.59 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.86	English translation of Exclusive Asset Purchase Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Jiyue and each of the shareholders of Chengdu Jiyue (incorporated by reference to Exhibit 4.60 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.87	English translation of Exclusive Business Cooperation Agreement dated July 31, 2019 between Guangzhou Wangxing and Chengdu Jiyue (incorporated by reference to Exhibit 4.61 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.88	English translation of Exclusive Option Agreements dated July 31, 2019 among Guangzhou Wangxing, Chengdu Jiyue and each of the shareholders of Chengdu Jiyue (incorporated by reference to Exhibit 4.62 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.89	English translation of Shareholder Voting Rights Proxy Agreements dated July 31, 2019 issued to Guangzhou Wangxing by each of the shareholders of Chengdu Jiyue (incorporated by reference to Exhibit 4.63 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.90	Indenture, dated June 24, 2019 constituting $500 million 0.75% Convertible Senior Notes due 2025 (incorporated by reference to Exhibit 4.64 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)
4.91	Indenture, dated June 24, 2019 constituting $500 million 1.375% Convertible Senior Notes due 2026 (incorporated by reference to Exhibit 4.65 to the Form 20-F (File No. 001-35729), filed with the Securities and Exchange Commission on April 27, 2020)

Exhibit Number	Description of Document
4.92	2019 Share Incentive Awards Arrangement (incorporated herein by reference to Exhibit 10.1 from our Form S-8 filed with the Securities and Exchange Commission on September 30, 2019)
4.93	Amended and Restated Share Purchase Agreement among the Buyer as defined therein, Baidu (Hong Kong) Limited, JOYY Inc. and certain investors party thereto, dated February 7, 2021 (incorporated herein by reference to Exhibit 4.105 to the annual report on Form 20-F (File 001-35729), filed with the Securities and Exchange Commission on April 28, 2021)
4.94*	English translation of Exclusive Service Agreement dated March 31, 2021 between Guangzhou LianYiYun and Guangzhou AnSiChuang
4.95*	English translation of Exclusive Option Agreement dated March 31, 2021 among Guangzhou LianYiYun, Guangzhou AnSiChuang and the shareholder of Guangzhou AnSiChuang
4.96*	English translation of Shareholder Voting Rights Proxy Agreement dated March 31, 2021 among Guangzhou LianYiYun, Guangzhou AnSiChuang and the shareholder of Guangzhou AnSiChuang
4.97*	English translation of Equity Interest Pledge Agreements dated March 31, 2021 among Guangzhou LianYiYun, Guangzhou AnSiChuang and the shareholder of Guangzhou AnSiChuang
4.98*	English translation of Exclusive Technology Development, Consulting and Service Agreement dated January 17, 2019 between Haishaman and Shanghai Ruogu
4.99*	English translation of Amended and Restated Exclusive Option Agreement dated June 18, 2021 among Haishaman, Shanghai Ruogu and the shareholders of Shanghai Ruogu
4.100*	English translation of Amended and Restated Equity Interest Pledge Agreements dated June 18, 2021 among Haishaman, Shanghai Ruogu and the shareholders of Shanghai Ruogu
4.101*	English translation of Powers of Attorney dated June 18, 2021 by each of the shareholders of Shanghai Ruogu
4.102*	English translation of Exclusive Technology Development, Consulting and Service Agreement dated February 18, 2022 between Blue Buck, Guangzhou Blue Ocean and Beijing Cengcengceng
4.103*	English translation of Exclusive Option Agreement dated February 18, 2022 among Blue Buck, Guangzhou Blue Ocean, the shareholder of Beijing Cengcengceng and Beijing Cengcengceng
4.104*	English translation of Equity Interest Pledge Agreement dated February 18, 2022 among Blue Buck, Guangzhou Blue Ocean, the shareholder of Beijing Cengcengceng and Beijing Cengcengceng
4.105*	English translation of Power of Attorney dated February 18, 2022 by the shareholder of Beijing Cengcengceng
4.106*	English translation of Exclusive Technology Development, Consulting and Service Agreement dated April 15, 2021 between Guangzhou Blue Ocean and Guangzhou Blue Whale
4.107*	English translation of Exclusive Option Agreement dated April 15, 2021 among Guangzhou Blue Ocean, the shareholders of Guangzhou Blue Whale and Guangzhou Blue Whale
4.108*	English translation of Equity Interest Pledge Agreement dated April 15, 2021 among Guangzhou Blue Ocean, the shareholders of Guangzhou Blue Whale and Guangzhou Blue Whale
4.109*	English translation of Powers of Attorney dated April 15, 2021 by each of the shareholders of Guangzhou Blue Whale

Exhibit Number	Description of Document
4.110*	English summary of Contract for State-owned Construction Land Use Right Assignment dated February 26, 2021, by and between Foshan Natural Resources Bureau and Foshan Tusheng Network Technology Co., Ltd.
8.1*	List of Principal Subsidiaries and Variable Interest Entities
11.1	Amended Code of Business Conduct and Ethics of the Registrant (incorporated herein by reference to Exhibit 11.1 to the annual report on Form 20-F (File No. 001-35729) filed with the Securities and Exchange Commission on April 26, 2013)
12.1*	Certification by Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	Certification by Principal Accounting Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	Certification by Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.2**	Certification by Principal Accounting Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Maples and Calder (Hong Kong) LLP
15.2*	Consent of Fangda Partners
15.3*	Consent of Independent Registered Public Accounting Firm
101.INS*	Inline XBRL Instance Document — the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File — the cover page XBRL tags are embedded within the Exhibit 101 Inline XBRL document set

* Filed with this annual report on Form 20-F

** Furnished with this annual report on Form 20-F

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

JOYY INC.

By: /s/ David Xueling Li

Name: David Xueling Li

Title: Chairman and Chief Executive Officer

Date: April 29, 2022

JOYY INC.

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of JOYY Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of JOYY Inc. and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of comprehensive income, of changes in shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2(s) to the consolidated financial statements, the Company adopted a change in the manner in which it accounts for convertible bonds in 2021.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting appearing under Item 15. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Goodwill impairment assessment - reporting unit within the Bigo segment

As described in Note 16 to the consolidated financial statements, the Company's consolidated goodwill balance was US$1,958 million as of December 31, 2021, and the goodwill associated with the Bigo reportable segment, which only includes the Bigo reporting unit, was US$1,854 million. Management conducts a goodwill impairment test at the reporting unit level at least annually in the fourth quarter, or more frequently when events or circumstances occur indicating that the recorded goodwill may be impaired. The impairment test compares the fair value of a reporting unit with its carrying value, with an impairment charge recorded for the amount by which the carrying amount exceeds the reporting unit's fair value up to a maximum amount of the goodwill balance for the reporting unit. For reporting units evaluated using a quantitative assessment including the Bigo reporting unit, the fair values are determined using an income approach. The income approach determines fair value based on discounted cash flow models derived from the reporting units' long-term forecasts which included a five-year future cash flow projection and an estimated terminal value. As disclosed by management, determining fair value requires the exercise of significant judgment, including judgments about appropriate revenue growth rates, the estimated terminal value using a terminal year long-term future growth rate and discount rates.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the Bigo reporting unit is a critical audit matter are (i) there was significant judgment by management when determining the fair value measurement of the reporting unit; (ii) significant audit effort was necessary to perform procedures and evaluate audit evidence related to management's cash flow projections and significant assumptions related to the revenue growth rates, the estimated terminal value using a terminal year long-term future growth rate and the discount rate; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained from these procedures.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures related to the goodwill impairment assessment of the reporting unit within the Bigo segment included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the determination of the fair value of the Company's reporting units and controls over development of the significant assumptions including the respective revenue growth rates, estimated terminal value using a terminal year long-term future growth rate and discount rates. These procedures also included, among others, testing management's process for developing the fair value estimate; evaluating the appropriateness of the income approach; testing the completeness and accuracy of underlying data used in the models; and evaluating the reasonableness of significant assumptions used by management, including the revenue growth rates, the estimated terminal value using a terminal year long-term future growth rate and the discount rates. Evaluating management's assumptions related to the revenue growth rates involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting unit, (ii) the consistency with external market and industry data, (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. The discount rate was evaluated by considering the cost of capital of comparable businesses and other industry factors. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's models and certain significant assumptions, including the discount rate.

Revenue recognition — identification of distinct performance obligations and estimate of standalone selling price

As described in Note 2(u) to the consolidated financial statements, the Company's sources of revenue include live streaming and others. The Company's consolidated revenues were US$2,619 million for the year ended December 31, 2021, of which US$2,477 million were revenues from live streaming. Management identifies multiple distinct performance obligations in certain contracts of its live streaming business. Customers receive a series of services, virtual items and virtual rights by entering into these contracts with the Company. Management determines the distinct performance obligations and the allocable portion of the transaction price for each identified distinct performance obligation and recognizes revenue upon transfer of control of the promised services in an amount that reflects the consideration the Company expects to receive in exchange for those services. Management exercises significant judgment in determining the distinct performance obligations and related allocable portions of the transaction price which is dependent on the contractual terms for each type of contract with multiple distinct performance obligations.

The principal considerations for our determination that performing procedures relating to the identification of and the determination of allocation of transaction price of performance obligations and contracts with multiple performance obligations is a critical audit matter are that there was significant judgment by management in identifying the distinct performance obligations and estimating the standalone selling price of each distinct performance obligation due to the complexity of the contracts. Certain services are provided to customers over time and have the same pattern of transfer to customers. Management exercises judgement in determining the number of distinct performance obligations by accounting for services that have the same pattern of transfer to customers as a single performance obligation. Certain distinct performance obligations are not separately sold by the Company. Management exercises judgement in determining the standalone selling price of these distinct performance obligations. This in turn led to significant auditor judgment and effort in performing procedures and in evaluating management's significant judgment in determining whether the distinct performance obligations were appropriately identified and whether the standalone selling price of each distinct performance obligation was appropriately estimated.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including identification of distinct performance obligations and estimate of standalone selling prices used to allocate transaction price to distinct performance obligations in its contracts with customers. These procedures also included, among others, on a test basis: (i) testing the completeness and accuracy of management's identification of the distinct performance obligations by evaluating customer arrangements, (ii) testing management's process for estimating standalone selling price which included testing the completeness and accuracy of input data used and evaluating the reasonableness of significant assumptions used by management, principally including market and pricing conditions and other observable inputs such as historical pricing practices and (iii) testing management's process for determining the appropriate amount of revenue recognition based on the performance obligations identified in relevant contracts.

/s/ PricewaterhouseCoopers Zhong Tian LLP
Guangzhou, the People's Republic of China

April 29, 2022

We have served as the Company's auditor since 2011.

CONSOLIDATED BALANCE SHEETS AS OF DECEMBER 31, 2020 AND 2021
(All amounts in thousands, except share, ADS, per share and per ADS data)

	As of December 31,	
	2020	2021
	US$	US$
Assets		
Current assets		
Cash and cash equivalents	1,742,749	1,837,185
Restricted cash and cash equivalents	13,733	297,022
Short-term deposits	1,325,068	1,604,198
Restricted short-term deposits	31,489	285
Short-term investments	489,101	946,543
Accounts receivable, net of allowance of US$7,387 and US$12,426 as of December 31, 2020 and 2021, respectively	142,999	114,372
Amounts due from related parties, net of allowance of US$2,281 and US$476 as of December 31, 2020 and 2021, respectively	611	56,984
Financing receivables, net of allowance of US$19,922 and US$20,317 as of December 31, 2020 and 2021, respectively	172	—
Prepayments and other current assets, net of allowance of US$5,756 and US$14,444 as of December 31, 2020 and 2021, respectively	102,872	213,733
Assets held for sale	52,528	—
Total current assets	3,901,322	5,070,322
Non-current assets		
Investments	1,239,354	1,022,455
Property and equipment, net	401,661	365,392
Land use rights, net	258,770	370,052
Intangible assets, net	344,214	312,082
Right-of-use assets, net	21,579	16,565
Goodwill	1,872,083	1,958,263
Financing receivables, net of allowance of US$10,192 and nil as of December 31, 2020 and 2021, respectively	19,716	—
Other non-current assets	10,758	4,881
Assets held for sale	25,500	—
Total non-current assets	4,193,635	4,049,690
Total assets	8,094,957	9,120,012
Liabilities, mezzanine equity and shareholders' equity		
Current liabilities (including amounts of the consolidated VIEs without recourse to the Company of US$449,414 and US$173,347 as of December 31, 2020 and 2021, respectively)		
Accounts payable	20,956	18,011
Deferred revenue	67,230	60,910
Advances from customers	775	3,426
Income taxes payable	60,895	65,738
Accrued liabilities and other current liabilities	484,450	2,345,838
Amounts due to related parties	3,822	6,931
Lease liabilities due within one year	14,332	11,041
Short-term loans	112,549	—
Liabilities held for sale	179,109	—
Total current liabilities	944,118	2,511,895

CONSOLIDATED BALANCE SHEETS AS OF DECEMBER 31, 2020 AND 2021 (CONTINUED)
(All amounts in thousands, except share, ADS, per share and per ADS data)

	As of December 31,	
	2020	2021
	US$	US$
Non-current liabilities (including amounts of the consolidated VIEs without recourse to the Company of US$18,750 and US$22,422 as of December 31, 2020 and 2021, respectively)		
Convertible bonds	779,225	924,077
Lease liabilities	8,121	5,734
Deferred revenue	3,132	6,422
Deferred tax liabilities	42,422	36,214
Other non-current liabilities	—	7,372
Liabilities held for sale	4,415	—
Total non-current liabilities	837,315	979,819
Total liabilities	1,781,433	3,491,714
Commitments and contingencies (Note 30)		
Mezzanine equity	72,617	65,833
Shareholders' equity		
Class A common shares (US$0.00001 par value; 10,000,000,000 and 10,000,000,000 shares authorized, 1,314,208,824 shares issued and 1,272,346,218 shares outstanding as of December 31, 2020; 1,317,840,464 shares issued and 1,146,336,305 shares outstanding as of December 31, 2021, respectively)	13	13
Class B common shares (US$0.00001 par value; 1,000,000,000 and 1,000,000,000 shares authorized, 326,509,555 and 326,509,555 shares issued and outstanding as of December 31, 2020 and December 31, 2021, respectively)	3	3
Treasury Shares (US$0.00001 par value; 41,862,606 and 171,504,159 shares held as of December 31, 2020 and December 31, 2021, respectively)	(139,528)	(526,724)
Additional paid-in capital	3,456,844	3,246,523
Statutory reserves	17,825	26,804
Retained earnings	2,881,782	2,712,534
Accumulated other comprehensive income	18,471	69,175
Total JOYY Inc.'s shareholders' equity	6,235,410	5,528,328
Non-controlling interests	5,497	34,137
Total shareholders' equity	6,240,907	5,562,465
Total liabilities, mezzanine equity and shareholders' equity	8,094,957	9,120,012

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in thousands, except share, ADS, per share and per ADS data)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net revenues			
Live streaming	769,148	1,815,826	2,476,790
Others	131,554	102,318	142,261
Total net revenues	900,702	1,918,144	2,619,051
Cost of revenues (1)	(656,920)	(1,378,146)	(1,781,150)
Gross profit	243,782	539,998	837,901
Operating expenses (1)			
Research and development expenses	(236,504)	(302,818)	(279,781)
Sales and marketing expenses	(404,495)	(505,389)	(468,407)
General and administrative expenses	(135,564)	(146,666)	(221,731)
Total operating expenses	(776,563)	(954,873)	(969,919)
Gain on disposal of business	11,754	—	4,959
Other income	5,674	8,095	20,376
Operating loss	(515,353)	(406,780)	(106,683)
Interest expense	(38,114)	(75,555)	(14,475)
Interest income and investment income	61,747	89,078	91,233
Foreign currency exchange gains (losses), net	1,295	(17,472)	(13,377)
Gain (loss) on disposal and deemed disposal of investments	—	272,281	(23,762)
Gain (loss) on fair value changes of investments	397,960	160,849	(15,435)
(Loss) gain on extinguishment of debt and derivative	(2,277)	(6,277)	5,291
Other non-operating expenses	—	(2,467)	(381)
(Loss) income before income tax expenses	(94,742)	13,657	(77,589)
Income tax benefit (expenses)	20,098	(27,825)	(25,745)
Loss before share of income (loss) in equity method investments, net of income taxes	(74,644)	(14,168)	(103,334)
Share of income (loss) in equity method investments, net of income taxes	5,974	(7,634)	(26,217)
Net loss from continuing operations	(68,670)	(21,802)	(129,551)
Net income from discontinued operations	615,268	1,401,670	35,567
Net income (loss)	546,598	1,379,868	(93,984)
Net (loss) income attributable to the non-controlling interest shareholders and the mezzanine equity classified non-controlling interest shareholders	(36,786)	(6,971)	13,691
Net income (loss) attributable to controlling interest of JOYY Inc.	509,812	1,372,897	(80,293)
Including:			
Net loss from continuing operations attributable to controlling interest of JOYY Inc.	(64,780)	(18,741)	(115,860)
Net income from discontinued operations attributable to controlling interest of JOYY Inc.	574,592	1,391,638	35,567
Accretion of subsidiaries' redeemable convertible preferred shares to redemption value	(5,564)	(5,564)	(5,236)
Cumulative dividend on subsidiary's Series A Preferred Shares	(4,000)	(4,000)	(4,000)
Net income (loss) attributable to common shareholders of JOYY Inc.	500,248	1,363,333	(89,529)
Including:			
Net loss from continuing operations attributable to common shareholders of JOYY Inc.	(74,344)	(28,305)	(125,096)
Net income from discontinued operations attributable to common shareholders of JOYY Inc.	574,592	1,391,638	35,567
Other comprehensive (loss) income:			
Foreign currency translation adjustments, net of nil tax	(31,105)	215,363	58,887
Comprehensive income (loss) attributable to the common shareholders of JOYY Inc.	469,143	1,578,696	(30,642)

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021 (CONTINUED)
(All amounts in thousands, except share, ADS, per share and per ADS data)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net income (loss) per ADS*			
—Basic	6.48	17.04	(1.14)
Continuing operations	(0.96)	(0.35)	(1.60)
Discontinued operations	7.44	17.39	0.46
—Diluted	6.45	17.04	(1.14)
Continuing operations	(0.96)	(0.35)	(1.60)
Discontinued operations	7.41	17.39	0.46
Weighted average number of ADS used in calculating net income (loss) per ADS			
—Basic			
Continuing operations	77,219,846	80,009,988	78,100,800
Discontinued operations	77,219,846	80,009,988	78,100,800
—Diluted			
Continuing operations	77,219,846	80,009,988	78,100,800
Discontinued operations	77,219,846	80,009,988	78,100,800
Net income (loss) per common share*			
—Basic	0.32	0.85	(0.06)
Continuing operations	(0.05)	(0.02)	(0.08)
Discontinued operations	0.37	0.87	0.02
—Diluted	0.32	0.85	(0.06)
Continuing operations	(0.05)	(0.02)	(0.08)
Discontinued operations	0.37	0.87	0.02
Weighted average number of common shares used in calculating net income (loss) per common share			
—Basic			
Continuing operations	1,544,396,920	1,600,199,759	1,562,016,001
Discontinued operations	1,544,396,920	1,600,199,759	1,562,016,001
—Diluted			
Continuing operations	1,544,396,920	1,600,199,759	1,562,016,001
Discontinued operations	1,544,396,920	1,600,199,759	1,562,016,001

* Each ADS represents 20 common shares.

(1) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Cost of revenues	5,932	5,797	8,089
Research and development expenses	52,611	42,646	24,053
Sales and marketing expenses	724	1,311	1,285
General and administrative expenses	17,089	42,406	(45)

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in thousands, except share, ADS, per share and per ADS data)

	Class A common shares		Class B common shares		Treasury shares	Additional			Accumulated other	Total JOYY Inc.'s		Total
	Number of shares	Amount	Number of shares	Amount	Amount	paid-in capital	Statutory reserves	Retained earnings	comprehensive income (loss)	shareholders' equity	Non-controlling interests	shareholders' equity
		US$		US$	US$	US$	US$	US$	US$	US$	US$	US$
Balance as of December 31, 2018	981,740,848	10	288,182,976	3	—	1,727,066	16,026	1,077,073	(121,686)	2,698,492	416,255	3,114,747
Issuance of common shares for vested restricted shares and restricted share units	6,216,060	—	—	—	—	—	—	—	—	—	—	—
Issuance of common shares in connection with the acquisition of Bigo	305,127,046	3	38,326,579	—	—	1,149,073	—	—	—	1,149,076	—	1,149,076
Grant of restricted shares	8,761,450	—	—	—	—	—	—	—	—	—	—	—
Share-based compensation	—	—	—	—	—	118,637	—	—	—	118,637	18,730	137,367
Appropriation to statutory reserves	—	—	—	—	—	—	6,856	(6,856)	—	—	—	—
Bifurcation of conversion feature of convertible bonds	—	—	—	—	—	294,143	—	—	—	294,143	—	294,143
Purchase of capped call options in relation to the conversion features of the convertible bonds	—	—	—	—	—	(77,000)	—	—	—	(77,000)	—	(77,000)
Huya's follow-on public offering, net of issuance cost	—	—	—	—	—	43,080	—	—	(1,456)	41,624	268,196	309,820
Issuance of Huya's common shares for exercised share options	—	—	—	—	—	(2,729)	—	—	(207)	(2,936)	7,628	4,692
Exercise/settlement of RSU's in subsidiaries	—	—	—	—	—	(1,101)	—	—	—	(1,101)	509	(592)
Repurchase of common shares	(8,682,900)	—	—	—	(23,712)	(11,726)	—	—	—	(35,438)	—	(35,438)
Deemed contribution from non-controlling interest shareholders	—	—	—	—	—	903	—	—	—	903	(903)	—
Partial disposal of Huya's interests to non-controlling interest shareholders, net of tax	—	—	—	—	—	81,208	—	—	(938)	80,270	19,666	99,936
Net income attributable to JOYY Inc. and non-controlling interest shareholders	—	—	—	—	—	—	—	509,812	—	509,812	36,786	546,598
Accretion of subsidiaries' redeemable convertible preferred shares to redemption value	—	—	—	—	—	—	—	(5,564)	—	(5,564)	(244)	(5,808)
Foreign currency translation adjustments, net of nil tax	—	—	—	—	—	—	—	—	(31,105)	(31,105)	540	(30,565)
Balance as of December 31, 2019	1,293,162,504	13	326,509,555	3	(23,712)	3,321,554	22,882	1,574,465	(155,392)	4,739,813	767,163	5,506,976

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021 (CONTINUED)

(All amounts in thousands, except share, ADS, per share and per ADS data)

	Class A common shares		Class B common shares		Treasury shares	Additional paid-in capital	Statutory reserves	Retained earnings	Accumulated other comprehensive income (loss)	Total JOYY Inc.'s shareholders' equity	Non-controlling interests	Total shareholders equity
	Number of shares	Amount	Number of shares	Amount	Amount							
		US$		US$	US$	US$	US$	US$	US$	US$	US$	US$
Balance as of December 31, 2019	1,293,162,504	13	326,509,555	3	(23,712)	3,321,554	22,882	1,574,465	(155,392)	4,739,813	767,163	5,506,976
Adoption of ASC326	—	—	—	—	—	—	—	(1,469)	—	(1,469)	(269)	(1,738
Issuance of common shares for vested restricted shares and restricted share units	12,363,420	—	—	—	—	—	—	—	—	—	—	—
Net forfeiture of restricted shares	(13,886)	—	—	—	—	—	—	—	—	—	—	—
Share-based compensation	—	—	—	—	—	111,204	—	—	—	111,204	13,154	124,358
Appropriation to statutory reserves	—	—	—	—	—	—	4,445	(4,445)	—	—	—	—
Capital injection in subsidiaries from non-controlling interest shareholders	—	—	—	—	—	—	—	—	—	—	1,500	1,500
Issuance of Huya's common shares for exercised share options	—	—	—	—	—	(36)	—	—	(5)	(41)	129	88
Repurchase of common shares	(33,165,820)	—	—	—	(115,816)	12,231	—	—	—	(103,585)	—	(103,585
Repurchase of non-controlling interest and redeemable non-controlling interests	—	—	—	—	—	1,242	—	—	—	1,242	(3,255)	(2,013
Non-controlling interest arising from an acquisition	—	—	—	—	—	—	—	—	—	—	5,058	5,058
Deconsolidation of Huya	—	—	—	—	—	—	(9,502)	9,502	(34,707)	(34,707)	(781,591)	(816,298
Other equity changes from equity method investments	—	—	—	—	—	10,563	—	3,417	(6,788)	7,192	—	7,192
Dividends declared	—	—	—	—	—	—	—	(67,021)	—	(67,021)	(333)	(67,354
Deemed contribution from non-controlling interest shareholders	—	—	—	—	—	86	—	—	—	86	(86)	—
Net income attributable to JOYY Inc. and non-controlling interest shareholders	—	—	—	—	—	—	—	1,372,897	—	1,372,897	6,971	1,379,868
Accretion of subsidiaries' redeemable convertible preferred shares to redemption value	—	—	—	—	—	—	—	(5,564)	—	(5,564)	(244)	(5,808
Foreign currency translation adjustments, net of nil tax	—	—	—	—	—	—	—	—	215,363	215,363	(2,700)	212,663
Balance as of December 31, 2020	1,272,346,218	13	326,509,555	3	(139,528)	3,456,844	17,825	2,881,782	18,471	6,235,410	5,497	6,240,907

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021 (CONTINUED)

(All amounts in thousands, except share, ADS, per share and per ADS data)

	Class A common shares		Class B common shares		Treasury shares	Additional paid-in capital	Statutory reserves	Retained earnings	Accumulated other comprehensive income (loss)	Total JOYY Inc.'s shareholders' equity	Non-controlling interests	Total shareholders' equity
	Number of shares	Amount	Number of shares	Amount	Amount							
		US$		US$	US$	US$	US$	US$	US$	US$	US$	US$
Balance as of December 31, 2020	1,272,346,218	13	326,509,555	3	(139,528)	3,456,844	17,825	2,881,782	18,471	6,235,410	5,497	6,240,907
Adoption of ASU 2020-06	—	—	—	—	—	(299,398)	—	86,659	—	(212,739)	—	(212,739)
Issuance of common shares for vested restricted shares and restricted share units	3,631,640	—	—	—	—	—	—	—	—	—	—	—
Transfer from treasury shares to issued common shares for vested restricted share units	1,442,020	—	—	—	5,788	(5,788)	—	—	—	—	—	—
Acquisition of subsidiaries	—	—	—	—	—	53,327	—	—	—	53,327	26,731	80,058
Net forfeiture of restricted shares	(773,813)	—	—	—	—	—	—	—	—	—	—	—
Share-based compensation	—	—	—	—	—	31,691	—	—	—	31,691	—	31,691
Appropriation to statutory reserves	—	—	—	—	—	—	8,979	(8,979)	—	—	—	—
Capital injection in subsidiaries from non-controlling interest shareholders	—	—	—	—	—	(3,357)	—	—	—	(3,357)	9,313	5,956
Other equity changes from equity method investments	—	—	—	—	—	13,267	—	(1)	(8,183)	5,083	—	5,083
Repurchase of common shares	(130,309,760)	—	—	—	(392,984)	—	—	—	—	(392,984)	—	(392,984)
Repurchase of non-controlling interest and redeemable non-controlling interests	—	—	—	—	—	(63)	—	—	—	(63)	(154)	(217)
Deconsolidation of subsidiaries	—	—	—	—	—	—	—	—	—	—	7,148	7,148
Dividends declared	—	—	—	—	—	—	—	(161,398)	—	(161,398)	(47)	(161,445)
Net income attributable to JOYY Inc. and non-controlling interest shareholders	—	—	—	—	—	—	—	(80,293)	—	(80,293)	(13,691)	(93,984)
Accretion of subsidiaries' redeemable convertible preferred shares to redemption value	—	—	—	—	—	—	—	(5,236)	—	(5,236)	(102)	(5,338)
Foreign currency translation adjustments, net of nil tax	—	—	—	—	—	—	—	—	58,887	58,887	(558)	58,329
Balance as of December 31, 2021	1,146,336,305	13	326,509,555	3	(526,724)	3,246,523	26,804	2,712,534	69,175	5,528,328	34,137	5,562,465

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in thousands)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Cash flows from operating activities			
Net income (loss)	546,598	1,379,868	(93,984)
Net income from discontinued operations	(615,268)	(1,401,670)	(35,567)
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation of property and equipment	40,022	77,464	108,686
Amortization of acquired intangible assets and land use rights	101,491	109,422	67,233
Amortization of right-of-use assets	11,353	16,492	7,009
Expected credit loss of receivables	24,605	9,392	5,206
Loss on disposal of property and equipment, intangible assets and other long-term assets	169	2,776	366
Impairment of investments	8,870	6,186	93,632
Impairment of property and equipment	760	—	—
Impairment of intangible assets	435	—	—
Share-based compensation	76,356	92,160	33,382
Share of (income) loss in equity method investments, net of income taxes	(5,974)	7,634	26,217
(Gain) loss on disposal and deemed disposal of investments	—	(272,281)	23,762
Gain on disposal of business	(11,754)	—	(4,959)
Cash dividend received from equity investees	—	347	6,953
Deferred income taxes, net	(19,719)	12,616	(9,805)
Foreign currency exchange (gains) losses, net	(1,295)	17,472	13,377
Interest expense	30,658	64,520	9,158
Investment (income) loss	(4,167)	2,785	(3,630)
(Gain) loss on fair value changes of investments	(397,960)	(160,849)	15,435
Loss (gain) on extinguishment of debt and derivative	2,277	6,277	(5,291)
Changes in operating assets and liabilities, net of business acquisition and disposal of subsidiaries			
Accounts receivable	(16,491)	(55,753)	28,064
Interest receivables recorded in financing receivables	(1,991)	(368)	23
Prepayments and other assets	(23,692)	(32,827)	(8,082)
Amounts due from related parties	(33,044)	(2,233)	(20,702)
Lease liabilities	(11,283)	(15,085)	(7,930)
Amounts due to related parties	3,297	4,379	2,761
Accounts payable	(3,830)	(11,768)	(18,516)
Deferred revenue	(1,053)	38,994	(3,150)
Advances from customers	383	(1,352)	2,623
Income taxes payable	8,885	(3,431)	3,388
Accrued liabilities and other current liabilities	113,777	106,116	(89,532)
Net cash (used in) provided by continuing operating activities	(177,585)	(2,717)	146,127
Net cash provided by discontinued operating activities	843,713	497,863	64,289
Net cash provided by operating activities	666,128	495,146	210,416
Cash flows from investing activities			
Placements of short-term deposits	(1,609,116)	(1,193,968)	(1,707,825)
Maturities of short-term deposits	641,125	1,358,884	1,483,449
Placements of short-term investments	(700,937)	(909,531)	(1,970,387)
Maturities of short-term investments	319,973	926,590	1,507,304
Placements of derivative financial instruments	(1,572)	—	(4,211)
Purchase of property and equipment	(123,925)	(150,970)	(70,820)
Purchase of intangible assets and land use right	(6,919)	(1,974)	(114,057)
Purchase of other non-current assets	(19,159)	(9)	(1,600)
Prepayments for investments	(76)	—	—
Cash paid for investments	(79,645)	(206,559)	(89,681)
Cash received from disposal of investments	23,735	826,750	156,479
Cash distribution received from equity investees	—	11,652	—
Acquisition of businesses, net of cash, cash equivalents and restricted cash acquired	(240,470)	(4,673)	7,049
Deconsolidation and disposal of a subsidiary, net of cash disposed	—	96	—
Repayments from (payments on behalf of) related parties, net	1,780	(333)	(4,537)
Loans to related parties	(24,675)	(723)	(34,203)
Repayments of loans from related parties	—	—	449
Loans to employees and third parties	(6,999)	(8,135)	(9,526)
Repayments of loans from employees and third parties	20,707	28,938	1,776
Payments to originate financing receivables	(113,128)	—	—
Principal collection from financing receivables	216,141	13,307	240
Proceeds from disposal of property and equipment	305	828	3,244
Net cash (used in) provided by continuing investing activities	(1,702,855)	690,170	(846,857)
Net cash (used in) provided by discontinued investing activities	(562,834)	92,371	1,636,450
Net cash (used in) provided by investing activities	(2,265,689)	782,541	789,593

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021 (CONTINUED)
(All amounts in thousands)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Cash flows from financing activities			
Capital contributions from the non-controlling interest shareholders	—	1,526	5,508
Capital contributions from mezzanine equity holders	14,592	—	—
Dividends paid to shareholders	—	(64,558)	(160,143)
Dividend paid to non-controlling interests in a subsidiary	—	(326)	(47)
Purchase of non-controlling interests and redeemable non-controlling interests	—	(2,615)	(216)
Partial disposal of Huya's interests to non-controlling interest shareholders	108,569	—	—
Purchase of capped call option in relation to repurchase of common shares	(12,051)	12,264	—
Proceeds from bank borrowings	225,040	155,708	39,676
Repayment of bank borrowings	(147,248)	(132,850)	(147,618)
Repurchase of common shares	(24,395)	(106,024)	(398,637)
Proceeds from issuance of convertible bonds, net of issuance costs	901,287	—	—
Repayment of convertible bonds	(977)	—	—
Cash paid on extinguishment of convertible bonds	—	—	(62,059)
Deemed contribution from Huya	1,469	141	—
Net cash provided by (used in) continuing financing activities	1,066,286	(136,734)	(723,536)
Net cash provided by discontinued financing activities	308,219	1,232	—
Net cash provided by (used in) financing activities	1,374,505	(135,502)	(723,536)
Net (decrease) increase in cash, cash equivalents and restricted cash	(225,056)	1,142,185	276,473
Cash, cash equivalents and restricted cash at the beginning of the year	874,844	652,427	1,819,571
Effect of exchange rate changes on cash, cash equivalents and restricted cash	2,639	24,959	38,448
Cash, cash equivalents and restricted cash at the end of the year	652,427	1,819,571	2,134,492
Less: Cash, cash equivalents and restricted cash of held for sales at the end of the year	169,764	31,600	—
Cash, cash equivalents and restricted cash of continuing operations at the end of the year	482,663	1,787,971	2,134,492

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Supplemental disclosure of cash flows information of continuing operation:			
—Cash paid for interest, net of amounts capitalized	(7,762)	(14,324)	(15,485)
—Income taxes paid	(71,510)	(67,796)	(29,929)
Supplemental disclosures of non-cash investing and financing activities of continuing operation:			
—Acquisition of property and equipment	16,811	15,946	10,407
—Disposal of investments and business	53,251	—	819
—Common shares issued for the acquisition of Bigo	1,149,076	—	—

The accompanying notes are an integral part of these consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities

(a) Organization and principal activities

JOYY Inc. (the "Company" or "JOYY"), together with its subsidiaries, its VIEs (also referred to as VIEs and their subsidiaries as a whole, where appropriate) (collectively, the "Group"), is a leading global social media platform, offering users around the world a uniquely engaging and immersive experience across various video-based products and services, such as live streaming, short-form videos and video communication.

In March 2019, the Company completed the acquisition of Bigo Inc ("Bigo"). Bigo is primarily engaged in the video and audio broadcast business all over the world. The Company paid United States dollar ("US$") 343.1 million in cash and issued 305,127,046 Class A common shares and 38,326,579 Class B common shares of the Company to Bigo's selling shareholders. The details of this acquisition are disclosed in Note 5(a).

On April 3, 2020, the Company signed an agreement with Linen Investment Limited, a wholly owned subsidiary of Tencent Holdings Limited ("Tencent") to sell its 16,523,819 Class B ordinary shares of HUYA Inc. (NYSE: HUYA) ("Huya"), a subsidiary of the Group, for a cash consideration of approximately US$262.6 million, pursuant to Tencent's exercise of its option to purchase additional shares of Huya. Upon the closing of the share transfer, the Group held 68,374,463 Class B ordinary shares of Huya, representing approximately 31.2% equity interest and 43.0% of the total voting power calculated based on the total issued and outstanding shares of Huya after this transaction. As a result, Huya ceased to be a subsidiary of the Group and the Group accounted for the investment in Huya using the equity method. The details of this disposal are disclosed in Note 3(b).

On August 10, 2020, the Company entered into a definitive share transfer agreement with Linen Investment Limited to sell its 30,000,000 Class B ordinary shares of Huya for a cash consideration of approximately US$810.0 million. Upon the closing of such share transfer, the Company held 38,374,463 Class B ordinary shares of Huya, representing approximately 17.5% equity interest and 24.1% of the total voting power calculated based on the total issued and outstanding shares of Huya after this transaction.

On November 16, 2020, the Company entered into definitive agreements with Baidu, Inc. (Nasdaq: BIDU) ("Baidu"). Pursuant to the agreements, Baidu would acquire JOYY's domestic video-based entertainment live streaming business ("YY Live"), which includes YY mobile app, YY.com website and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. Out of the total cash consideration of US$3.6 billion, consideration of US$300 million is subject to adjustment based on the achievement of certain conditions of YY Live. Subsequently, the sale was substantially completed on February 8, 2021, with certain customary matters, including necessary regulatory approvals with respect to this transaction from government authorities, remaining to be completed in the future. The details of this disposal are disclosed in Note 3(a).

Starting from January 1, 2021, the Company changed its reporting currency from RMB to US$ since a majority of Company's revenues and expenses are now denominated in U.S. dollar after the disposal of YY Live business. The alignment of the reporting currency with the underlying operations better illustrates the Company's results of operations for each period. The Company has applied the change of reporting currency retrospectively to its financial statements as presented as well as the notes thereto..

(b) Initial Public Offering

The Company completed its initial public offering ("IPO") on November 21, 2012 on the "NASDAQ Global Market".

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(c) Principal subsidiaries and VIEs

The details of the principal subsidiaries and VIEs through which the Company conducts its business operations as of December 31, 2021 are set out below:

Name	Place of incorporation	Date of incorporation or acquisition	% of direct or indirect economic ownership	Principal activities
Principal subsidiaries				
Duowan Entertainment Corporation (“Duowan BVI”)	British Virgin Islands (“BVI”)	November 6, 2007	100 %	Investment holding
Huanju Shidai Technology (Beijing) Co., Ltd. (“Beijing Huanju Shidai”)	PRC	March 19, 2008	100 %	Investment holding
Guangzhou Huanju Shidai Information Technology Co., Ltd. (“Guangzhou Huanju Shidai”)	PRC	December 2, 2010	100 %	Software development
Hago Singapore Pte. Ltd. (“Hago Singapore”)	Singapore	May 7, 2018	100 %	Internet value added services
Bigo	Cayman Islands	March 4, 2019	100 %	Investment holding
Bigo Technology Pte. Ltd. (“Bigo Singapore”)	Singapore	March 4, 2019	100 %	Investment holding, operation of live streaming platform
Bigo (Hong Kong) Limited (“Bigo HK”)	Hong Kong	March 4, 2019	100 %	Investment holding
Guangzhou BaiGuoYuan Information Technology Co., Ltd. (“BaiGuoYuan Technology”)	PRC	March 4, 2019	100 %	Software development and provision of information technology services
Principal VIEs				
Guangzhou Huaduo Network Technology Co., Ltd. (“Guangzhou Huaduo”)	PRC	April 11, 2005		Holder of internet content provider licenses and internet value added services
Guangzhou BaiGuoYuan Network Technology Co., Ltd. (“Guangzhou BaiGuoYuan”)	PRC	March 4, 2019		Holder of internet content provider licenses and internet value added services

(d) Variable Interest Entities

To comply with PRC laws and regulations that prohibit or restrict foreign ownership of companies that provide internet-content, the Group conducts its operations primarily through its principal VIEs, Guangzhou Huaduo and Guangzhou BaiGuoYuan, which hold the internet value-added service license and approvals to provide such internet services in the PRC. The Company, via its subsidiaries Beijing Huanju Shidai and BaiGuo Yuan Technology, controlled Guangzhou Huaduo and Guangzhou BaiGuo Yuan, respectively, through the exercise of contractual agreements discussed below.

Before the disposal of Huya in April 2020, the Group also conducted its operations through its principal VIE, Guangzhou Huya Information Technology Co., Ltd. (“Guangzhou Huya”), which holds the internet value-added service license and approvals to provide such internet services in the PRC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(d) Variable Interest Entities (continued)

(i) VIE agreements amongst Beijing Huanju Shidai, Guangzhou Huaduo and its nominee shareholders

The following is a summary of the contractual arrangements entered among Beijing Huanju Shidai, Guangzhou Huaduo and its nominee shareholders:

- Exclusive Technology Support and Technology Services Agreement

Under the exclusive technology support and technology services agreement between Beijing Huanju Shidai and Guangzhou Huaduo, Beijing Huanju Shidai has the exclusive right to provide to Guangzhou Huaduo technology support and technology services related to all technologies needed for its business. Beijing Huanju Shidai owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Guangzhou Huaduo to Beijing Huanju Shidai is determined by various factors, including the expenses Beijing Huanju Shidai incurs for providing such services and Guangzhou Huaduo's revenues, and the amount of service fee is ultimately (unilaterally) determined by Beijing Huanju Shidai. The term of this agreement will expire in 2028 and may be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai is entitled to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huaduo.

- Exclusive Business Cooperation Agreement

Under the exclusive business cooperation agreement between Beijing Huanju Shidai and Guangzhou Huaduo, Beijing Huanju Shidai has the exclusive right to provide to Guangzhou Huaduo technology support, business support and consulting services related to the services provided by Guangzhou Huaduo, the scope of which is to be determined by Beijing Huanju Shidai from time to time. Beijing Huanju Shidai owns the exclusive intellectual property rights created as a result of the performance of this agreement. The service fee payable by Guangzhou Huaduo to Beijing Huanju Shidai is a certain percentage of its earnings. The term of this agreement will expire in 2038 and may be extended with Beijing Huanju Shidai's written confirmation prior to the expiration date. Beijing Huanju Shidai is entitled to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huaduo.

- Exclusive Option Agreement

The parties to the exclusive option agreement are Beijing Huanju Shidai, Guangzhou Huaduo and each of the shareholders of Guangzhou Huaduo. Under the exclusive option agreement, each of the shareholders of Guangzhou Huaduo irrevocably granted Beijing Huanju Shidai or its designated representative(s) an exclusive option to purchase, to the extent permitted under PRC law, all or part of his or its equity interests in Guangzhou Huaduo. Beijing Huanju Shidai or its designated representative(s) have sole discretion as to when to exercise such options, either in part or in full. Without Beijing Huanju Shidai's prior written consent, Guangzhou Huaduo's shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Guangzhou Huaduo. The term of this agreement is ten years and may be extended at Beijing Huanju Shidai's sole discretion.

- Powers of Attorney

Pursuant to the irrevocable power of attorney executed by each shareholder of Guangzhou Huaduo, each such shareholder appointed Beijing Huanju Shidai as its attorney-in-fact to exercise such shareholders' rights in Guangzhou Huaduo, including, without limitation, the power to vote on its behalf on all matters of Guangzhou Huaduo requiring shareholder approval under PRC laws and regulations and the articles of association of Guangzhou Huaduo. Each power of attorney will remain in force until the shareholder ceases to hold any equity interest in Guangzhou Huaduo.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(d) Variable Interest Entities (continued)

(i) VIE agreements amongst Beijing Huanju Shidai, Guangzhou Huaduo and its nominee shareholders (continued)

- Share Pledge Agreement

Pursuant to the share pledge agreement between Beijing Huanju Shidai and the shareholders of Guangzhou Huaduo, the shareholders of Guangzhou Huaduo have pledged all of their equity interests in Guangzhou Huaduo to Beijing Huanju Shidai to guarantee the performance by Guangzhou Huaduo and its shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive option agreement, exclusive technology support and technology services agreement and powers of attorney. If Guangzhou Huaduo and/or its shareholders breach their contractual obligations under those agreements, Beijing Huanju Shidai, as pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests.

(ii) VIE agreements amongst BaiGuoYuan Technology, Guangzhou BaiGuoYuan and its nominee shareholders

The following is a summary of the contractual arrangements entered among BaiGuoYuan Technology, Guangzhou BaiGuoYuan and its nominee shareholders.

- Exclusive Business Cooperation Agreement

Under the exclusive business cooperation agreement between BaiGuoYuan Technology and Guangzhou BaiGuoYuan, BaiGuoYuan Technology has the exclusive right to provide Guangzhou BaiGuoYuan technology support, business support and consulting services related to the services provided by Guangzhou BaiGuoYuan, the scope and service fees of which is to be determined by BaiGuoYuan Technology from time to time. BaiGuoYuan Technology owns the exclusive intellectual property rights created as a result of the performance of this agreement. BaiGuoYuan Technology receives substantially all of the economic interest returns generated by Guangzhou BaiGuoYuan. The term of this agreement will not expire unless with BaiGuoYuan Technology's written confirmation to terminate the agreement.

- Exclusive Option Agreement

The parties to the exclusive option agreement are BaiGuoYuan Technology, Guangzhou BaiGuoYuan and each of the shareholders of Guangzhou BaiGuoYuan. Under the exclusive option agreement, each of the shareholders of Guangzhou BaiGuoYuan irrevocably granted BaiGuoYuan Technology or its designated representative(s) an exclusive option to purchase, to the extent permitted under the PRC laws, all or part of his or its equity interests in Guangzhou BaiGuoYuan. BaiGuoYuan Technology or its designated representative(s) have sole discretion as to when to exercise such options, either in part or in full. Without BaiGuoYuan Technology's prior written consent, Guangzhou BaiGuoYuan's shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Guangzhou BaiGuoYuan. The term of this agreement is ten years and may be extended at BaiGuoYuan Technology's sole discretion.

- Powers of Attorney

Pursuant to the irrevocable power of attorney executed by each shareholder of Guangzhou BaiGuoYuan, each such shareholder appointed BaiGuoYuan Technology as its attorney-in-fact to exercise such shareholders' rights in Guangzhou BaiGuoYuan, including, without limitation, the power to vote on its behalf on all matters of Guangzhou BaiGuoYuan requiring shareholders' approval under the PRC laws and regulations and the articles of association of Guangzhou BaiGuoYuan. Each power of attorney will remain in force until the shareholder ceases to hold any equity interest in Guangzhou BaiGuoYuan.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(d) Variable Interest Entities (continued)

(ii) VIE agreements amongst BaiGuoYuan Technology, Guangzhou BaiGuoYuan and its nominee shareholders (continued)

- Share Pledge Agreement

Pursuant to the share pledge agreement between BaiGuoYuan Technology and the shareholders of Guangzhou BaiGuoYuan, the shareholders of Guangzhou BaiGuoYuan have pledged all of their equity interests in Guangzhou BaiGuoYuan to BaiGuoYuan Technology to guarantee the performance by Guangzhou BaiGuoYuan and its shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive option agreement and powers of attorney. If Guangzhou BaiGuoYuan and/or its shareholders breach their contractual obligations under those agreements, BaiGuoYuan Technology, as pledgee, will be entitled to voting right and the right to sell the pledged equity interests.

Through the aforementioned contractual agreements, Guangzhou Huaduo, Guangzhou BaiGuoYuan and Guangzhou Huya are considered VIEs in accordance with Generally Accepted Accounting Principles in the United States ("U.S. GAAP") because the Company, through Beijing Huanju Shidai, BaiGuoYuan Technology and Huya Technology, respectively, has the ability to:

- exercise effective control over Guangzhou Huaduo, Guangzhou BaiGuoYuan and Guangzhou Huya;
- receive substantially all of the economic benefits and residual returns, and absorb substantially all the risks and expected losses from these VIEs as if it were their sole shareholder; and
- have an exclusive option to purchase all of the equity interests in these VIEs.

(iii) VIE agreements amongst Huya Technology (defined as below), Guangzhou Huya and its nominee shareholders

In 2017, Huya undertook a reorganization (the "Huya Reorganization") through setting up Guangzhou Huya Technology Co., Ltd. ("Huya Technology"), a wholly owned subsidiary, and entering into a series of VIE agreements with Guangzhou Huya and its nominee shareholders. The Huya Reorganization was completed on July 10, 2017.

The following is a summary of the contractual arrangements entered among Huya Technology, Guangzhou Huya and its nominee shareholders:

- Exclusive Business Cooperation Agreement

Huya Technology and Guangzhou Huya entered into exclusive business cooperation agreement under which Guangzhou Huya engages Huya Technology as its exclusive provider of technology support, business support and consulting services. Guangzhou Huya shall pay to Huya Technology service fees, which is determined by Huya Technology at its sole discretion. Huya Technology shall have exclusive and proprietary rights and interests in all rights, ownership, interests and intellectual properties arising from the performance of the agreement. During the term of the agreement, Guangzhou Huya shall not accept any consultations and/or services provided by any third party and shall not cooperate with any third party for the provision of identical or similar services without prior consent of Huya Technology. The term of this agreement is ten years and will be extended for ten years automatically after expiration, unless otherwise agreed by both parties in a written agreement. Huya Technology is entitled to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huya.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(d) Variable Interest Entities (continued)

(iii) VIE agreements amongst Huya Technology, Guangzhou Huya and its nominee shareholders (continued)

- Exclusive Purchase Option Agreement

Under the exclusive purchase option agreement, the nominee shareholders of Guangzhou Huya have granted Huya Technology or its designated representative(s) irrevocably an exclusive option to purchase, to the extent permitted under PRC law, all or part of their equity interests in Guangzhou Huya at the lowest price permitted by the laws of the PRC applicable at the time of exercise. Huya Technology or its designated representative(s) have sole discretion as to when to exercise such options, either in part or in full. Without Huya Technology's prior written consent, the nominee shareholders shall not sell, transfer, mortgage or otherwise dispose their equity interests in Guangzhou Huya. The term of this agreement is ten years and may be extended for another ten years at Huya Technology's sole discretion. Huya Technology is entitled to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huya.

- Equity Pledge Agreement

Pursuant to the equity pledge agreement, the nominee shareholders of Guangzhou Huya have pledged all of their equity interests in Guangzhou Huya to Huya Technology to guarantee the performance by Guangzhou Huya and its nominee shareholders' performance of their respective obligations under the exclusive business cooperation agreement, exclusive purchase option agreement, and powers of attorney. The nominee shareholders shall not transfer or assign the equity interests, the rights and obligations in the equity pledge agreement or create or permit to create any pledges which may have an adverse effect on the rights or benefits of Huya Technology without Huya Technology's written consent. If Guangzhou Huya and/or its nominee shareholders breach their contractual obligations under those agreements, Huya Technology, as pledgee, will be entitled to sell the pledged equity interests.

- Power of Attorney

Pursuant to the irrevocable power of attorney, Huya Technology is authorized by each of the nominee shareholders as its attorney-in-fact to exercise such nominee shareholders' rights in Guangzhou Huya, including, without limitation, the power to vote on its behalf on all matters of Guangzhou Huya requiring nominee shareholder approval under PRC laws and regulations and the articles of association of Guangzhou Huya and rights to information relating to all business aspects of Guangzhou Huya. The term of this agreement is ten years and will be automatically extended for one more year indefinitely. Huya Technology has sole discretion to terminate the agreement at any time by providing 30 days' prior written notice to Guangzhou Huya.

In addition to the aforementioned contractual agreements, Beijing Huanju Shidai also entered into similar contractual agreements with Beijing Tuda Science and Technology Co., Ltd. ("Beijing Tuda"). Guangzhou Huanju Shidai also entered into similar contractual agreements with Guangzhou Xuancheng Network Technology Co., Ltd. ("Guangzhou Xuancheng"), Guangzhou Yueyi Network Technology Partnership (LP) ("Guangzhou Yueyi"), Guangzhou Xuanyi Network Technology Partnership (LP) ("Guangzhou Xuanyi") and Guangzhou Ruicheng Network Technology Co., Ltd. ("Guangzhou Ruicheng"). Guangzhou Wangxing Information Technology Co., Ltd. ("Guangzhou Wangxing") also entered into similar contractual agreements with Chengdu Yunbu Network Technology Co., Ltd. ("Chengdu Yunbu"), Chengdu Luota Network Technology Co., Ltd. ("Chengdu Luota") and Chengdu Jiyue Network Technology Co., Ltd. ("Chengdu Jiyue"). BaiGuoYuan Technology also entered into similar contractual agreements with Guangzhou Shangying Network Technology Co., Ltd. ("Guangzhou Shangying"), Guangzhou Fangu Network Technology Partnership (LP) ("Guangzhou Fangu"), Guangzhou Wanyin Network Technology Partnership (LP) ("Guangzhou Wanyin") and Guangzhou Qianxuan Network Technology Co., Ltd. ("Guangzhou Qianxuan"). Through these contractual agreements, Beijing Tuda, Guangzhou Xuancheng, Guangzhou Yueyi, Guangzhou Xuanyi, Guangzhou Ruicheng, Chengdu Yunbu, Chengdu Luota, Chengdu Jiyue, Guangzhou Shangying, Guangzhou Fangu, Guangzhou Wanyin and Guangzhou Qianxuan are considered VIEs of the Group. The VIEs disclosed in this paragraph are not material and do not have any significant impact on the Company's results and financial position.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

1. Organization and principal activities (continued)

(d) Variable Interest Entities (continued)

In accordance with the aforementioned agreements, the Company has power to direct activities of the VIEs, and can have assets transferred out of the VIEs. Therefore the Company considers that there is no asset in the VIEs that can be used only to settle obligations of the VIEs, except for registered capital and PRC statutory reserves of the VIEs amounting to US$1,088,061 as of December 31, 2021. The VIEs were incorporated as limited liability companies under the PRC Company Law and in accordance with the PRC Company Law, the creditors do not have recourse to the general credit of the Company for all the liabilities of the VIEs as the Company does not have direct legal ownership over the VIEs.

Currently there is no contractual arrangement that could require the Company to provide additional financial support to the VIEs. As the Company is conducting its PRC internet value-added services business through the VIEs, the Company will, if needed, provide such support on a discretional basis in the future, which could expose the Company to a loss.

There is no VIE where the Company has variable interest but is not the primary beneficiary.

Please refer to Note 4(a) for the consolidated financial information of the Group's VIEs as of December 31, 2021.

2. Principal accounting policies

(a) Basis of presentation

The consolidated financial statements of the Group have been prepared in accordance with the U.S. GAAP to reflect the financial position, results of operations and cash flows of the Group. Significant accounting policies followed by the Group in the preparation of the consolidated financial statements are summarized below.

(b) Consolidation

The Group's consolidated financial statements include the financial statements of the Company, its subsidiaries and VIEs for which the Company or its subsidiary is the primary beneficiary. All transactions and balances among the Company, its subsidiaries and VIEs have been eliminated upon consolidation.

A subsidiary is an entity in which the Company, directly or indirectly, controls more than one half of the voting powers; or has the power to appoint or remove the majority of the members of the board of directors; or to cast a majority of votes at the meeting of directors; or has the power to govern the financial and operating policies of the investee under a statute or agreement among the shareholders or equity holders.

A VIE is an entity in which the Company, or its subsidiary, through contractual agreements, bears the risks of, and enjoys the rewards normally associated with ownership of the entity, and therefore the Company or its subsidiary is the primary beneficiary of the entity. In determining whether the Company or its subsidiaries are the primary beneficiary, the Company considered whether it has the power to direct activities that are significant to the VIEs economic performance, and also the Company's obligation to absorb losses of the VIEs that could potentially be significant to the VIEs or the right to receive benefits from the VIEs that could potentially be significant to the VIEs. Beijing Huanju Shidai, Huya Technology, BaiGuoYuan Technology, Guangzhou Wangxing and ultimately the Company hold all the variable interests of the VIEs and have been determined to be the primary beneficiaries of the VIEs. As a result of the share transfer to Tencent on April 3, 2020, the Group no longer consolidate the results of operations of Huya.

The Company deconsolidates its subsidiaries or business in accordance with ASC 810 as of the date the Company ceased to have a controlling financial interest in the subsidiaries.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(b) Consolidation (continued)

The Company accounts for the deconsolidation of its subsidiaries or business by recognizing a gain or loss in net income/loss attributable to the Company in accordance with ASC 810. This gain or loss is measured at the date the subsidiaries are deconsolidated as the difference between (a) the aggregate of the fair value of any consideration received, the fair value of any retained non-controlling interest in the subsidiaries being deconsolidated, and the carrying amount of any non-controlling interest in the subsidiaries being deconsolidated, including any accumulated other comprehensive income/loss attributable to the non-controlling interest, and (b) the carrying amount of the assets and liabilities of the subsidiaries being deconsolidated.

(c) Use of estimates

The preparation of the Company's consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, mezzanine equity and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period in the consolidated financial statements and accompanying notes. Actual results could differ materially from such estimates. The Company believes that the assessment of whether the Group acts as a principal or an agent in different revenue streams, the determination of estimated selling prices of contracts with multiple performance obligations (and identification thereof), income taxes, expected credit loss of receivables, determination of share-based compensation expenses, purchase price allocation in a business combination, impairment assessment of goodwill, long-lived assets and intangible assets, tax considerations for earnings retained in the Group's VIEs, assessment on the probability of performance conditions that affect vesting (and expense recognition), and subsequent adjustments due to significant observable price change for the equity investments without readily determinable fair values and not accounted for by the equity method, represent critical accounting policies that reflect the more significant judgments and estimates used in the preparation of its consolidated financial statements.

Management bases the estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results could differ from these estimates.

(d) Foreign currency translation

The Group uses US$ as its reporting currency. The functional currency of the Company and its subsidiaries incorporated in the Cayman Islands, British Virgin Islands, Hong Kong, Singapore, United States, India, Egypt and other regions is US$ or their respective local currency, while the functional currency of the other subsidiaries incorporated in PRC is Renminbi ("RMB"). In the consolidated financial statements, the financial information of the Company and its subsidiaries, which use RMB or their respective local currency as their functional currency, have been translated into US$. Assets and liabilities are translated at the exchange rates on the balance sheet date, equity amounts are translated at historical exchange rates, and revenues, expenses, gains, and losses are translated using the average exchange rate for the period. Translation adjustments arising from these are reported as foreign currency translation adjustments and are shown as a component of other comprehensive income or loss in the statement of comprehensive income.

Foreign currency transactions denominated in currencies other than functional currency are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are remeasured at the applicable rates of exchange in effect at that date. Foreign exchange gains and losses resulting from the settlement of such transactions and from remeasurement at year-end are recognized in foreign currency exchange gains/losses, net in the consolidated statement of comprehensive income.

2. Principal accounting policies (continued)

(e) Cash and cash equivalents and restricted cash

Cash includes currency on hand and deposits held by financial institutions that can be added to or withdrawn without limitation. Cash equivalents represent short-term and highly liquid investments placed with banks, which have both of the following characteristics:

i) Readily convertible to known amounts of cash throughout the maturity period;

ii) So near their maturity that they present insignificant risk of changes in value because of changes in interest rates.

The Group considers all highly liquid investments with original maturities of three months or less as cash equivalents.

Cash, cash equivalents and restricted cash presented on the consolidated statements of cash flows included cash, cash equivalents, restricted cash and restricted cash within restricted short-term deposits in the consolidated balance sheets.

(f) Short-term deposits

Short-term deposits represent time deposits placed with banks with original maturities between three months and one year. Interest earned is recorded as interest income in the consolidated statements of comprehensive income during the periods presented.

(g) Long-term deposits

Long-term deposits represent time deposits placed with banks with original maturities more than one year. Interest earned is recorded as interest income in the consolidated statements of comprehensive income during the periods presented.

(h) Short-term investments

For investments in financial instruments with a variable interest rate indexed to the performance of underlying assets, the Group elected the fair value method at the date of initial recognition and carried these investments subsequently at fair value. Changes in fair values are reflected in the consolidated statements of comprehensive income.

(i) Accounts receivable

In June 2016, the FASB issued ASU 2016-13: Financial Instruments-Credit Losses (Topic 326), which requires entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. This replaces the existing incurred loss model and is applicable to the measurement of credit losses on financial assets measured at amortized cost. The Group adopted ASU 2016-13 from January 1, 2020 and maintains an allowance for credit losses in accordance with Topic 326 and records the allowance for credit losses as an offset to accounts receivable. The Company assesses collectability by reviewing accounts receivable on a collective basis where similar characteristics exist, primarily based on similar business line, service or product offerings and on an individual basis when the Company identifies specific customers with known disputes or collectability issues. The Company using modified-retrospective transition approach with a cumulative-effect adjustment to shareholders' equity amounting to US$1.7 million recognized as of January 1, 2020.

(j) Financing receivables

Financing receivables represent receivables derived from finance business, including micro-credit personal loans and corporate loans. Financing receivables are recorded at amortized cost, reduced by a valuation allowance estimated as of the balance sheet date. The amortized cost is equal to the unpaid principal amount, accrued interest receivables and net deferred origination costs. The origination costs are the direct costs attributable to originating the financing charged by third-party companies. The cash flows related to the principal of finance business are included in the investing activities category in the consolidated statement of cash flows.

2. Principal accounting policies (continued)

(j) Financing receivables (continued)

Micro-credit personal loans

The Group provides micro loans to qualified individual borrowers. The micro loan periods granted to the borrowers generally range from one month to twelve months. The Group has ceased to extend credit in our PRC internet micro-financing business since the second half of 2019.

Corporate loans

The Group provides loans to corporate borrowers mainly through sales-and-leaseback model. Under the sales-and-leaseback arrangement, the Group, who is also the lender, purchases machinery and equipment from lessees, who are also the borrowers, and leases the purchased equipment back to the lessees for a number of years. In a sales-and-leaseback arrangement, the transaction is in substance a collateral financing. The Group has ceased to extend credit in the corporate loans business since 2019.

Allowance for financing receivables

The Group assesses the allowance for credit losses on financing receivables at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. The Group adopted ASU 2016-13 from January 1, 2020 and maintains an allowance for credit losses in accordance with Topic 326 and records the allowance for credit losses as an offset to financing receivable. The Company assesses collectability by reviewing financing receivable on a collective basis where similar characteristics exist, primarily based on similar business line, service or product offerings and on an individual basis when the Company identifies specific customers with known disputes or collectability issues.

(k) Investments

Equity Investments with Readily Determinable Fair Values

Equity investments with readily determinable fair values are measured and recorded at fair value using the market approach based on the quoted prices in active markets at the reporting date. The Group classifies the valuation techniques that use these inputs as Level 1 of fair value measurements. Gains or losses arising from changes in fair value of these investments are recorded in earnings.

Equity Investments without Readily Determinable Fair Values

After the adoption of this new accounting standard, the Group elected to record equity investments without readily determinable fair values and not accounted for under the equity method at cost, less impairment, adjusted for subsequent observable price changes on a nonrecurring basis, and report changes in the carrying value of the equity investments in current earnings. Changes in the carrying value of the equity investments are required to be made whenever there are observable price changes in orderly transactions for the identical or similar investment of the same issuer. The implementation guidance notes that an entity should make a “reasonable effort” to identify price changes that are known or that can reasonably be known.

2. Principal accounting policies (continued)

(k) Investments (continued)

Equity Investments Accounted for Using the Equity Method

The Group accounts for its equity investment over which it has significant influence but does not own a majority equity interest or otherwise control using the equity method. The Group adjusts the carrying amount of the investment and recognizes investment income or loss for share of the earnings or loss of the investee after the date of investment. The Group assesses its equity investment for other-than-temporary impairment (which would require an adjustment to estimated fair value) by considering factors including, but not limited to, current economic and market conditions, operating performance of the entities, including current earnings trends and undiscounted cash flows, and other entity-specific information. The fair value determination, particularly for investment in privately held entities, requires judgment to determine appropriate estimates and assumptions. Changes in these estimates and assumptions could affect the calculation of the fair value of the investment and determination of whether any identified impairment is other-than-temporary.

Available-for-sale debt investments

Available-for-sale debt investment of the Group is a convertible bond issued by a private company that is redeemable at the Group's option, which is measured at fair value. Interest income is recognized in earnings. All other changes in the carrying amount of this debt investment are recognized in other comprehensive income (loss).

(l) Property and equipment

Property and equipment are stated at historical cost less accumulated depreciation and impairment loss, if any. Depreciation is calculated using the straight-line method over their estimated useful lives. Residual rate is determined based on the economic value of the property and equipment at the end of the estimated useful lives as a percentage of the original cost.

	Estimated useful lives	Residual rate
Buildings	40 years	0 %
Servers, computers and equipment	3-5 years	0%-5 %
Leasehold improvements	Shorter of lease term or 5 years	0 %
Renovation of buildings	10 years	0 %
Motor vehicles	4 years	0%-5 %
Furniture, fixture and office equipment	3-5 years	0%-5 %

Expenditures for maintenance and repairs are expensed as incurred. The gain or loss on the disposal of property and equipment is the difference between the net sales proceeds and the carrying amount of the relevant assets and is recognized in the consolidated statements of comprehensive income.

All direct and indirect costs that are related to the construction of property and equipment and incurred before the assets are ready for their intended use are capitalized as construction in progress. Construction in progress is transferred to specific property and equipment items and depreciation of these assets commences when they are ready for their intended use.

2. Principal accounting policies (continued)

(m) Business combinations

Business combinations are recorded using the purchase method of accounting, and the cost of an acquisition is measured as the aggregate of the fair values at the date of exchange of the assets given, liabilities incurred, and equity instruments issued as well as the contingent considerations and all contractual contingencies as of the acquisition date. The costs directly attributable to the acquisition are expensed as incurred. Identifiable assets, liabilities and contingent liabilities acquired or assumed are measured separately at their fair value as of the acquisition date, irrespective of the extent of any non-controlling interests. The excess of (i) the total of consideration of acquisition, fair value of the non-controlling interests and acquisition date fair value of any previously held equity interest in the subsidiary acquired over (ii) the fair value of the identifiable net assets of the subsidiary acquired is recorded as goodwill. If the consideration of acquisition is less than the fair value of the net assets of the business acquired, the difference is recognized directly in the consolidated statements of comprehensive income.

(n) Intangible assets

Intangible assets mainly consist of trademark, customer relationships, non-compete agreement, operating rights, software, domain names, technology, license and others. Identifiable intangible assets are carried at acquisition cost less accumulated amortization and impairment loss, if any. Finite-lived intangible assets are tested for impairment if impairment indicators arise. Amortization of finite-lived intangible assets is computed using the straight-line method over their estimated useful lives, which are as follows:

	Estimated useful lives
Trademark	6 - 10 years
Customer relationships	3 years
Licenses	15 years
Non-compete agreement	1 year
Operating rights	Shorter of the economic life or contract terms
Software	1-5 years
Domain names	10-15 years
Technology	5-6 years
Others	Shorter of the economic life or contract terms

(o) Land use rights

Land use rights are carried at cost less accumulated amortization. Amortization of the land use rights is made on straight-line basis over 40 years from the date when the Group first obtained the land use rights certificate from the local authorities. In 2021, the Group entered into an agreement with bank and borrowed loans amounting to US$7.4 million recorded in other non-current liabilities as of December 31, 2021 were pledged by the Group’s land use right amounting to US$256.1 million as of December 31, 2021 to the parcel of land located in Guangzhou and the Group’s entitlement to the rental income from such building.

(p) Impairment of long-lived assets

For long-lived assets other than investments and goodwill whose impairment policy is discussed elsewhere in the financial statements, the Group evaluates for impairment whenever events or changes (triggering events) indicate that the carrying amount of an asset may no longer be recoverable. The Group assesses the recoverability of the long-lived assets by comparing the carrying value of the long-lived assets to the estimated undiscounted future cash flows expected to receive from use of the assets group and their eventual disposition. Such assets are considered to be impaired if the sum of the expected undiscounted cash flows is less than the carrying amount of the assets. The impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. The Group tests impairment of long-lived assets at the asset group level when impairment indicator appeared and recognizes impairment in the event that the carrying value exceeds the fair value of each reporting unit.

The impairment charges of long-lived assets recorded in general and administrative expenses for the years ended December 31, 2019, 2020 and 2021 were amounting to US$1,195, nil and, nil respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(q) Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business.

(r) Annual test for impairment of goodwill

The Group assesses goodwill for impairment in accordance with ASC subtopic 350-20, Intangibles-Goodwill and Other: Goodwill ("ASC 350-20"), which requires that goodwill be tested for impairment at the reporting unit level at least annually and more frequently upon the occurrence of certain events, as defined by ASC 350-20. A reporting unit is defined as an operating segment or one level below an operating segment referred to as a component. The Group determines its reporting units by first identifying its operating segments, and then assesses whether any components of these segments constituted a business for which discrete financial information is available and where the Company's segment manager regularly reviews the operating results of that component. The Group determined that it has one reporting unit because components below the consolidated level either did not have discrete financial information or their operating results were not regularly reviewed by the segment manager.

In January 2017, the FASB issued ASU 2017-04, Simplifying the Test for Goodwill Impairment, which simplifies the accounting for goodwill impairment by eliminating Step two from the goodwill impairment test. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, versus determining an implied fair value in Step two to measure the impairment loss. The Group adopted this guidance on a prospective basis on January 1, 2020 with no material impact on its consolidated financial statements and related disclosures as a result of adopting the new standard.

The Group has the option to assess qualitative factors first to determine whether it is necessary to perform the quantitative impairment test in accordance with ASC 350-20. If the Group believes, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount, the quantitative impairment test described above is required. Otherwise, no further testing is required. In the qualitative assessment, the Group considers primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. The quantitative goodwill impairment test, used to identify both the existence of impairment and the amount of impairment loss, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit is greater than zero and its fair value exceeds its carrying amount, goodwill of the reporting unit is considered not impaired.

As of December 31, 2020 and 2021, the fair value of the Group's reporting unit was substantially greater than the respective carrying value, and therefore goodwill related to the Group's reporting unit was not impaired.

(s) Convertible bonds

Before January 1, 2021, the Company determines the appropriate accounting treatment of its convertible bonds in accordance with the terms in relation to the conversion feature, call and put options, and beneficial conversion feature. After considering the impact of such features, the Group may account for such instrument as a liability in its entirety, or separate the instrument into debt and equity components following the respective guidance described under ASC 815 Derivatives and Hedging and ASC 470 Debt. The debt discount, if any, together with related issuance cost are subsequently amortized as interest expense, using the effective interest method, from the issuance date to the earliest conversion date. Interest expenses are recognized in the statement of comprehensive income in the period in which they are incurred.

On January 1, 2021, the Company early adopted ASU 2020-06, “Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity” using modified-retrospective transition approach. Pursuant to ASU 2020-06, the embedded conversion features no longer are separated from the host contract for convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, Derivatives and Hedging, or that do not result in substantial premiums accounted for as paid-in capital. Consequently, a convertible debt instrument will be accounted for as a single liability measured at its amortized cost as long as no other features require bifurcation and recognition as derivatives. Following the adoption of this guidance, the amount previously allocated to additional paid-in capital was reclassified as a liability and a cumulative effect adjustment of US$86.7 million was credited to retained earnings as of January 1, 2021.

2. Principal accounting policies (continued)

(t) Mezzanine equity and non-controlling interests

Mezzanine equity

For the Company's majority-owned subsidiaries and consolidated VIEs, a non-controlling interest is recognized to reflect the portion of their equity which is not attributable, directly or indirectly, to the Company. When the non-controlling interest is contingently redeemable upon the occurrence of a conditional event, which is not solely within the control of the Company, the non-controlling interest is classified as mezzanine equity.

In accordance with ASC subtopic 480-10, the Group calculated, on an accumulative basis from the acquisition date, (i) the amount of accretion that would increase the balance of non-controlling interests to their estimated redemption value over the period from the date of acquisition to the earliest redemption date of the non-controlling interests and (ii) the amount of net profit attributable to non-controlling shareholders of certain subsidiaries based on their ownership percentage. The carrying value of the non-controlling interests as mezzanine equity was adjusted by a cumulative amount equal to the higher of (i) and (ii).

Each type of increase in carrying amount shall be recorded as charges against retained earnings or, in the absence of retained earnings, by charges against additional paid-in capital.

Non-controlling interests

Non-controlling interests are recognized to reflect the portion of the equity of majority-owned subsidiaries and VIEs which is not attributable, directly or indirectly, to the controlling shareholder.

(u) Revenue

Revenue recognition and significant judgments

Revenues from live streaming are mainly generated from Bigo Live, Likee and Hago platforms. Other revenues are mainly generated from online games, membership, online education, advertising and finance business. Disaggregated revenues are disclosed in Note 33 "Segment Reporting".

Revenues are recognized when control of the promised virtual items or services is transferred to the Group's customers, in an amount that reflects the consideration the Group expects to be entitled to in exchange for those virtual items or services.

The Group has a recharge system for users to purchase the Group's virtual currency. Users can recharge via various online payment platforms provided by third parties. Virtual currency is non-refundable and without expiry. As the virtual currency is often consumed soon after it is purchased based on history of turnover, the Group considers the impact of the breakage amount for virtual currency coupons is insignificant. Unconsumed virtual currency is recorded as deferred revenue. Virtual currencies used to purchase virtual items are recognized as revenue according to the prescribed revenue recognition policies of virtual items addressed below unless otherwise stated.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(u) Revenue (continued)

Revenue recognition and significant judgments (continued)

(i) Live streaming

Live streaming mainly consists of Bigo Live, Likee and Hago platforms. It generates revenue from sales of virtual items in the platforms. Users can access the platforms and view the live streaming content showed by the performers. The Group shares a portion of the sales proceeds of virtual items ("revenue sharing fee") with performers and talent agencies in accordance with their revenue sharing arrangements. Those performers who do not have revenue sharing arrangements with the Group are not entitled to any revenue sharing fee.

The Group evaluates and determines that it is the principal and views users to be its customers. The Group reports live streaming revenues on a gross basis. Accordingly, the amounts billed to users are recorded as revenues and revenue sharing fee paid to performers and talent agencies are recorded as cost of revenues. Where the Group is the principal, it controls the virtual items before they are transferred to users. Its control is evidenced by the Group's sole ability to monetize the virtual items before they are transferred to users, and is further supported by the Group being primarily responsible to users and having a level of discretion in establishing pricing.

The Group designs, creates and offers various virtual items for sales to users with pre-determined selling price. Sales proceeds are recorded as deferred revenue and recognized as revenue based on the consumption of the virtual items. Virtual items are categorized as consumable and time-based items. Consumable items are consumed upon purchase and use while time-based items could be used for a fixed period of time. Users can purchase and present consumable items to performers to show support for their favorite performers, or purchase time-based virtual items for one or multiple months for a monthly fee, which provide users with recognized status, such as priority speaking rights or special symbols over a period of time. Accordingly, live streaming revenue is recognized immediately when the consumable virtual item is used, or in the case of time-based virtual items, revenue is recognized ratably over the fixed period on a straight-line basis. The Group does not have further obligations to the user after the virtual items are consumed immediately or after the stated period of time for time-based items.

The Group may also enter into contracts that can include various combinations of virtual items, which are generally capable of being distinct and accounted for as separate performance obligations, such as the noble member program. Judgments are required as follow: 1) determining whether those virtual items are considered distinct performance obligations that should be accounted for separately versus together, 2) determining the standalone selling price for each distinct performance obligation, and 3) allocating of the arrangement consideration to the separate accounting of each distinct performance obligation based on their relative standalone selling prices. Certain virtual items are provided to customers over time and have the same pattern of transfer to customers. The Group exercises judgement in determining the number of distinct performance obligations by accounting for services that have the same pattern of transfer to customers as a single performance obligation. In instances where standalone selling price is not directly observable as the Group does not sell the virtual item separately, the Group determines the standalone selling price based on pricing strategies, market factors and strategic objectives. The Group recognizes revenue for each of the distinct performance obligations identified in accordance with the applicable revenue recognition method relevant for that obligation.

As the Group's live streaming virtual items are generally sold without right of return and the Group does not provide any other credit and incentive to its users, therefore accounting of variable consideration when estimating the amount of revenue to recognize is not applicable to the Group's live streaming business.

(ii) Others

Other revenues mainly generated from online games, membership, online education, advertising, finance business and e-commerce business.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(u) Revenue (continued)

Revenue recognition and significant judgments (continued)

(ii) Others (continued)

(1) Online games revenues

The Group generates revenues from offering virtual items in online games developed by third parties or the Group itself to game players. Historically, the majority of online games revenues for the years ended December 31, 2019, 2020 and 2021 were derived from third parties developed games. The Group disposed of its major online games business to a third party in 2019.

Users play games through the Group's platform free of charge and are charged for purchases of virtual items, including consumable and perpetual items, which can be utilized in the online games to enhance their game-playing experience. Consumable items represent virtual items that can be consumed by a specific user within a specified period of time. Perpetual items represent virtual items that are accessible to the users' account over the life of the online games.

Pursuant to contracts signed between the Group and the respective game developers, game developers own the games' copyrights and other intellectual property, and take primary responsibilities of game development and game operation, including designing, developing and updating of the games related to game content, pricing of virtual items, providing ongoing updates of new contents and bug fixing. The Group's responsibilities under the agreements with the game developers to offer certain standard promotions that include providing access to the platform, announcing the new games to users on the platform, and occasional advertising on the Group's platforms. Therefore, revenues derived from third party developed games are recorded on a net basis, net of the amount paid to game developers.

The Group has adopted a policy to recognize revenues relating to game tokens for third party developed games over the estimated user relationship period with the Group on a game-by-game basis, which is approximately one to six months for the periods presented. The estimated user relationship period is based on data collected from those users who have acquired game tokens. Revenues from in-game payments of each month are recognized over the user relationship period estimated for that game.

(2) Membership

The Group operates a membership subscription program where subscription members can have enhanced user privileges. The membership fee is collected up-front from subscribers. The receipt of the revenue is initially recorded as deferred revenue and revenue is recognized ratably over the period of the subscription when services are rendered. Unrecognized portion beyond 12 months from balance sheet date is classified as long-term deferred revenue.

(3) Online education revenues

Educational programs and services consist of vocational training, language training courses and K-12 afterschool education courses. The course fee is generally paid in advance and is initially recorded as deferred revenue. Revenue for regular courses is recognized proportionately as the classes are attended, and is reported net of scholarships and course fee refunds. Students are entitled to one trial class of the purchased course and course fee is fully refundable if a student decides not to take the remaining course after the trial class. No refund will be provided to a student who withdraws from a course after the trial period, and revenue is recognized for the amount collected. Course fee refunds were insignificant over the period presented.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(u) Revenue (continued)

Revenue recognition and significant judgments (continued)

(ii) Others (continued)

(4) Advertising revenues

The Group primarily generates advertising revenues from sales of various forms of advertising and provision of promotion campaigns on the live streaming platforms by way of advertisement display or integrated promotion activities in shows and programs on the live streaming platforms. Advertisements on the Group's platforms are generally charged on the basis of duration, and advertising contracts are signed to establish the fixed price and the advertising services to be provided. Where collectability is reasonably assured, advertising revenues from advertising contracts are recognized ratably over the contract period of display.

The Group enters into advertising contracts directly with advertisers or third-party advertising agencies that represent advertisers. Payment terms and conditions vary by contract type, although terms generally include a requirement of payment within 1 to 3 months. Both third-party advertising agencies and direct advertisers are generally billed at the end of the display period and payments are due usually within 3 months. In instances where the timing of revenue recognition differs from the timing of billing, the Group has determined the advertising contracts generally do not include a significant financing component. The primary purpose of the credits terms is to provide customers with simplified and predictable ways of purchasing the Group's advertising services, not to receive financing from its customers or to provide customers with financing.

Certain customers may receive sales incentives in the forms of discounts and rebates to advertisers or advertising agencies based on purchase volume, which are accounted for as variable consideration. The Group estimates these amounts based on the expected amount to be provided to customers considering the contracted rebate rates and estimated sales volume based on historical experience, and reduce revenues recognized. The Group believes that there will not be significant changes to the estimates of variable consideration.

(5) Financing revenues

The Group generates revenues from micro-credit personal loans provided to individual borrowers and corporate loans to corporate customers. The Group recognizes financing income related to those services over the life of the underlying financing using the effective interest method on unpaid principal amounts after net of loan origination cost.

The Group does not accrue financing revenues when financing receivables is placed on non-accrual status. Financing revenues will be recognized when cash is received on a cash basis cost recovery method by applying first to reduce principal and then to interests thereafter.

The Group has ceased to operate in the financing business during 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(u) Revenue (continued)

Revenue recognition and significant judgments (continued)

(ii) Others (continued)

(6) E-commerce business revenues

The Company operates several e-commerce platforms and displays goods for end customers to select and order. The Group is responsible to arrange delivery of the goods to the end customers after customers place an order in the platforms. The Group recognizes e-commerce business revenue equal to the sales price (net of sales discount) to the end customers when control of the inventory is transferred. Revenues derived from e-commerce business are recorded on a gross basis, because (i) the Group is primarily responsible for fulfilling the promise to provide the specified good, (ii) the Group is subject to inventory risks before the specified goods have been transferred to a customer or after transfer of control to the customers, and (iii) the Group has discretion in establishing the price of the specified goods.

Contract balances

The Group collects accounts receivable from various online payment platforms, distribution platforms and advertising customers. The allowance of expected credit loss of receivables reflects the Group's best estimate of probable losses inherent in the accounts receivable balance. The Group determines the allowance based on known troubled accounts, historical experience, and other currently available evidence. The activity in the allowance for doubtful accounts for the periods presented is disclosed and detailed in Note 9.

The opening balance of accounts receivable was US$95,803 as of January 1, 2020. As of December 31, 2020 and 2021, accounts receivable were US$142,999 and US$114,372, respectively. During the years ended December 31, 2019, 2020 and 2021, the Group recognized an addition of US$13, an addition of US$6,726 and an addition of US$5,039 of allowance for accounts receivable, respectively.

Contract liabilities primarily consists of deferred revenue for unconsumed virtual items and unamortized revenue from virtual items in the Group's platforms, where there is still an obligation to be provided by the Group, which will be recognized as revenue when all of the revenue recognition criteria are met.

The opening balance of deferred revenue related to live streaming business as of January 1, 2020 was US$25,021. As of December 31, 2020 and 2021, deferred revenue related to live streaming business were US$65,979 and US$64,356, respectively. During the years ended December 31, 2020 and 2021, the Group recognized revenue of live streaming business amounted to US$23,203 and US$63,450, respectively, that was included in the corresponding contract liability balance at the beginning of the periods.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(u) Revenue (continued)

Contract balances (continued)

The opening balance of deferred revenue related to other revenue as of January 1, 2020 was US$5,106. As of December 31, 2020 and 2021, deferred revenue related to other revenue were US$4,383 and US$2,976, respectively. During the years ended December 31, 2020 and 2021, the Group recognized revenue of other revenue amounted to US$4,427 and US$3,780, respectively, that was included in the corresponding contract liability balance at the beginning of the periods.

During the years ended December 31, 2019, 2020 and 2021, the Group does not have any arrangement where the performance obligations have already been satisfied in the past year, but the corresponding revenue is recognized in a later year.

As of December 31, 2021, the aggregate amount of the transaction price allocated to the remaining performance obligation is US$67,332, the Group expects to recognize US$60,910 performance obligation as revenue in 2022, the remaining performance obligation is expected to be recognized as revenue in 2023 and after years. However, the amount and timing of revenue recognition is largely driven by customer usage, which can extend beyond the original contractual term.

(v) Advances from customers and deferred revenue

Advances from customers primarily consist of prepayments from users in the form of the Group's virtual currency that are not yet consumed or converted into tokens, and upon the consumption or conversion, are recognized as revenue according to the prescribed revenue recognition policies described above.

Deferred revenue primarily consists of the unamortized game tokens, prepaid subscriptions under the membership program and unamortized revenue from virtual items in various channels in the Group's platforms, where there is still an implied obligation to be provided by the Group, which will be recognized as revenue when all of the revenue recognition criteria are met.

(w) Cost of revenues

Amounts recorded as cost of revenue relate to direct expenses incurred in order to generate revenue. Such costs are recorded as incurred. Cost of revenues primarily consists of (i) revenue sharing fees and content costs, including payments to various channel owners and performers, and content providers, (ii) bandwidth costs, (iii) payment handling costs, (iv) salary and welfare, (v) technical service fee, (vi) depreciation and amortization expense for servers, other equipment and intangibles directly related to operating the platform, (vii) share-based compensation and (viii) other costs.

The Group was subject to surcharges of VAT, which are calculated based on 12% of the VAT paid for the years ended December 31, 2019, 2020 and 2021.

The Group reported other taxes and surcharges in cost of revenues.

Based on the Group's corporate structure and the contractual arrangements among the Group's PRC subsidiaries, the Group's VIEs and their shareholders, the Group is effectively subject to 6%, 9% or 13% VAT and related surcharges on revenues generated by the Group's subsidiaries based on the Group's contractual arrangements entered into with the Group's VIEs.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(x) Research and development expenses

Research and development expenses primarily consist of (i) salary and welfare for research and development personnel, (ii) share-based compensation for research and development personnel, (iii) depreciation of office premise and servers utilized by research and development personnel, and (iv) rental expenses. Costs incurred during the research stage are expensed as incurred. Costs incurred in the development stage, prior to the establishment of technological feasibility, which is when a working model is available, are expensed when incurred.

The Group recognizes internal use software development costs in accordance with guidance on intangible assets and internal use software. This requires capitalization of qualifying costs incurred during the software's application development stage and to expense costs as they are incurred during the preliminary project and post implementation/operation stages. The Group has not capitalized any costs related to internal use software during the years ended December 31, 2019, 2020 and 2021, respectively.

(y) Sales and marketing expenses

Sales and marketing expenses primarily consist of (i) advertising and market promotion expenses, (ii) amortization of certain intangible assets from business acquisitions, and (iii) salary and welfare for sales and marketing personnel. The advertising and market promotion expenses amounted to approximately US$310,496, US$388,504 and US$383,603 during the years ended December 31, 2019, 2020 and 2021, respectively.

(z)General and administrative expenses

General and administrative expenses primarily consist of (i) share-based compensation for management and administrative personnel, (ii) salary and welfare for general and administrative personnel, (iii) impairment charges (if any), and (iv) professional service fees.

(aa)Employee social security and welfare benefits

Employees of the Group in the PRC are entitled to staff welfare benefits including pension, work-related injury benefits, maternity insurance, medical insurance, unemployment benefit and housing fund plans through a PRC government-mandated multi-employer defined contribution plan. The Group is required to accrue for these benefits based on certain percentages of the employees' salaries, up to a maximum amount specified by the local government. The Group is required to make contributions to the plans out of the amounts accrued. The PRC government is responsible for the medical benefits and the pension liability to be paid to these employees and the Group's obligations are limited to the amounts contributed and no legal obligation beyond the contributions made. Employee social security and welfare benefits included as expenses in the accompanying statements of comprehensive income amounted to US$42,853, US$50,621 and US$67,733 for the years ended December 31, 2019, 2020 and 2021, respectively.

(bb) Share-based compensation

The Group grants stock-based award, such as, but not limited to, share options, restricted shares, restricted share units of the Company, share option, restricted share units and ordinary shares of the Company's subsidiaries to eligible employees, officers, directors, and non-employee consultants.

2. Principal accounting policies (continued)

(bb) Share-based compensation (continued)

Awards granted to employees, officers, and directors are initially accounted for as equity-classified awards. The related share-based compensation expenses are measured at the grant date fair value of the award and are recognized using the graded vesting method, net of estimated forfeiture rates, over the requisite service period, which is generally the vesting period. Forfeitures are estimated at the time of grant based on historical forfeiture rates and will be revised in the subsequent periods if actual forfeitures differ from those estimates. The Group also granted share options, restricted shares and restricted share units to non-employees, which are also initially accounted for as equity-classified awards. Awards granted to non-employees are initially measured at fair value on the grant date and periodically remeasured thereafter until the earlier of the performance commitment date or the date the service is completed and recognized over the period the service is provided. Awards are remeasured at each reporting date using the fair value as at each period end until the measurement date, generally when the services are completed and share-based awards are vested. Changes in fair value between the interim reporting dates are recorded in consistent with the method used in recognizing the original compensation costs.

For an award with a performance and/or service condition that affects vesting, the performance and/or service condition is not considered in determining the award's fair value on the grant date. Performance and service conditions should be considered when the Group is estimating the quantity of awards that will vest. Compensation cost will reflect the number of awards that are expected to vest and will be adjusted to reflect those awards that do ultimately vest. The Group recognizes compensation cost for awards with performance conditions if and when the Group concludes that it is probable that the performance condition will be achieved, net of an estimate of pre-vesting forfeitures over the requisite service period. The Group reassesses the probability of vesting at each reporting period for awards with performance conditions and adjusts compensation cost based on its probability assessment, unless on certain situations, the Group may not be able to determine that it is probable that a performance condition will be satisfied until the event occurs.

ASU 2017-09, Compensation—Stock Compensation (Topic 718), Scope of Modification Accounting, provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718.

An entity should account for the effects of a modification unless all the followings are met:

- The fair value (or calculated value or intrinsic value, if such an alternative measurement method is used) of the modified award is the same as the fair value (or calculated value or intrinsic value, if such an alternative measurement method is used) of the original award immediately before the original award is modified. If the modification does not affect any of the inputs to the valuation technique that the entity uses to value the award, the entity is not required to estimate the value immediately before and after the modification.
- The vesting conditions of the modified award are the same as the vesting conditions of the original award immediately before the original award is modified.
- The classification of the modified award as an equity instrument or a liability instrument is the same as the classification immediately before the original award is modified.

The current disclosure requirements in Topic 718 apply regardless of whether an entity is required to apply modification accounting under the amendments in this ASU 2017-09.

The Group adopted these amendments to Subtopic 718-10 and there was no impact on the consolidated financial statements for the years presented.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(bb) Share-based compensation (continued)

The details of the Group’s share-based awards are disclosed in Note 26. Fair value determination of these share-based awards is summarized as below:

(1) Restricted share units

In determining the fair value of restricted share units granted, the fair value of the underlying shares of JOYY on the grant dates is applied. The grant date fair value of restricted share units is based on stock price of JOYY in the Nasdaq Global Select Market.

(2) Share options

In determining the fair value of share options granted, a binomial option-pricing model is applied. The determination of the fair value is affected by the stock price of JOYY in the Nasdaq Global Select Market, as well as assumptions regarding a number of complex and subjective variables, including risk-free interest rates, exercise multiples, expected forfeiture rates, the expected share price volatility rates, and expected dividends.

(3) Restricted shares

Upon the acquisition of Bigo, Class A common shares are issued for the replacement awards to Bigo's employees to replace their original share-based awards, namely restricted shares. In determining the fair value of restricted share granted to Bigo's employees, the fair value of the underlying shares of JOYY on the grant dates is applied. The grant date fair value of restricted shares is based on stock price of JOYY in the Nasdaq Global Select Market.

(cc) Other income

Other income primarily consists of government grants which represent cash subsidies received from the PRC government by the Group entities. Government grants are originally recorded as deferred revenue when received upfront. After all of the conditions specified in the grants have been met, the grants are recognized as operating income.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(dd) Leases

The Group leases facilities in the PRC under non-cancellable operating leases expiring on different dates. On January 1, 2019, the Company adopted ASU No. 2016-02 (Topic 842) "Leases" using the optional transition method. Results and disclosure requirements for reporting periods beginning after January 1, 2019 are presented under Topic 842, while prior period amounts have not been adjusted and continue to be reported in accordance with our historical accounting under Topic 840. Under Topic 842, lessees are required to recognize assets and liabilities on the balance sheet for most leases. A contract is or contains a lease if the contract conveys the right to control the use of identified property, plant, or equipment (an identified asset) for a period of time in exchange for consideration. The Company determines whether a contract conveys the right to control the use of an identified asset for a period of time by assessing whether the Company has both the right to obtain substantially all of the economic benefits from use of the identified asset and the right to direct the use of the identified asset.

The main impact of the adoption of the standard is that assets and liabilities amounting to US$21.2 million and US$20.6 million, respectively, were recognized beginning January 1, 2019 for leased office space with terms of more than 12 months. The Company accounts for short-term leases with terms less than 12 months in accordance with ASC 842-20-25-2 to recognize the lease payments in profit or loss on a straight-line basis over the lease term and variable lease payments in the period in which the obligation for those payments is incurred. The adoption of the standard did not have a significant impact on the Group's consolidated financial statements.

Operating leases are included in operating lease right-of-use assets, current lease liabilities and non-current lease liabilities on the consolidated balance sheets.

(i) Right-of-use assets

Right-of-use assets, which mainly comprise of office lease, are initially measured at the present value of the lease payments. Amortization of the right-of-use assets is made over the lease term on a generally straight-line basis.

(ii) Lease liabilities

Lease liabilities are lessees' obligations to make the lease payments arising from a lease, measured on a discounted basis.

As a lessee, the weighted average remaining lease terms of the right-of-use assets was 1.18 years and the discount rate for the lease is the rate implicit in the lease unless that rate cannot be readily determined. In that case, the lessee is required to use its incremental borrowing rate. A weighted average incremental borrowing rate of 5.15% was adopted at commencement date in determining the present value of lease payments.

For the year ended December 31, 2020, operating lease cost and short-term lease cost were US$17,249 and US$2,826, respectively. There were no other lease cost other than operating lease cost and short-term lease cost for the year ended December 31, 2020. For the year ended December 31, 2020, cash paid for operating leases included in operating cash flows was US$16,599. For the year ended December 31, 2020, lease liabilities arising from obtaining right-of-use assets was US$12,529.

For the year ended December 31, 2021, operating lease cost and short-term lease cost were US$6,309 and US$5,651, respectively. There were no other lease cost other than operating lease cost and short-term lease cost for the year ended December 31, 2021. For the year ended December 31, 2021, cash paid for operating leases included in operating cash flows was US$6,588. For the year ended December 31, 2021, lease liabilities arising from obtaining right-of-use assets was US$4,531.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(dd) Leases (continued)

A maturity analysis of the Company's operating lease liabilities and reconciliation of the undiscounted cash flows to the operating lease liabilities recognized on the consolidated balance sheet was as below:

	Office rental US$
2022	12,038
2023	4,368
2024	869
2025 and after	491
Total undiscounted cash flows	17,766
Less: imputed interest	(991)
Present value of lease liabilities	16,775

(ee) Income taxes

Current income taxes are provided on the basis of net income for financial reporting purposes, adjusted for income and expense items which are not assessable or deductible for income tax purposes, in accordance with the regulations of the relevant tax jurisdictions. Deferred income taxes are accounted for using an asset and liability method. Under this method, deferred income taxes are recognized for the tax consequences of temporary differences by applying enacted statutory rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. The tax base of an asset or liability is the amount attributed to that asset or liability for tax purpose. The effect on deferred taxes of a change in tax rates is recognized in statement of comprehensive income in the period of change. A valuation allowance is provided to reduce the amount of deferred tax assets if it is considered more likely than not that some portion of, or all of the deferred tax assets will not be realized.

Uncertain tax positions

The guidance on accounting for uncertainties in income taxes prescribes a more likely than not threshold for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. Guidance was also provided on derecognition of income tax assets and liabilities, classification of current and deferred income tax assets and liabilities, accounting for interest and penalties associated with tax positions, accounting for income taxes in interim periods, and income tax disclosures. Significant judgment is required in evaluating the Group’s uncertain tax positions and determining its provision for income taxes. The Group recognizes interests and penalties, if any, under accrued expenses and other current liabilities on its balance sheet and under other expenses in its statements of comprehensive income. The Group did not recognize any significant interest and penalties associated with uncertain tax positions for the years ended December 31, 2019, 2020 and 2021. As of December 31, 2020 and 2021, the Group did not have any significant unrecognized uncertain tax positions.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(ff) Statutory reserves

The Group's subsidiaries and VIEs established in the PRC are required to make appropriations to certain non-distributable reserve funds.

In accordance with the laws applicable to China's Foreign Investment Enterprises, the Group's subsidiaries registered as wholly owned foreign enterprises have to make appropriations from its after-tax profit (as determined under the Accounting Standards for Business Enterprises as promulgated by the Ministry of Finance of the People's Republic of China ("PRC GAAP") to reserve funds including general reserve fund, and staff bonus and welfare fund. The appropriation to the general reserve fund must be at least 10% of the after-tax profits calculated in accordance with PRC GAAP. Appropriation is not required if the reserve fund has reached 50% of the registered capital of the company. Appropriation to the staff bonus and welfare fund is at the company's discretion.

In addition, in accordance with the Company Laws of the PRC, the VIEs of the Company registered as PRC domestic companies must make appropriations from its after-tax profit as determined under the PRC GAAP to non-distributable reserve funds including a statutory surplus fund and a discretionary surplus fund. The appropriation to the statutory surplus fund must be at least 10% of the after-tax profits as determined under the PRC GAAP. Appropriation is not required if the surplus fund has reached 50% of the registered capital of the company. Appropriation to the discretionary surplus fund is made at the discretion of the company.

The use of the general reserve fund, statutory surplus fund and discretionary surplus fund are restricted to the offsetting of losses or increasing capital of the respective company. The staff bonus and welfare fund is a liability in nature and is restricted to fund payments of special bonus to staff and for the collective welfare of employees. All these reserves are not allowed to be transferred to the Company in terms of cash dividends, loans or advances, nor can they be distributed except under liquidation.

During the years ended December 31, 2019, 2020 and 2021, appropriations to general reserve fund and statutory surplus fund amounted to US$6,856, US$4,445 and US$8,979, respectively.

(gg) Related parties

Parties are considered to be related if one party has the ability, directly or indirectly, to control the other party or exercise significant influence over the other party in making financial and operating decisions. Parties are also considered to be related if they are subject to common control or significant influence, such as a family member or relative, shareholder, or a related corporation.

(hh) Dividends

Dividends are recognized when declared.

(ii) Income per share

Basic income per share is computed on the basis of the weighted-average number of common shares outstanding during the period under measurement. Diluted income per share is based on the weighted-average number of common shares outstanding and potential common shares. Potential common shares result from the assumed exercise of outstanding share options, restricted shares and restricted share units or other potentially dilutive equity instruments, when they are dilutive under the treasury stock method or the if-converted method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(jj) Comprehensive income

Comprehensive income is defined as the change in equity of the Company during a period arising from transactions and other events and circumstances excluding transactions resulting from investments by shareholders and distributions to shareholders. Comprehensive income is reported in the consolidated statements of comprehensive income.

As of December 31, 2020 and 2021, accumulated other comprehensive income/loss of the Group is the foreign currency translation adjustments.

(kk) Segment reporting

Operating segments are defined as components of an enterprise engaging in businesses activities for which separate financial information is available that is regularly evaluated by the Group's chief operating decision makers ("CODM") in deciding how to allocate resources and assess performance. The Group's chief operating decision maker has been identified as the Chief Executive Officer, who reviews segment results when making decisions about allocating resources and assessing performance of the Group.

(ll) Assets held for sale

The Group classifies a long-live asset (disposal group) as held for sale in the period in which all of the following criteria are met: a) Management, having the authority to approve the action, commits to a plan to sell the asset (disposal group); b) The asset (disposal group) is available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets (disposal groups); c) An active program to locate a buyer and other actions required to complete the plan to sell the asset (disposal group) have been initiated; d) The sale of the asset (disposal group) is probable, and transfer of the asset (disposal group) is expected to qualify for recognition as a completed sale, within one year, except as permitted by paragraph 360-10-45-11; e) The asset (disposal group) is being actively marketed for sale at a price that is reasonable in relation to its current fair value; and f) Actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn. For a component that meets the criteria of held-for-sale, the historical financial results are reflected in the Group's consolidated financial statements as discontinued operations.

(mm) Recently issued accounting pronouncements

Recently adopted accounting pronouncements

In June 2016, the FASB issued Accounting Standards Update ("ASU") 2016-13: Financial Instruments-Credit Losses (Topic 326), which requires entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. This replaces the existing incurred loss model and is applicable to the measurement of credit losses on financial assets measured at amortized cost. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early application will be permitted for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Group adopted ASU 2016-13 from January 1, 2020 using modified-retrospective transition approach with a cumulative-effect adjustment to shareholders' equity amounting to US$1.7 million recognized as of January 1, 2020.

In January 2020, the FASB issued ASU No. 2020-01, Investments-Equity Securities (Topic 321), Investments-Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)-Clarifying the Interactions between Topic 321, Topic 323, and Topic 815 (a consensus of the Emerging Issues Task Force). The amendments in this update clarify the interaction of the accounting for equity securities under Topic 321 and investments accounted for under the equity method of accounting in Topic 323 and the accounting for certain forward contracts and purchased options accounted for under Topic 815. For public business entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. Early adoption is permitted. The Group adopted the ASU on January 1, 2021, which did not have a material impact on the Group's financial results or financial position.

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(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

2. Principal accounting policies (continued)

(mm) Recently issued accounting pronouncements (continued)

Recently adopted accounting pronouncements (continued)

In August 2020, the FASB issued ASU 2020-06, Accounting for Convertible Instruments and Contracts in an Entity's Own Equity, which focuses on amending the legacy guidance on convertible instruments and the derivatives scope exception for contracts in an entity's own equity. ASU 2020-06 simplifies an issuer's accounting for convertible instruments by reducing the number of accounting models that require separate accounting for embedded conversion features. ASU 2020-06 also simplifies the settlement assessment that entities are required to perform to determine whether a contract qualifies for equity classification. Further, ASU 2020-06 enhances information transparency by making targeted improvements to the disclosures for convertible instruments and earnings-per-share (EPS) guidance, i.e., aligning the diluted EPS calculation for convertible instruments by requiring that an entity use the if-converted method and that the effect of potential share settlement be included in the diluted EPS calculation when an instrument may be settled in cash or shares, adding information about events or conditions that occur during the reporting period that cause conversion contingencies to be met or conversion terms to be significantly changed. This update will be effective for the Company's fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Entities can elect to adopt the new guidance through either a modified retrospective method of transition or a fully retrospective method of transition. The Company adopted ASU 2020-06 on January 1, 2021 and a cumulative effect adjustment of US$86.7 million was credited to retained earnings as of January 1, 2021.

Recently issued accounting pronouncements not yet adopted

In December 2019, the FASB issued ASU 2019-12, "Simplifying the Accounting for Income Taxes" to remove specific exceptions to the general principles in Topic 740 and to simplify accounting for income taxes. The standard is effective for public companies for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. For all other entities, the standard is effective for fiscal years beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. Early adoption is permitted. The standard is effective for the fiscal year beginning January 1, 2022. The Company does not expect ASU 2019-12 to have a material impact to the Company’s consolidated financial statements and related disclosure.

In March 2020, the FASB issued ASU 2020-04, “Reference Rate Reform: Facilitation of the Effects of Reference Rate Reform on Financial Reporting” in Topic 848. The standard is effective for all entities as of March 12, 2020 through December 31, 2022. The standard provides optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The Company does not expect ASU 2020-04 to have a material impact to the Company’s consolidated financial statements and related disclosure.

In November 2021, the FASB issued ASU No. 2021-10, Government Assistance (Topic 832). This ASU requires business entities to disclose information about government assistance they receive if the transactions were accounted for by analogy to either a grant or a contribution accounting model. The disclosure requirements include the nature of the transaction and the related accounting policy used, the line items on the balance sheets and statements of operations that are affected and the amounts applicable to each financial statement line item and the significant terms and conditions of the transactions. The ASU is effective for annual periods beginning after December 15, 2021. The disclosure requirements can be applied either retrospectively or prospectively to all transactions in the scope of the amendments that are reflected in the financial statements at the date of initial application and new transactions that are entered into after the date of initial application. The ASU is currently not expected to have a material impact on the Group's financial results or financial position.

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(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations

(a) Disposal of YY Live business

On November 16, 2020, the Company entered into definitive agreements with Baidu to dispose of the YY Live business. As a result, assets and liabilities of this business were classified as assets and liabilities held for sale and the results of YY Live business were presented as discontinued operations, accordingly. The transaction was substantially completed on February 8, 2021 and the Company no longer was able to operate and exert control over the YY Live business, including but not limited to the assets, liabilities, business and employee contracts necessary for the operation of YY Live business. Accordingly, the Company ceased consolidation of the YY Live business since February 8, 2021 and also ceased to present the results of the YY Live business within discontinued operations since that same date.

The necessary regulatory approvals with respect to this transaction have not been obtained from government authorities as of the date of this annual report and there is no assurance that they will be ultimately obtained. In August 2021, December 2021 and April 2022, the Company and Baidu have agreed to extend the long stop date of the proposed acquisition to a date mutually agreed upon by the parties.

As a result of the pending regulatory approvals discussed above, the Company did not recognize any gain from the transaction up to December 31, 2021. Instead, the Company has classified and presented all the related assets and liabilities related to YY Live business amounting to US$38,194 on a net basis within prepayments and other current assets (Note 11). The total consideration of the transaction is approximately US$3.6 billion in cash and subject to certain adjustments. The Company received part of the consideration amounting to US$1.9 billion by December 31, 2021, which was recorded as advance payments received within accrued liabilities and other current liabilities (Note 18). If the transaction is ultimately closed, the Company will recognize the gain related to the disposal of YY Live business transaction. Should the transaction ultimately be terminated and unwound, the return of the advance prepayment would be expected, the details of which would be subject to further discussion of both parties.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations (continued)

(a) Disposal of YY Live business (continued)

The following tables set forth the assets, liabilities, statement of operations and cash flows of discontinued operations which were included in the Group's consolidated financial statements. The assets and liabilities as of December 31, 2020 shown below are recorded as assets held for sale and liabilities held for sale, respectively, in the consolidated balance sheet. The net amount of the assets and liabilities as of December 31, 2021 shown below are recorded within prepayments and other current assets in the consolidated balance sheet.

	As of December 31,	
	2020	2021
	US$	US$
Assets		
Current assets		
Cash and cash equivalents	31,600	201,393
Accounts receivable, net	15,481	18,239
Prepayments and other current assets	5,447	4,986
Total current assets	52,528	224,618
Non-current assets		
Deferred tax assets	5,238	4,294
Property and equipment, net	9,180	10,356
Intangible assets, net	7,363	7,456
Other non-current assets	3,719	3,814
Total non-current assets	25,500	25,920
Total assets	78,028	250,538
Liabilities		
Current liabilities		
Accounts payable	—	1,117
Deferred revenue	50,070	49,495
Advances from customers	12,377	12,663
Income taxes payable	3,221	9,787
Accrued liabilities and other current liabilities	113,441	139,282
Total current liabilities	179,109	212,344
Non-current liabilities		
Deferred revenue	4,415	—
Total non-current liabilities	4,415	—
Total liabilities	183,524	212,344

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(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations (continued)

(a) Disposal of YY Live business (continued)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net revenues			
Live streaming	1,554,947	1,399,212	151,445
Others	34,919	41,363	2,980
Total net revenues	1,589,866	1,440,575	154,425
Cost of revenues(1)	(827,266)	(773,988)	(88,900)
Gross profit	762,600	666,587	65,525
Operating expenses(1)			
Research and development expenses	(56,874)	(52,519)	(6,323)
Sales and marketing expenses	(73,487)	(84,303)	(8,954)
General and administrative expenses	(28,779)	(22,116)	(7,108)
Total operating expenses	(159,140)	(158,938)	(22,385)
Other income	29,414	23,935	611
Operating income	632,874	531,584	43,751
Interest income and investment income	355	419	355
Income before income tax expenses	633,229	532,003	44,106
Income tax expenses	(85,617)	(49,516)	(8,539)
Net income from discontinued operations	547,612	482,487	35,567

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net cash provided by discontinued operating activities	559,878	478,357	64,289
Net cash (used in) provided by discontinued investing activities	(27,981)	6,819	1,636,450

* There is no financing activity from discontinued operations of YY Live business.

(1) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Cost of revenues	1,256	1,645	(426)
Research and development expenses	8,271	6,656	(703)
Sales and marketing expenses	261	189	(39)
General and administrative expense	10,593	4,928	(175)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations (continued)

(b) Disposal of Huya

On April 3, 2020, the Group sold certain of its equity interests of Huya to a wholly owned subsidiary of Tencent following Tencent's exercise of its purchase option on April 3, 2020. As a result, Huya ceased to be a subsidiary of the Group and the Group accounted for remaining the investment in Huya using the equity method. Upon completion of the transaction, Huya was deconsolidated from the Group. As a result, Huya's historical financial results before April 3, 2020 are reflected in the Group's consolidated financial statements as discontinued operations accordingly.

Immediately before the disposal, the Group held 38.7% and 53% of equity interests and voting power of Huya, respectively. Immediately after the disposal, the Group held 31.2% and 43% of equity interests and voting power of Huya, respectively. Pre-tax income of Huya from the date of disposal to December 31, 2020 and for the year ended December 31, 2021 were US$119,428 and US$39,429, respectively. Share of income (loss) from the equity investment in Huya from date of disposal to December 31, 2020 and for the year ended December 31, 2021 were US$2,431 and US$7,855, respectively, which were recorded within "share of income (loss) in equity method investments, net of income taxes" in the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations (continued)

(b) Disposal of Huya (continued)

The following tables set forth the statement of operations and cash flows of discontinued operations which were included in the Group's consolidated financial statements (in thousands):

	For the year ended December 31,	
	2019	2020
	US$	US$
Net revenues		
Live streaming	1,155,066	326,094
Others	57,634	19,707
Total net revenues	1,212,700	345,801
Cost of revenues[(1)]	(998,289)	(277,954)
Gross profit	214,411	67,847
Operating expenses[(1)]		
Research and development expenses	(73,527)	(22,477)
Sales and marketing expenses	(63,510)	(15,279)
General and administrative expenses	(51,156)	(20,743)
Total operating expenses	(188,193)	(58,499)
Other income	11,500	1,624
Operating income	37,718	10,972
Interest income and investment income	44,076	12,293
Foreign currency exchange gains (losses), net	166	(205)
Gain on fair value changes of investments	—	310
Other non-operating expenses		(1,435)
Income before income tax expenses	81,960	21,935
Income tax expenses	(13,910)	(5,384)
Net income	68,050	16,551
Share of income in equity method investments, net of income taxes	(394)	(145)
Gain on disposal, net of tax	—	902,777
Net income from discontinued operations	67,656	919,183

	For the year ended December 31,	
	2019	2020
	US$	US$
Net cash provided by discontinued operating activities	283,835	19,506
Net cash (used in) provided by discontinued investing activities	(534,853)	85,552
Net cash provided by discontinued financing activities	308,219	1,232

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

3. Discontinued operations (continued)

(b) Disposal of Huya (continued)

(1) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

	For the year ended December 31,	
	2019	2020
	US$	US$
Cost of revenues	4,545	2,354
Research and development expenses	12,433	5,309
Sales and marketing expenses	852	375
General and administrative expenses	22,969	13,558

(c) Reconciliation with net income from discontinued operations presented in the consolidated statements of comprehensive income is as below:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net income from discontinued operations of YY Live (Note 3(a))	547,612	482,487	35,567
Net income from discontinued operations of Huya (Note 3(b))	67,656	919,183	—
Net income from discontinued operations as presented in the consolidated statements of comprehensive income	615,268	1,401,670	35,567

4. Certain risks and concentration

(a) PRC regulations

Foreign ownership of internet-based businesses is subject to significant restrictions under the current PRC laws and regulations. The PRC government regulates internet access, the distribution of online information and the conduct of online commerce through strict business licensing requirements and other government regulations. These laws and regulations also limit foreign ownership in PRC companies that provide internet information distribution services. Specifically, foreign ownership in an internet information provider or other value-added telecommunication service providers may not exceed 50%. Foreigners or foreign invested enterprises are currently not able to apply for the required licenses for operating online games in the PRC. The Company is incorporated in the Cayman Islands and accordingly, the Company is considered as a foreign invested enterprise under PRC law.

As mentioned in Note 1(d), in order to comply with the PRC laws restricting foreign ownership in the online business in China, the Group operates the online business in China through contractual arrangements with its principal VIEs, namely Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan. In January 2021, Mr. David Xueling Li and other nominal shareholder transferred in total 100% of the nominee shares of Guangzhou BaiGuoYuan to Guangzhou Qianxun Network Technology Co., Ltd. (“Guangzhou Qianxun”), a VIE of the Company. In Feburary 2021, Beijing Tuda and Mr. David Xueling Li transferred their respective nominee shares in Guangzhou Huaduo to Guangzhou Tuyue Network Technology Co., Ltd. (“Guangzhou Tuyue”), a VIE of the Company. As of December 31, 2021, Guangzhou Tuyue holds the majority of nominee shares of Guanghzou Huaduo., and Guangzhou Qianxun holds 100% of the nominee shares of Guangzhou BaiGuoYuan.

4. Certain risks and concentration (continued)

(a) PRC regulations (continued)

Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan hold the licenses and permits necessary to conduct its internet value-added services in the PRC. If the Company had direct ownership of the VIE, it would be able to exercise its rights as a shareholder to effect changes in the board of directors, which in turn could affect changes at the management level, subject to any applicable fiduciary obligations. However, under the current contractual arrangements, it relies on the VIE and its shareholders' performance of their contractual obligations to exercise effective control. In addition, the Group's contractual agreements have terms range from 10 to 30 years, which are subject to Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology's unilateral termination right. Under the respective service agreements, Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology will provide services including technology support, technology services, business support and consulting services to Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan, respectively, in exchange for service fees. The amount of service fees payable is determined by various factors, including (a) a percentage of Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan's revenues or earnings, and (b) the expenses that Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology incur for providing such services. Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology may charge up to 100% of the income in Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan and a multiple of the expenses incurred for providing such services, as determined by Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology, respectively, from time to time. The service fees payable by Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan to Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology are determined to be up to 100% of the profits of Guangzhou Huaduo, Guangzhou Huya and Guangzhou BaiGuoYuan, with the timing of such payment to be determined at the sole discretion of Beijing Huanju Shidai, Huya Technology and BaiGuoYuan Technology. If fees were incurred, it would be significant to the Company and the operating companies' economic performance because it will be incurred and paid at up to 100% of the earnings of the VIE. Fees incurred would be remitted, subject to further PRC restrictions. None of the VIEs or their shareholders are entitled to terminate the contracts prior to the expiration date, unless under remote circumstances such as a material breach of agreement or bankruptcy as it pertains to the service and business operation agreements and their amendment.

For the years ended December 31, 2019, 2020 and 2021, the Company's wholly owned subsidiaries, mainly including Beijing Huanju Shidai, BaiGuoYuan Technology and Huya Technology, determined the service fees which were charged to the Group's VIEs, respectively. Huya Technology ceased to be a subsidiary of the Company upon the disposal of Huya on April 3, 2020.

Further, the Group believes that the contractual arrangements among the Company's subsidiaries (mainly including Beijing Huanju Shidai, BaiGuoYuan Technology and Huya Technology), the VIEs, and the VIE's shareholders are in compliance with PRC laws and are legally enforceable and binding. However, there are substantial uncertainties regarding the interpretation and application of PRC laws and regulations including those that govern the contractual arrangements, which could limit the Group's ability to enforce these contractual arrangements and if the nominee shareholders of the VIEs were to reduce their interests in the Group, their interest may diverge from that of the Group and that may potentially increase the risk that they would seek to act contrary to the contractual arrangements.

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(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

4. Certain risks and concentration (continued)

(a) PRC regulations (continued)

In March 2019, the National People's Congress enacted PRC Foreign Investment Law which would be effective starting from January 1, 2020. The Foreign Investment Law does not explicitly classify contractual arrangements as a form of foreign investment, but it contains a catch-all provision under the definition of "foreign investment," which includes investments made by foreign investors through means stipulated in laws or administrative regulations or other methods prescribed by the State Council. Existing laws or administrative regulations remain unclear whether the contractual arrangements with variable interest entities will be deemed to be in violation of the market access requirements for foreign investment under the PRC laws and regulations. However, the possibility that such entities will be deemed as foreign invested enterprise and subject to relevant restrictions in the future shall not be excluded. If VIEs fall within the definition of foreign investment entities, the Group's ability to use the contractual arrangements with its VIEs and the Group's ability to conduct business through the VIEs could be severely limited. The Group's ability to control the VIEs also depends on the power of attorney that the wholly owned subsidiary of the Group has to vote on all matters requiring shareholder approval in the VIEs. As noted above, the Group believes these power of attorney are legally enforceable but may not be as effective as direct equity ownership. In addition, if the Group's corporate structure and the contractual arrangements with the VIEs through which the Group conducts its business in the PRC were found to be in violation of any existing or future PRC laws and regulations, the Group's relevant PRC regulatory authorities could:

- revoke or refuse to grant or renew the Group's business and operating licenses;
- restrict or prohibit related party transactions between the wholly owned subsidiary of the Group and the VIE;
- impose fines, confiscate income or other requirements which the Group may find difficult or impossible to comply with;
- require the Group to alter, discontinue or restrict its operations;
- restrict or prohibit the Group's ability to finance its operations, and;
- take other regulatory or enforcement actions against the Group that could be harmful to the Group's business.

The imposition of any of these restrictions or actions could result in a material adverse effect on the Group's ability to conduct its business. In such case, the Group may not be able to operate or control the VIEs, which may result in deconsolidation of the VIEs in the Group's consolidated financial statements. In the opinion of management, the likelihood for the Group to lose such ability is remote based on current facts and circumstances. The Group's operations depend on the VIEs to honor their contractual arrangements with the Group. These contractual arrangements are governed by PRC law and disputes arising out of these agreements are expected to be decided by arbitration in the PRC. The management believes that each of the contractual arrangements constitutes valid and legally binding obligations of each party to such contractual arrangements under PRC laws. However, the interpretation and implementation of the laws and regulations in the PRC and their application to an effect on the legality, binding effect and enforceability of contracts are subject to the discretion of competent PRC authorities, and therefore there is no assurance that relevant PRC authorities will take the same position as the Group herein in respect of the legality, binding effect and enforceability of each of the contractual arrangements. Meanwhile, since the PRC legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules are not always uniform and enforcement of these laws, regulations and rules involve uncertainties, which may limit legal protections available to the Group to enforce the contractual arrangements should the VIEs or the nominee shareholders of the VIEs fail to perform their obligations under those arrangements.

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(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

4. Certain risks and concentration (continued)

(a) PRC regulations (continued)

The following consolidated financial information of the Group's VIEs and VIEs' subsidiaries was included in the accompanying consolidated financial statements. For purposes of this presentation, activity within and between the VIEs and VIEs' subsidiaries have been eliminated, but transactions with other entities within the Group have been included without elimination. Presentation of the comparative data for 2019 and 2020 have been expanded to conform to the current year presentation.

	December 31,	
	2020	2021
	US$	US$
Assets		
Current assets		
Cash and cash equivalents	248,300	433,405
Restricted cash and cash equivalents	536	7,364
Short-term deposits	669,742	308,986
Restricted short-term deposits	30,652	—
Short-term investments	266,647	288,944
Accounts receivable, net	25,885	5,880
Amounts due from Group companies	364,025	263,373
Amounts due from related parties	1,704	9,684
Financing receivables, net	50	—
Prepayments and other current assets	55,593	101,173
Assets held for sale	75,839	—
Total current assets	1,738,973	1,418,809
Non-current assets		
Investments	381,867	235,277
Property and equipment, net	156,494	171,831
Land use rights, net	258,770	370,052
Intangible assets, net	84,236	58,893
Right of use asset, net	6,461	4,911
Other non-current assets	6,151	1,055
Assets held for sale	19,896	—
Total non-current assets	913,875	842,019
Total assets	2,652,848	2,260,828
Liabilities		
Current liabilities		
Accounts payable	16,045	14,200
Deferred revenue	17,140	13,873
Advances from customers	29	1,242
Income taxes payable	19,492	25,606
Accrued liabilities and other current liabilities	108,450	114,325
Amounts due to Group companies	151,073	131,887
Amounts due to related parties	2,274	1,024
Lease liabilities due within one year	4,702	3,077
Short-term loans	102,538	—
Liabilities held for sale	178,744	—
Total current liabilities	600,487	305,234
Non-current liabilities		
Lease liabilities	1,982	2,096
Deferred revenue	1,487	3,849
Deferred tax liabilities	10,866	9,105
Other non-current liabilities	—	7,372
Liabilities held for sale	4,415	—
Total non-current liabilities	18,750	22,422
Total liabilities	619,237	327,656

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4. Certain risks and concentration (continued)

(a) PRC regulations (continued)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net revenues from Group companies	29,581	79,609	109,618
Net revenues from third parties	283,044	396,343	447,471
Cost of sales from Group companies	(80,739)	(216,696)	(60,053)
Cost of sales from third parties	(200,860)	(298,715)	(347,674)
Total operating expenses	(232,406)	(514,889)	(293,959)
Other items of the consolidated statements of comprehensive income	31,035	23,244	22,305
Net loss from continuing operations	(170,345)	(531,104)	(122,292)

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Net cash provided by (used in) operating activities with Group companies	(31,178)	(344,858)	77,319
Net cash (used in) provided operating activities with third parities	(31,422)	(73,830)	153,715
Net cash used in investing activities with Group companies	(84,393)	(104,111)	(35,559)
Net cash provided by (used in) investing activities with third parities	(546,963)	(47,787)	170,112
Net cash provided by (used in) financing activities with Group companies	(51,848)	25,219	5,378
Net cash provided by (used in) financing activities with third parities	39,458	21,690	(97,198)
	(706,346)	(523,677)	273,767

Transactions between the VIE and other entities in the consolidated group

For the years ended December 31, 2019, 2020 and 2021, the VIEs earned inter-company revenues from sales of software in the amounts of nil, US$24,523 and nil, respectively. In addition, the VIEs recognized inter-company cost of revenues and operating expenses in the amounts of US$54,044, US$41,832 and US$80,402 for the years ended December 31, 2019, 2020 and 2021, respectively for the purchase of software. The VIEs also recognized inter-company cost of revenues and operating expenses in the amounts of US$77,682, US$447,271 and US$35,899 for the years ended December 31, 2019, 2020 and 2021, respectively for technical support services. All of these balances and transactions have been eliminated in consolidation. Unsettled balance related to technology service fees payable by VIEs to other group entities amounted to US$121,376 and US$66,811 as of December 31, 2020 and 2021, respectively.

Cash flows between the VIE and other entities in the consolidated group

For the years ended December 31, 2019, 2020 and 2021, cash paid by the VIEs to Group companies for the settlement of software transactions were US$43,829, US$53,696 and US$62,499, respectively. For the years ended December 31, 2019, 2020 and 2021, cash paid by the VIEs to Group companies for the settlement of technical support fees were US$57,474, US$369,897 and US$52,119, respectively. For the years ended December 31, 2019, 2020 and 2021, cash received by VIEs from Group companies were US$26,297, US$25,039 and US$129,440, respectively, for the revenues earned from Group companies. All of these cash flows have been eliminated in consolidation.

(b) Foreign exchange risk

The Group's overseas operations and related investing and financing activities are denominated in US$. The revenues and expenses of the Group's entities in the PRC are generally denominated in RMB and their assets and liabilities are denominated in RMB. The RMB is not freely convertible into foreign currencies. Remittances of foreign currencies into the PRC or remittances of RMB out

of the PRC as well as exchange between RMB and foreign currencies require approval by foreign exchange administrative authorities and certain supporting documentation. The State Administration for Foreign Exchange, under the authority of the People's Bank of China, controls the conversion of RMB into other currencies.

4. Certain risks and concentration (continued)

(c) Credit risk

Assets that potentially expose the Group to credit risk primarily consist of cash and cash equivalents, restricted cash and cash equivalents, short-term deposits, restricted short-term deposits, short-term investments, accounts receivable, financing receivables, amounts due from related parties and prepayments and other current assets.

As of December 31, 2020 and 2021, substantially all of the Group's cash and cash equivalents, restricted cash and cash equivalents, short-term deposits, restricted short-term deposits and short-term investments were placed with the PRC and international financial institutions. Management chooses these institutions because of their reputations and track records for stability, and their known large cash reserves, and management periodically reviews these institutions' reputations, track records, and reported reserves. Management expects that any additional institutions that the Group uses for its cash and bank deposits will be chosen with similar criteria for soundness. Nevertheless under the PRC law, it is required that a commercial bank in the PRC that holds third party cash deposits should maintain a certain percentage of total customer deposits taken in a statutory reserve fund for protecting the depositors' rights over their interests in deposited money. PRC banks are subject to a series of risk control regulatory standards; PRC bank regulatory authorities are empowered to take over the operation and management of any PRC bank that faces a material credit crisis. The Group believes that it is not exposed to unusual risks as these financial institutions are either PRC banks or international banks with high credit quality. The Group had not experienced any losses on its deposits of cash and cash equivalents and term deposits during the years ended December 31, 2019, 2020 and 2021 and believes that its credit risk to be minimal.

The risk with respect to accounts receivable is mitigated by credit evaluations the Group performs on the payment platforms, game platforms, customers and the ongoing monitoring process of outstanding balances.

The Group is exposed to default risk on its financing receivables. The Group conducts credit evaluations of customers in finance business, either on an individual or collective basis. The Group also considers the value of collateral assets when assessing the collectability of certain financing receivables. Credit risk is controlled by the application of credit approvals, limits and monitoring procedures.

Amounts due from related parties, prepayments and other current assets are typically unsecured. In evaluating the collectability of the balance, the Group considers many factors, including the related parties and third parties' repayment history and their credit-worthiness. An allowance for doubtful accounts is made when collection of the full amount is no longer probable.

5. Business combination

(a) Acquisition of Bigo

Immediately prior to this acquisition, the Company held 31.7% of equity interest of Bigo, a company which is primarily engaged in the video and audio broadcast business through its live-streaming applications and platforms all over the world. The Company had a contingent redemption right on its investment in Bigo, therefore the interest held by the Company did not meet the definition of in-substance common stock under ASC 323. As the investment in Bigo did not have readily determinable fair value, it was accounted for as an investment at cost less impairments, adjusted by observable price changes.

In February 2019, the Group entered into a share purchase agreement with Bigo and its shareholders and the transaction was completed on March 4, 2019. Under the agreement, the Group agreed to purchase all outstanding shares of Bigo that were not already owned by the Group. Pursuant to the agreement, the Company paid US$343.1 million in cash and issued 305,127,046 Class A common shares, which were outstanding, and 38,326,579 Class B common shares of the Company to Bigo's selling shareholders. In addition, the Company has also issued 8,761,450 Class A common shares for future grants to employees as share-based awards. The acquisition was completed on March 4, 2019 and is accounted for as a business combination. The Group believed that the acquisition of Bigo helped the Group create enhanced live streaming content, expand global footprint and offer world-class user experiences for global user community. Upon the completion of the acquisition, Bigo became a wholly-owned subsidiary of the Group.

The following table summarizes the components of the purchase consideration transferred based on the closing price of the Company's common share as of the acquisition date:

	As of acquisition date
	US$
Cash	343,062
Fair value of common shares issued	1,149,073
Fair value of previously held equity interest in Bigo	849,700
Elimination of preexisting amounts due from Bigo	48,174
Total consideration	2,390,009

The fair value of common shares issued above does not include post-acquisition share-based compensation amounting to US$88,047. Out of the 305,127,046 Class A common shares issued and outstanding, 38,042,760 shares are for the replacement awards to Bigo's employees to replace their original share-based awards. The post-acquisition share-based compensation of US$88,047 are share-based compensation subject to continuous employment and will be recognized as share-based compensation expenses over the remaining required service period.

Immediately before the acquisition, the amounts due from Bigo to the Company amounted to US$48,174. This amount due from Bigo was effectively eliminated upon the acquisition. The amount of the preexisting amounts due from Bigo of US$48,174 was included as part of the consideration.

In accordance with ASC 805, the Company's previously held equity interest in Bigo was re-measured to fair value on the acquisition date, and a re-measurement gain of US$396,094 was recognized as gain on fair value changes of investments. Acquisition-related costs of US$4,036 was recognized as general and administrative expenses.

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5. Business combination (continued)

(a) Acquisition of Bigo (continued)

The acquisition was accounted for as a business combination. The Group made estimates and judgements in determining the fair value of the assets acquired and liabilities assumed with the assistance from an independent valuation firm. The consideration was allocated on the acquisition date as follows:

	As of acquisition date US$	Amortization period
Net tangible assets acquired:		
-Cash and cash equivalents, restricted cash and cash equivalents and restricted short-term deposits	95,965	
-Accounts receivables	57,647	
-Other current assets	7,820	
-Property and equipment, net	43,853	
-Other non-current assets	26,076	
Identifiable intangible assets acquired:		
-Trademark	358,000	10 years
-Customer relationships	153,200	3 years
-Non-compete agreement	12,100	1 year
-Others	924	
Accrued liabilities and other liabilities	(172,539)	
Deferred tax liabilities	(47,258)	
Goodwill	1,854,221	
Total	2,390,009	

The Company estimated the fair value of acquired trademark using the relief from royalty method. The value is estimated as the present value of the after-tax cost savings at an appropriate discount rate. In terms of the fair value of the acquired customer relationships, the excess earnings method was used. The value is estimated as the present value of the revenues calculated at an appropriate discount rate. The Company's determination of the fair values of acquired trademark and customer relationships acquired involved the use of estimates and assumptions related to revenue growth rates, royalty rates, discount rates and attrition rates.

The goodwill was mainly attributable to intangible assets that cannot be recognized separately as identifiable assets under U.S. GAAP, and mainly comprised (a) the assembled work force and (b) the expected future growth, enhancing world-class user experiences and expansion in global markets as a result of the synergy resulting from the acquisition. The goodwill recognized was not expected to be deductible for income tax purpose.

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5. Business combination (continued)

(a) Acquisition of Bigo (continued)

Pro forma information of the acquisition

The following unaudited pro forma information summarizes the results of operations for the year ended December 31, 2019 of the Company as if the acquisition had occurred on January 1, 2019. The unaudited pro forma information includes: (i) amortization associated with estimates for the acquired intangible assets and corresponding deferred tax liability; (ii) recognition of the post-combination share-based compensation; (iii) removal of the transaction costs related to the acquisition; (iv) removal of the remeasurement gain of JOYY's previously held interests in Bigo; (v) removal of fair value loss on derivative liabilities related to Bigo's preferred shares; (vi) elimination of transaction between Bigo and the Company and (vii) the associated tax impact on these unaudited pro forma adjustments. The following pro forma financial information is presented for informational purpose only and is not necessarily indicative of the results that would have occurred had the acquisition been completed on January 1, 2019, nor is it indicative of future operating results.

	For the year ended December 31, 2019
	US$
Pro forma net revenues	998,828
Pro forma net loss	(498,127)

The amounts of revenues and earnings of Bigo since the acquisition date are disclosed in Note 33 "Segment Reporting".

(b) Other acquisition

During the second quarter 2021, the Company completed the acquisition of additional equity interests of an acquiree which is a global online platform operating on online for comics and novels whose major operations and users are outside of China. The consideration for this acquisition was settled by cash of US$9.6 million and transfer of approximately 19% equity interests in a previously wholly owned subsidiary of the Company which operates a multiuser social networking platform outside of China, to the original shareholders the acquiree. The Company held 25% of equity interests in this acquiree before the acquisition and the fair value of the previously held equity interest is considered part of the consideration of the acquisition.

Upon completion of the transaction, the Company's interest in the acquiree increased from 25% to 81% and started to consolidate the acquiree as a subsidiary with non-controlling interests.

The following table summarizes the components of the purchase consideration transferred based on the closing price of the Company's common share as of the acquisition date:

	As of acquisition date
	US$
Cash	9,611
Fair value of subsidiary's common share issued	53,810
Fair value of previously held equity interest in the acquiree	27,716
Total consideration	91,137

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5. Business combination (continued)

(b) Other acquisition (continued)

The acquisition was accounted for as a business combination. The Group made estimates and judgements in determining the fair value of the assets acquired and liabilities assumed with the assistance from an independent valuation firm. The consideration was allocated on the acquisition date as follows:

	As of acquisition date US$	Amortization period
Net tangible assets acquired:		
-Cash and cash equivalents	7,296	
-Accounts receivables	1,376	
-Other current assets	1,987	
-Property and equipment, net	142	
Identifiable intangible assets acquired:		
-Technology	11,917	6 years
-Trademark	11,839	6 years
-Customer relationships	903	3 years
Accounts payable	(2,268)	
Accrued liabilities and other liabilities	(1,579)	
Deferred tax liabilities	(4,069)	
Goodwill	84,925	
Non-controlling interests	(21,332)	
Total	91,137	

The Company estimated the fair value of acquired technology using the excess earnings method. The value is estimated as the present value of the revenues calculated at an appropriate discount rate. In terms of the fair value of the acquired trademark, the relief from royalty method was used. The value is estimated as the present value of the after-tax cost savings at an appropriate discount rate. The Company's determination of the fair values of acquired technology and trademark acquired involved the use of estimates and assumptions related to revenue growth rates, royalty rates, discount rates and attrition rates.

The goodwill was mainly attributable to intangible assets that cannot be recognized separately as identifiable assets under U.S. GAAP, and mainly comprised the assembled work force and the synergy resulting from the acquisition. The goodwill recognized was not expected to be deductible for income tax purpose.

6. Cash and cash equivalents and restricted cash and cash equivalents

Cash and cash equivalents represent cash on hand, demand deposits placed with banks or other financial institutions and all highly liquid investments with original maturities of three months or less. Cash and cash equivalents balance as of December 31, 2020 and 2021 primarily consist of the following currencies:

	December 31, 2020		**December 31, 2021**	
	Amount	**US$ equivalent**	**Amount**	**US$ equivalent**
US$	1,306,404	1,306,404	1,220,064	1,220,064
RMB	2,691,718	412,530	3,462,640	543,099
Others	N/A	23,815	N/A	74,022
Total		1,742,749		1,837,185

As of December 31, 2020 and 2021, the Group's restricted cash and cash equivalents were US$13,733 and US$297,022, respectively. The increase in restricted cash and cash equivalents as of December 31,2021 compared to December 31, 2020 was mainly attributable to a portion of the consideration which was received from Baidu and deposited in an escrow accounts owned by the Group, in accordance with the terms set forth in the agreement with Baidu to dispose YY Live business.

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7. Short-term deposits

Short-term deposits represent time deposits placed with banks with original maturities between three months and one year.The term deposits balance as of December 31, 2020 and 2021 primarily consist of the following currencies:

	December 31, 2020		December 31, 2021	
	Amount	US$ equivalent	Amount	US$ equivalent
RMB	4,470,002	685,068	2,170,000	340,355
US$	640,000	640,000	1,263,843	1,263,843
Total		1,325,068		1,604,198

8. Restricted short-term deposits

As of December 31, 2020, the Group's restricted short-term deposits were US$31,489, which was mainly pledged as collateral for the banking facilities of US$31million.

As of December 31, 2021, the Group's restricted short-term deposits were US$285, which was deposits for opening credit card accounts.

9. Accounts receivable, net

	December 31,	
	2020	2021
	US$	US$
Accounts receivable, gross	150,386	126,798
Less: allowance for expected credit loss of receivables	(7,387)	(12,426)
Accounts receivable, net	142,999	114,372

The following table summarizes the details of the Group's allowance for doubtful accounts:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Balance at the beginning of the year	(1,081)	(9)	(7,387)
Adoption of ASC326	—	(652)	—
Additions charged to general and administrative expenses, net	(13)	(6,726)	(5,039)
Write-off during the year	1,085	—	—
Balance at the end of the year	(9)	(7,387)	(12,426)

10. Financing receivables, net

Financing receivables consist of the following:

	December 31,	
	2020	2021
	US$	US$
Financing receivables, gross		
Micro-credit personal loans	19,971	20,317
Corporate loans	30,031	—
Total	50,002	20,317
Less: allowance for expected credit loss on financing receivables	(30,114)	(20,317)
Financing receivables, net	19,888	—
Current portion	172	—
Non-current portion	19,716	—

As of December 31, 2020 and 2021, micro-credit personal loans were not guaranteed.

The following table presents the aging of gross financing receivables as of December 31, 2020 and 2021.

	1-90 days past due	91-180 days past due	181-360 days past due	over 1 year past due	Total past due	Current	Total financing receivables
December 31, 2020							
Micro-credit personal loans (1)	—	4	3,185	16,782	19,971	—	19,971
Corporate loans (2)	—	—	—	29,908	29,908	123	30,031
	—	4	3,185	46,690	49,879	123	50,002
December 31, 2021							
Micro-credit personal loans (1)	—	—	—	20,317	20,317	—	20,317

Allowance for expected credit loss for the Group's financing receivables of US$24,811, US$676 and reversal of allowance for expected credit loss of US$70 was recognized in general and administrative expenses for the year ended December 31, 2019, 2020 and 2021, respectively.

(1) Micro-credit personal loans

Micro-credit personal loans provided by the Group are non-accrual financing receivables related to personal loans amounted to US$19,971 and US$20,317 as of December 31, 2020 and 2021, respectively, and were past due for over 90 days.

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10. Financing receivables, net (continued)

(2) Corporate loans

A majority of the Group's corporate loan business was in the form of sale-and-leaseback arrangements, under which the Group purchases equipment from third party companies and lease back the equipment to the sellers. In 2019, one lessee was unable to repay the principal amount of approximately US$2,416 due in January and was default. The Group has brought certain lawsuits against this lessee to the court, claiming the lessee to repay all the outstanding amount. Upon the date of the issuance of the consolidated financial statements for the year ended December 31, 2019, the court has passed the first instance judgement on all of these lawsuits, which supported the Group's claim and ordered the lessee to repay all the outstanding amounts due to the Group. Furthermore, the additional assets of the lessee or its related entity was pledged and preserved as collateral. Based on the Group's assessment on the lessee's finance condition and the recoverable amount from the collateral, the financial receivable cannot be fully recovered. As a result, an allowance for expected credit loss of US$10,430 was recognized in general and administrative expenses for the year ended December 31, 2019 against the carrying value of the financing receivables. In 2020 and 2021, based on the Group's assessment on the fair value of the pledged assets as of December 31, 2020 and 2021, no further impairment charge was recognized against the carrying value of the financing receivables for the year ended December 31, 2020 and 2021. The Group reclassified the amount due from this lessee from financing receivables to prepayments and other current assets in 2021 considering the fact that the original term of this receivable has ended by December 31, 2021 and the nature of this receivable has changed from financing receivables to other receivables as the expected means of settlement of the receivable has changed. Net amount of the receivable as of December 31, 2021 reclassified to prepayment and other current assets was US$20,177, which is the difference between the gross amount of US$30,607 and allowance of US$10,430 as of December 31, 2021. The Group has ceased the corporate loan business during 2019.

The financing receivable was placed on non-accrual status. The Group has decided not to further develop corporate loan business so as to avoid further potential risk arising from such business.

Movement of allowance for expected credit loss on financing receivables (micro-credit personal loans only) is as follows:

	For the year ended December 31,	
	2020	**2021**
	US$	US$
Balance at the beginning of the year	(26,772)	(30,114)
Adoption of ASC326	(724)	—
Addition for the year	(2,618)	(633)
Reclassification to prepayments and other current assets	—	10,430
Balance at the end of the year	(30,114)	(20,317)

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11. Prepayments and other current assets

	December 31,	
	2020	**2021**
	US$	US$
Interests receivable	36,004	22,082
Value added taxes to be deducted	19,326	28,090
Receivables from payment platforms	13,633	24,512
Employee advances	3,692	4,073
Prepayments and deposits to vendors and content providers	6,547	6,126
Deposits	5,611	5,831
Loans to third parties	99	7,604
Amount due from a lessee of sale-and-leaseback arrangement - net (Note 10)	—	20,177
Net assets subject to disposal related to YY Live (Note 3(a))	—	38,194
Others	17,960	57,044
Total	102,872	213,733

12. Investments

	December 31,	
	2020	**2021**
	US$	US$
Equity investments accounted for using the equity method (i)	832,143	850,557
Equity investments with readily determinable fair values (ii)	184,968	25,480
Equity investments without readily determinable fair values (iii)	221,243	146,418
Available-for-sale debt investment (iv)	1,000	—
Total	1,239,354	1,022,455

(i) Investments have been accounted for under the equity method where the Group has significant influence on these investees and the investments are considered as in-substance common shares.

In 2020 and 2021, the Group acquired minority stakes in a number of privately-held entities with total consideration of US$87,212 and US$56,336, respectively. Increase in the amounts of investments in 2020 was mainly attributable to the Group's investment in Huya. On April 3, 2020, Huya ceased to be a subsidiary of the Company and the Company deconsolidated its related interest and recognized its investment in Huya as an equity method investment (Note 3(b)). The Company further disposed of certain equity interest in Huya in August 2020 (Note 1(a)) and also deem-disposed of certain interest of Huya's equity interest as a result of the vesting of Huya's share-based awards, resulting in a net gain from the disposal and deemed disposal of approximately US$258,564 in 2020 and a net loss from the deemed disposal of approximately US$5,450 in 2021.

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12. Investments (continued)

The following tables set forth the summarized financial information of the Group's equity method investments:

	December 31,	
	2020	2021
	US$	US$
Current assets	1,948,075	2,223,447
Non-current assets	302,915	552,085
Current liabilities	447,148	601,688
Non-current liabilities	42,817	39,719

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Revenues	110,099	1,405,623	2,082,821
Gross profit	91,040	386,810	466,970
Net income (loss)	31,970	23,563	(81,953)
Net income (loss) attributable to the investees	31,972	23,563	(81,953)

(ii) The Group does not have the ability to exercise significant influence over these investments. Therefore, it has been precluded from applying the equity method of accounting.

In 2020, the Group reclassified equity investments without readily determinable fair values of US$142,526, including fair value gain of US$115,137 for the year ended December 31, 2020,to equity investments with readily determinable fair values since quoted prices of the investees from active markets could be observed as these investees became listed in 2020.

In 2020, the Group partially disposed of an investment with readily determinable fair values for a cash consideration of US$2,406. In 2021, the Group disposed or partially disposed of certain investments with readily determinable fair values for a cash consideration of US$128,263.

In 2019, 2020 and 2021, fair value loss of US$3,060, fair value gain of US$144,634 and fair value loss of US$32,773 related to investments with readily determinable fair values were recognized in the consolidated statements of comprehensive income (Note 29), respectively.

(iii) Equity securities without readily determinable fair values and over which the Company has neither significant influence nor control through investments in common stock or in-substance common stock.

In 2020 and 2021, the Group acquired minority preferred shares or ordinary shares of a number of privately-held entities with total consideration of US$94,545 and US$38,806, respectively. The ownership interests were less than 20% of the investees' total equities or the ownership interests redeemable upon condition. These equity investments are not considered as debt securities or equity securities that have readily determinable fair values. Accordingly the Company elected to account for these investments at cost less impairments, adjusted by observable price changes.

In 2019, the Group completed the acquisition of the remaining 68.3% of equity interests in Bigo and Bigo became a wholly owned subsidiary of the Group. Therefore, the previously held 31.7% of equity interests in Bigo, which was classified as equity investments without readily determinable fair value, was derecognized. Please refer to Note 5(a) for the acquisition of Bigo.

12. Investments (continued)

In 2020, the Group partially disposed of an investment without readily determinable fair values, with a consideration of US$20,000. In 2021, the Group disposed certain investments without readily determinable fair values, with a consideration of US$29,050 in total.

In 2021, the Group disposed of an equity investment accounted for using the equity method and reinvested on the investment by acquiring majority of equity interests of its overseas entity that became a subsidiary of the Group. Accordingly, the Group recorded an equity investment held by this subsidiary as equity investment without readily determinable fair values amounting to US$51,775 as of December 31, 2021.

In 2019, fair value gain of US$394,919 due to the observable price change, were recognized in gain on fair value changes of investments (Note 29), which was mainly due to gain on the fair value change on the investment in Bigo before the Company's acquisition of Bigo. Out of the fair value gain of US$394,919 for the year ended December 31, 2019, fair value gain of US$397,589 was realized and fair value loss of US$2,670 was unrealized. In 2020, fair value gain of US$14,543 due to the observable price change, were recognized in gain on fair value changes of investments (Note 29).Out of the fair value gain of US$14,543 for the year ended December 31, 2020, fair value gain of US$15,498 was unrealized and fair value loss of US$955 was realized. In 2021, fair value gain of US$14,045 due to the observable price change, were recognized in gain on fair value changes of investments (Note 29). Out of the fair value gain of US$14,045 for the year ended December 31, 2021, fair value gain of US$1,339 was unrealized and fair value gain of US$12,706 was realized.

The Group assesses the existence of indicators for other-than-temporary impairment of the investments by considering factors including, but not limited to, current economic and market conditions, the operating performance of the entities including current earnings trends and other entity-specific information. In 2019, 2020 and 2021, based on the Group's assessment, an impairment charge of US$8,870, US$6,186 and US$93,632 was recognized in general and administrative expenses, respectively, against the carrying value of the investments due to significant deterioration in earnings or unexpected changes in business prospects of the investees as compared to the original investment plans.

(iv) In 2020, the Group entered into convertible bond agreement to acquire a convertible bond issued by a private company with a total consideration of US$1,000. The Group recorded this investment as an available-for-sale debt investment which is measured at fair value since the convertible bond is redeemable at the Group's option. In 2021, the Group has recognized full impairment against this convertible bond considering the recoverability of this convertible bond.

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13. Property and equipment, net

Property and equipment consists of the following:

	December 31,	
	2020	**2021**
	US$	US$
Gross carrying amount		
Servers, computers and equipment	301,671	319,393
Buildings	153,093	158,119
Construction in progress	69,890	96,552
Decoration of buildings	15,795	16,194
Leasehold improvements	8,966	8,210
Motor vehicles	6,626	6,585
Furniture, fixture and office equipment	4,788	5,229
Total	560,829	610,282
Less: accumulated depreciation	(159,168)	(244,890)
Property and equipment, net	401,661	365,392

Depreciation expense for the years ended December 31, 2019, 2020 and 2021 were US$40,022, US$77,464 and US$108,686, respectively.

14. Land use rights, net

Land use rights consist of the following:

	December 31,	
	2020	**2021**
	US$	US$
Gross carrying amount	294,957	415,970
Less: accumulated amortization	(36,187)	(45,918)
Land use rights, net	258,770	370,052

Amortization expense for the years ended December 31, 2019, 2020 and 2021 were US$6,981, US$6,957 and US$8,607, respectively.

The estimated amortization expenses for each of the following five years are as follows:

	Amortization expense of land use rights
	US$
2022	9,102
2023	9,102
2024	9,102
2025	9,102
2026	9,102

15. Intangible assets, net

The following table summarizes the Group's intangible assets:

	December 31,	
	2020	2021
	US$	US$
Gross carrying amount		
Trademark	359,976	371,975
Customer relationships	153,976	154,906
Non-compete agreement	12,100	12,100
Software	8,473	8,941
Operating rights	7,088	7,255
License	9,721	9,949
Technology	2,707	14,770
Domain names	1,197	1,518
Others	1,413	1,415
Total of gross carrying amount	556,651	582,829
Less: accumulated amortization		
Trademark	(65,649)	(102,815)
Customer relationships	(115,453)	(133,921)
Non-compete agreement	(12,100)	(12,100)
Software	(7,894)	(8,270)
Operating rights	(6,980)	(7,144)
License	(702)	(1,382)
Technology	(1,789)	(2,988)
Domain names	(538)	(644)
Others	(116)	(258)
Total accumulated amortization	(211,221)	(269,522)
Less: accumulated impairment	(1,216)	(1,225)
Intangible assets, net	344,214	312,082

Amortization expense for the years ended December 31, 2019, 2020 and 2021 were US$94,510, US$102,465 and US$58,626 respectively.

15. Intangible assets, net (continued)

The estimated amortization expenses for each of the following five years are as follows:

	Amortization expense of intangible assets
	US$
2022	50,749
2023	50,634
2024	42,623
2025	40,953
2026	40,943

The weighted average amortization periods of intangible assets as of December 31, 2020 and 2021 are as below:

	December 31,	
	2020	**2021**
Trademark	10 years	10 years
Customer relationships	3 years	3 years
License	15 years	15 years
Non-compete agreement	1 year	1 year
Operating rights	2 years	2 years
Software	3 years	3 years
Domain names	14 years	15 years
Technology	5 years	6 years
Others	10 years	10 years

16. Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2020 and 2021 are as follows:

	All other	**Bigo**	**Total**
	US$	US$	US$
Balance as of December 31, 2019 (i)	1,688	1,854,221	1,855,909
Increase in goodwill related to acquisition	16,067	—	16,067
Foreign currency translation adjustments	107	—	107
Balance as of December 31, 2020	17,862	1,854,221	1,872,083
Increase in goodwill related to acquisition (ii)	84,925	—	84,925
Foreign currency translation adjustments	1,255	—	1,255
Balance as of December 31, 2021	104,042	1,854,221	1,958,263

(i) The increase in goodwill in 2019 was related to the acquisition of Bigo. Please refer to Note 5(a) for the acquisition of Bigo.

The Group performs its annual goodwill impairment test of each reporting unit in the fourth quarter, or more frequently, if certain events or circumstances warrant. Events or changes in circumstances which might indicate potential impairment in goodwill include the entity-specific factors, including, but not limited to, stock price volatility, market capitalization relative to net book value, and projected revenue, market growth and operating results.

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16. Goodwill (continued)

The Group performed a goodwill impairment analysis in the fourth quarter of 2019, 2020 and 2021. When determining the fair value of the Bigo reporting unit, the Group used the income approach. The income approach determines fair value based on discounted cash flow models derived from the reporting units' long-term forecasts which included a five-year future cash flow projection and an estimated terminal value for the impairment analysis of 2021. The discounted cash flow model included a number of significant unobservable inputs. Key assumptions used to determine the estimated fair value include: (a) the future cash flows forecasts including expected revenue growth, (b) an estimated terminal value using a terminal year long-term future growth rate determined based on the growth prospects of the reporting unit; and (c) a discount rate that reflects the weighted-average cost of capital adjusted for the relevant risk associated with each reporting unit's operations and the uncertainty inherent in the Group's internally developed forecasts. Based on the Group's assessment, the fair value of Bigo reporting unit exceeded their carrying value by around 1%, 10% and 10% of the carrying value of the Bigo reporting unit in 2019, 2020 and 2021, respectively. Therefore, no impairment for goodwill recognized for the years ended December 31, 2019, 2020 and 2021.

(ii) The increase in goodwill in 2021 was related to the acquisition in Note 5(b).

17. Deferred revenue

	December 31,	
	2020	**2021**
	US$	US$
Deferred revenue, current		
Live streaming	63,450	58,425
Others	3,780	2,485
Total current deferred revenue	67,230	60,910
Deferred revenue, non-current		
Live streaming	2,529	5,931
Others	603	491
Total non-current deferred revenue	3,132	6,422

18. Accrued liabilities and other current liabilities

	December 31,	
	2020	**2021**
	US$	US$
Revenue sharing fees and content costs	121,083	129,717
Salaries and welfare	112,217	99,725
Marketing and promotion expenses	95,261	58,854
Value added taxes and other taxes payable	88,215	137,142
Bandwidth costs	29,986	19,746
Consideration received related to disposal of YY Live (Note 3(a))	—	1,862,750
Others	37,688	37,904
Total	484,450	2,345,838

19. Short-term loans

	December 31,	
	2020	**2021**
	US$	US$
Short-term loans	112,549	—

The Group entered into several agreements with banks, pursuant to which the Group borrowed loans with total principal amount of RMB693 million (equivalent to US$106 million) and US$6.3 million within a banking facility of RMB546 million (equivalent to US$84 million) and US$95 million in 2020, respectively. These loans were all with a maturity of less than one year and the annual interest rates ranged from 1.36% to 3.90%. Short-term deposits of RMB200 million (equivalent to US$31 million) were pledged as collateral for the banking facilities, which were classified as restricted short-term deposits.

20. Convertible bonds

	December 31,	
	2020	**2021**
	US$	US$
Non-current		
2025 Convertible Senior Notes	410,614	463,319
2026 Convertible Senior Notes	368,611	460,758
Total	779,225	924,077

On June 19, 2019, the Company issued Convertible Senior Notes due 2025 with principal amount of US$500 million (the “Notes due 2025”) and Convertible Senior Notes due 2026 with principal amount of US$500 million (the “Notes due 2026”) (collective the “Notes”). The Notes due 2025 and Notes due 2026 bear interest at a coupon rate of 0.75% and 1.375% per year, respectively, and both of them are payable semi-annually in arrears on June 15 and December 15 of each year, beginning on December 15, 2019. The Notes due 2025 will mature on June 15, 2025 and the Notes due 2026 will mature on June 15, 2026. The Notes due 2025 and the Notes due 2026 may be converted, under certain circumstances, based on an initial conversion rate of 10.4271 ADS per US$1,000 principal amount of the Notes (equivalent to an initial conversion price of approximately US$95.9 per ADS).

The Notes due 2025 and Notes due 2026 are not redeemable prior to their maturity date, except that the holders of the Notes (the “Holders”) have a noncontingent option to require the Company to repurchase for cash all or any portion of their Notes on June 15, 2023 and June 15, 2024, respectively. The repurchase price will equal 100% of the principal amount of the Notes to be repurchased plus accrued and unpaid interest, if any, to, but excluding, the repurchase date.

Upon conversion, the Company may deliver ADS, cash, or a combination of ADS and cash at the option of the Company itself. Therefore, the Notes due 2025 and Notes due 2026 contains cash conversion features, which was an equity component and need to be bifurcated from the debt component of the Notes. Determination of the carrying amount of the debt component was based on the fair value of a similar debt instrument excluding the embedded conversion feature, by using discounted cash flow method. The equity component related to conversion features were recognized by ascribing the difference between the proceeds and the fair value of the debt component in Additional paid-in capital.

The net proceeds to the Company from the issuance of the Notes due 2025 were US$491 million. Debt issuance costs of the Notes due 2025 were US$9 million. Out of the debt issuance costs, US$7 million was amortized to interest expense from the issuance date (June 19, 2019) to the first put date of the Notes (June 15, 2023) and US$2 million was allocated as deduction to the equity component. The net proceeds to the Company from the issuance of the Notes due 2026 were US$491 million. Debt issuance costs of the Notes due 2026 were US$9 million. Out of the debt issuance costs, US$6 million was amortized to interest expense from the issuance date (June 19, 2019) to the first put date of the Notes (June 15, 2024) and US$3 million was allocated as deduction to the equity component.

20. Convertible bonds (continued)

The value of Notes due 2025 and Notes due 2026 is initially measured by the cash received after deducting the issuance cost and the bifurcation of the conversion features. The Notes due 2025 and Notes due 2026 are subsequently stated at amortized cost. The difference between the principal amount of the Notes due 2025 and Notes due 2026 and the amount of the proceeds allocated to the debt component plus the issuance costs are regarded as a debt discount, which is subsequently amortized through interest expense over the Notes due 2025 and Notes due 2026's expected life using the interest method, respectively.

On January 1, 2021, the Company early adopted ASU 2020-06, "Accounting for Convertible Instruments and Contracts in an Entity's Own Equity" using modified-retrospective transition approach. Pursuant to ASU 2020-06, the embedded conversion features no longer are separated from the host contract for convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, Derivatives and Hedging, or that do not result in substantial premiums accounted for as paid-in capital. Consequently, a convertible debt instrument will be accounted for as a single liability measured at its amortized cost as long as no other features require bifurcation and recognition as derivatives. Following the adoption of this guidance, the amount previously allocated to additional paid-in capital was reclassified as a liability and a cumulative effect adjustment of US$86.7 million was credited to retained earnings as of January 1, 2021.

During 2021, the Company recognized a net gain on extinguishment of debt of US$4.0 million net of the write-off of associated unamortized deferred loan costs through repayment of US$71.1 million of the Notes at a cost of US$66.7 million.

As of December 31,2020 and 2021, US$779.2 million and US$924.1 million have been accounted for as the value of the convertible bonds in non-current liabilities. Interest expense related to the Notes due 2025 and Notes due 2026 recognized during the years ended December 31, 2020 and 2021 was US$71,898 and US$13,332, respectively.

Concurrently with the issuance of the Notes, the Company purchased a capped call option ("Purchased Call Option") in the amount of US$77,000, in order to mitigate the potential future economic dilution associated with the conversion of the Notes and to increase the initial conversion price to US$127.9 per ADS. Counterparty agreed to sell to the Company up to approximately 10.4 million ADS, which is the number of ADS initially issuable upon conversion of the Notes in full, at a price of US$95.9 per ADS. The Purchased Call Option will be settled in ADSs and will terminate upon the maturity date of the Notes. Settlement of the Purchased Call Option in ADSs, based on the number of ADSs issued upon conversion of the Notes, on the expiration date would result in the Company receiving shares equivalent to the number of shares issuable by the Company upon conversion of the Notes. In accordance with ASC 815-10-15-83, the Purchased Call Option meets the definition of a derivative instrument. However, the scope exception in accordance with ASC 815-10-15-74 applies to the Purchased Call Option as it is indexed to its own stock, and the Purchased Call Option meets the requirements of ASC 815 and would be classified in stockholders' equity, therefore, the cost paid for Purchased Call Option was accounted for within stockholders' equity, and subsequent changes in fair value will not be recorded.

21. Cost of revenues

	For the year ended December 31,		
	2019	**2020**	**2021**
	US$	US$	US$
Revenue sharing fees and content costs	305,647	812,706	1,158,435
Payment handling costs	94,127	190,583	212,655
Bandwidth costs	101,957	120,419	96,536
Salary and welfare	56,430	102,330	116,679
Depreciation and amortization	29,480	61,021	87,339
Technical service fee	43,893	59,325	55,874
Share-based compensation	5,932	5,797	8,089
Other costs	19,454	25,965	45,543
Total	656,920	1,378,146	1,781,150

22. Other income

	For the year ended December 31,		
	2019	**2020**	**2021**
	US$	US$	US$
Government grants	4,514	6,518	16,947
Others	1,160	1,577	3,429
Total	5,674	8,095	20,376

23. Income tax

(i) Cayman Islands

Under the current tax laws of Cayman Islands, the Company and its subsidiaries are not subject to tax on income or capital gains. Besides, upon payment of dividends by the Company to its shareholders, no Cayman Islands withholding tax will be imposed.

(ii) BVI

Duowan BVI is exempted from income tax on its foreign-derived income in the BVI.

(iii) Hong Kong profits tax

Under the current Hong Kong Inland Revenue Ordinance, the subsidiaries of the Group in Hong Kong are subject to 16.5% Hong Kong profit tax on its taxable income generated from operations in Hong Kong. Additionally, payments of dividends by the subsidiary incorporated in Hong Kong are not subject to any Hong Kong withholding tax.

(iv) Singapore

The income tax provision of the Group in respect of its international operations in Singapore was calculated at the tax rate of 17% on the assessable profits, based on the existing legislation, interpretations and practices in respect thereof.

23. Income tax (continued)

According to the Development and Expansion Incentive (the "Incentive") pursuant to the provisions of Part IIIB of the Economic Expansion Incentives (Relief from Income Tax) Act, Chapter 86, corporations engaging in new high-value-added projects, expanding or upgrading their operations, or undertaking incremental activities after their pioneer period may apply for their profits to be taxed at a reduced rate of not less than 5% for an initial period of up to ten years. The total tax relief period for each qualifying project or activity is subject to a maximum of 40 years (inclusive of the post-pioneer relief period previously granted, if applicable).

The Group's Singapore entities provided for income tax are as follows:

(1) Bigo Singapore applied for the Incentive and received approval in October 2018. Bigo Singapore is entitled to enjoy the beneficial tax rate of 5% as the Incentive for the years 2018 through 2022, and will need to re-apply for the Incentive qualification renewal in 2023.

(2) Other Singapore entities were subject to 17% income tax for the periods reported.

(v) PRC

The Company's subsidiaries and VIEs in China are governed by the Enterprise Income Tax Law ("EIT Law"), which became effective on January 1, 2008. Pursuant to the EIT Law and its implementation rules, enterprises in China are generally subject to tax at a statutory rate of 25%. Certified High and New Technology Enterprises ("HNTE") are entitled to a favorable tax rate of 15%, but need to re-apply every three years. During this three-year period, an HNTE must conduct a qualification self-review each year to ensure it meets the HNTE criteria and is eligible for the 15% preferential tax rate for that year. If an HNTE fails to meet the criteria for qualification in any year, the enterprise cannot enjoy the preferential tax rate in that year, and must instead use the regular 25% EIT rate.

Enterprises qualified as software enterprises can enjoy an income tax exemption for two years beginning with their first profitable year and a 50% tax reduction to the applicable tax rate for the subsequent three years. An entity that qualifies as a "Key National Software Enterprise" (a "KNSE") is entitled to a further reduced preferential income tax rate of 10%. Enterprises wishing to enjoy the status of a Software Enterprise or a KNSE must perform a self-assessment each year to ensure they meet the criteria for qualification and file required supporting documents with the tax authorities before adopting the preferential EIT rates. These enterprises will be subject to the tax authorities' assessment each year as to whether they are entitled to use the relevant preferential EIT treatments. If at any time during the preferential tax treatment years an enterprise uses the preferential EIT rates but the relevant authorities determine that it fails to meet applicable criteria for qualification, the relevant authorities may revoke the enterprise's Software Enterprise/KNSE status.

The EIT Law also provides that an enterprise established under the laws of a foreign country or region but whose "de facto management body" is located in the PRC be treated as a resident enterprise for PRC tax purposes and consequently be subject to the PRC income tax at the rate of 25% for its global income. The Implementing Rules of the EIT Law merely define the location of the "de facto management body" as "the place where the exercising, in substance, of the overall management and control of the production and business operation, personnel, accounting, properties, etc., of a non-PRC company is located." Based on a review of surrounding facts and circumstances, the Group does not believe that it is likely that its entities registered outside of the PRC should be considered as resident enterprises for the PRC tax purposes.

23. Income tax (continued)

(v) PRC (continued)

The Group's principal PRC entities provided for enterprise income tax are as follows:

- Guangzhou Huaduo applied for the renewal of HNTE qualification and received approval in December 2019. Guangzhou Huaduo is entitled to continue to enjoy the beneficial tax rate of 15% as an HNTE for the years 2019 through 2021, and will need to re-apply for HNTE qualification renewal in 2022. Guangzhou Huaduo ceased to enjoy the beneficial tax rate of 15% as an HNTE since 2021.

- In 2018, Guangzhou Huanju Shidai was qualified as a KNSE after the relevant government authorities' assessment and was entitled to a preferential income tax rate of 10% and enjoyed an overall 15% preferential income tax rate as a HNTE from 2020. Guangzhou Huanju will need to re-apply for HNTE qualification renewal in 2022.

- Guangzhou BaiGuoYuan Network Technology Co., Ltd. was qualified as a Software Enterprise, and started to enjoy the zero preferential tax rate from 2018 to 2019 and 12.5% preferential tax rate beginning from 2020.

- Guangzhou BaiGuoYuan Information Technology Co., Ltd. was qualified as an HNTE in 2018. It is entitled to enjoy the preferential tax rate of 15% for the years 2018 through 2020, and will need to re-apply for HNTE qualification renewal in 2021.

- Other PRC subsidiaries and VIEs were mainly subject to 25% EIT for the periods reported.

According to a policy promulgated by the State Tax Bureau of the PRC and effective from 2008 onwards, enterprises engaged in research and development activities are entitled to claim an additional tax deduction amounting to 50% of the qualified research and development expenses incurred in determining its tax assessable profits for that year. The additional tax deducting amount of the qualified research and development expenses have been increased from 50% to 75%, effective from 2018 to 2020, according to a new tax incentives policy promulgated by the State Tax Bureau of the PRC in September 2018 ("Super Deduction").

Qualified subsidiaries and VIEs of the Group claimed the Super Deduction in ascertaining the tax assessable profits for the periods reported.

The EIT Law also imposes a withholding income tax of 10% on dividends distributed by an FIE to its immediate holding company outside of China, if such immediate holding company is considered as a non-resident enterprise without any establishment or place within China or if the received dividends have no connection with the establishment or place of such immediate holding company within China, unless such immediate holding company's jurisdiction of incorporation has a tax treaty with China that provides for a different withholding arrangement. The Cayman Islands, where the Company incorporated, does not have such tax treaty with China. According to the arrangement between the mainland China and Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion in August 2006, dividends paid by an FIE in China to its immediate holding company in Hong Kong will be subject to withholding tax at a rate of no more than 5% (if the foreign investor owns directly at least 25% of the shares of the FIE). In accordance with accounting guidance, all undistributed earnings are presumed to be transferred to the parent company and are subject to the withholding taxes. All FIEs are subject to the withholding tax from January 1, 2008. The presumption may be overcome if the Group has sufficient evidence to demonstrate that the undistributed dividends will be re-invested and the remittance of the dividends will be postponed indefinitely.

Aggregate undistributed earnings and reserves of the Group entities located in the PRC that are available for distribution to the Company as of December 31, 2020 and 2021 are approximately US$2,607,194 and US$4,930,397, respectively.

The Group has a plan to indefinitely reinvest its aggregate undistributed earnings and reserves and any future earnings in the PRC for use in the operation and expansion of its business. Accordingly, no deferred tax liability on 10% withholding tax of aggregate undistributed earnings and reserves of the Company's subsidiaries located in the PRC has been accrued that would be payable upon the distribution of those amounts to the Company as of December 31, 2020 and 2021.

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23. Income tax (continued)

Composition of income tax expense

The current and deferred portions of income tax expense included in the consolidated statements of comprehensive income are as follows:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
(Loss) income before income tax expenses			
PRC entities	(117,953)	(170,994)	(55,908)
Non-PRC entities	23,211	184,651	(21,681)
Total	(94,742)	13,657	(77,589)
Current income tax benefit (expenses)			
PRC entities	4,655	(6,278)	(15,026)
Non-PRC entities	(4,276)	(8,931)	(20,524)
Total	379	(15,209)	(35,550)
Deferred income tax benefit (expenses)			
PRC entities	4,843	(6,376)	1,013
Non-PRC entities	14,876	(6,240)	8,792
Total	19,719	(12,616)	9,805
Income tax benefit (expenses)			
PRC entities	9,498	(12,654)	(14,013)
Non-PRC entities	10,600	(15,171)	(11,732)
Total	20,098	(27,825)	(25,745)

Reconciliation of the differences between statutory tax rate and the effective tax rate

The reconciliation of total tax expense computed by applying the respective statutory income tax rate to pre-tax income is as follows:

	For the year ended December 31,		
	2019	2020	2021
Singapore statutory income tax rate (*)	17.0 %	17.0 %	17.0 %
Effect of tax holiday and preferential tax benefit	30.6 %	(163.2)%	20.9 %
Effect of different tax rates available to different jurisdictions (i)	24.0 %	(60.1)%	47.6 %
Permanent differences (ii)	(0.5)%	151.9 %	(66.3)%
Change in valuation allowance	(68.6)%	484.7 %	(95.2)%
Effect of Super Deduction available to the Group	18.7 %	(226.6)%	42.8 %
Effective income tax rate	21.2 %	203.7 %	(33.2)%

*: As a majority of the Group's businesses is subject to Singapore corporate tax rate, the reconciliation of tax expenses begins at Singapore statutory income tax rate.

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23. Income tax (continued)

Composition of income tax expense (continued)

(10) The effect of different tax rates available to different jurisdictions was mainly due to the re-measurement gain of the previously held equity interest in Bigo on the acquisition date incurred by Duowan BVI whose applicable tax rate is zero for the year ended December 31, 2019.

(11) Permanent differences mainly arise from expenses not deductible for tax purposes including primarily share-based compensation costs and expenses incurred by subsidiaries and VIEs.

Deferred tax assets and liabilities

Deferred taxes are measured using the enacted tax rates for the periods in which they are expected to be reversed. The tax effects of temporary differences that give rise to the deferred tax asset balances as of December 31, 2020 and 2021 are as follows:

	December 31,	
	2020	2021
	US$	US$
Deferred tax assets:		
Tax loss carried forward	123,884	176,009
Allowance for expected credit loss of receivable, accrued expense and others not currently deductible for tax purposes	35,969	33,341
Deferred revenue	4,576	5,346
Impairment of investment	3,607	7,632
Others	1,177	—
Valuation allowance (i)	(150,252)	(213,688)
Amounts offset by deferred tax liabilities	(18,961)	(8,640)
Total deferred tax assets, net	—	—
Deferred tax liabilities:		
Related to the fair value changes of investments	23,118	9,061
Related to acquired intangible assets	36,767	34,013
Others	1,498	1,780
Amounts offset by deferred tax assets	(18,961)	(8,640)
Total deferred tax liabilities, net	42,422	36,214

(i) Valuation allowance is provided against deferred tax assets when the Group determines that it is more likely than not that the deferred tax assets will not be utilized in the future. In making such determination, the Group considered factors including future taxable income exclusive of reversing temporary differences and tax loss carry forwards. Valuation allowance was provided for net operating loss carry forward because it was more likely than not that such deferred tax assets would not be realized based on the Group's estimate of its future taxable income. If events occur in the future that allow the Group to realize more of its deferred income tax than the presently recorded amounts, an adjustment to the valuation allowances will result in a decrease in tax expense when those events occur.

23. Income tax (continued)

Deferred tax assets and liabilities (continued)

Movement of valuation allowance

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Balance at beginning of the year	(24,980)	(87,106)	(150,252)
Additions	(78,269)	(96,629)	(119,999)
Reversals	16,143	33,483	56,563
Balance at end of the year	(87,106)	(150,252)	(213,688)

Tax loss carry forwards

As of December 31, 2021, total tax loss carry forwards of the Company's subsidiaries and VIEs in the PRC amounted to US$575,759, which were mainly generated by non-HNTEs. The tax losses in PRC can be carried forward for five years to offset future taxable profit, and the period was extended to 10 years for entities qualified as HNTEs in 2019 and thereafter. The tax losses of entities in the PRC will expire from 2022 to 2030, if not utilized. The accumulated tax losses of subsidiaries incorporated in Hong Kong, Singapore and other countries, subject to the agreement of the relevant tax authorities, of US$9,373, US$299,516 and US$104,119, respectively, are allowed to be carried forward to offset against future taxable profits. Such carry forward of tax losses in Hong Kong and Singapore have no time limit.

In accordance with Singapore Tax Administration Law, the Singapore tax authorities generally have up to four years to claw back underpaid tax if the year of assessment is 2008 onwards. Accordingly, tax filings of the Group's Singapore subsidiaries for tax years 2018 through 2021 remain subject to the review by the relevant Singapore tax authorities. There were no ongoing tax examinations as of December 31, 2021 by Singapore tax authorities.

In accordance with PRC Tax Administration Law on the Levying and Collection of Taxes, the PRC tax authorities generally have up to five years to claw back underpaid tax plus penalties and interest for PRC entities' tax filings. Accordingly, tax filings of the Group's PRC subsidiaries and VIEs for tax years 2017 through 2021 remain subject to the review by the relevant PRC tax authorities. There were no ongoing tax examinations as of December 31, 2021 by PRC tax authorities.

24. Mezzanine equity

In 2018, a subsidiary of the Group issued 500,000,000 shares of redeemable convertible preferred shares for cash consideration of US$50,000 to certain third-party investors. The Group classifies the redeemable convertible preferred shares as mezzanine equity and records accretion of redemption value in accordance with ASC 480-10. The Group used the interest method for the changes of redemption value over the period from the date of issuance to the earliest redemption date of the non-controlling interests. Accretion of redeemable convertible preferred shares to redemption value of US$5,000, US$5,000 and US$5,000 was recognized for the years ended December 31, 2019, 2020 and 2021.

25. Common shares and treasury shares

On August 13, 2019, the Company's board of directors approved a share repurchase programs (the "Share Repurchase Program"), pursuant to which the Company may repurchase from time to time at management's discretion, at prevailing market prices in the open market in accordance with Rule 10b-18 under the Securities Exchange Act of 1934, up to US$300 million in total of the Company's outstanding ADSs for a period not to exceed twelve (12) months from the date of approval by board of directors. For the year ended December 31, 2019, the Company had repurchased an aggregate of 434,145 ADSs, representing 8,682,900 Class A common shares at an average price of US$54.6194 per ADS, or US$2.7310 per Class A common share, for aggregate consideration of US$23.7 million. Since the shares repurchased hasn't been cancelled, the excess of repurchase price over par value was recorded as treasury shares upon the repurchase date.

Additionally, in order to lower the average cost of acquiring shares in the ongoing share repurchase program, the Company purchased a capped call option of US$11.7 million for the repurchase of shares. Upon expiration of the option, if the closing market price of the Company's common share is at or above the pre-determined price (the "Strike Price"), the Company will have its initial investment returned with a premium in either cash or shares at the Company's election. If the closing market price is below the Strike Price, the Company will receive the number of shares specified in the agreement. As the outcome of these arrangements is based entirely on the Company's stock price and does not require the Company to deliver either shares or cash, other than the initial investment, the entire transaction is recorded in equity. The agreement was expired in January 2020 and the Company received approximate US$12.2 million of cash that was recorded in equity.

During the year ended December 31, 2019, 6,216,060 Class A common shares were issued for the exercised share options, vested restricted shares and restricted share. 305,127,046 Class A common shares and 38,326,579 Class B common shares were issued to Bigo's selling shareholders during Bigo's acquisition.

As of December 31, 2019, 10,000,000,000 Class A common shares and 1,000,000,000 Class B common shares had been authorized, 1,301,845,404 Class A common shares and 326,509,555 Class B common shares had been issued, 1,293,162,504 Class A common shares and 326,509,555 Class B common shares were outstanding, respectively.

During the year ended December 31, 2020, 12,363,420 Class A common shares were issued for the exercised share options, vested restricted shares and restricted share. The Company also repurchased an aggregate of 1,658,291 ADSs, representing 33,165,820 Class A common shares at an average price of US$69.8407 per ADS or US$3.4920 per Class A common share, for aggregate consideration of US$115.8 million. Since the shares repurchased have not been cancelled, the excess of repurchase price over par value was recorded as treasury shares upon the repurchase date.

As of December 31, 2020, 10,000,000,000 Class A common shares and 1,000,000,000 Class B common shares had been authorized, 1,314,208,824 Class A common shares and 326,509,555 Class B common shares had been issued, 1,272,346,218 Class A common shares and 326,509,555 Class B common shares were outstanding, respectively.

During the year ended December 31, 2021, 3,631,640 Class A common shares were issued for the exercised share options, vested restricted shares and restricted share. In addition, 1,442,020 Class A common shares were transferred out from the treasury shares pool and issued for vested restricted share units during the year ended December 31, 2021. The Company also repurchased an aggregate of 6,515,488 ADSs, representing 130,309,760 Class A common shares at an average price of US$60.3154 per ADS or US$3.0158 per Class A common share, for aggregate consideration of US$393.0 million. Since the shares repurchased have not been cancelled, the excess of repurchase price over par value was recorded as treasury shares upon the repurchase date.

As of December 31, 2021, 10,000,000,000 Class A common shares and 1,000,000,000 Class B common shares had been authorized, 1,317,840,464 Class A common shares and 326,509,555 Class B common shares had been issued, 1,146,336,305 Class A common shares and 326,509,555 Class B common shares were outstanding, respectively.

On September 9, 2021, the Company's board of directors approved a new share repurchase plan (the "September 2021 Share Repurchase Plan"), pursuant to which the Company may repurchase up to US$200 million of the Company's outstanding ADSs or common shares over the next 12 months. On November 16, 2021, the Company's board of directors further approved an additional share repurchase plan (the "November 2021 Share Repurchase Plan"), pursuant to which the Company may repurchase up to US$1 billion of the Company's outstanding ADSs or common shares over the next 12 months. As of December 31, 2021, the Company had repurchased approximately US$235.7 million of its shares.

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26. Share-based compensation

(a) JOYY's share-based awards

(i) Restricted Share Units

On September 16, 2011, the board of directors of the Company approved the 2011 Share Incentive Scheme which include share options, restricted share units and restricted shares. In October 2012, the board of directors of the Company resolved that the maximum aggregate number of Class A common shares which may be issued pursuant to all awards under the 2011 Share Incentive Scheme shall be 43,000,000 plus an annual increase of 20,000,000 on the first day of each fiscal year, or such lesser amount of Class A common shares as determined by the board of directors of the Company.

In September 2021, the board of directors of the Company amended and restated the 2011 Share Incentive Scheme ("Amended and Restated 2011 Share Incentive Scheme"), pursuant to which the Company replaced the 2011 Share Incentive Scheme in its entirety and the awards granted and outstanding thereunder remain effective and binding under the Amended and Restated 2011 Share Incentive Scheme. The board of directors of the Company resolved that the maximum aggregate number of Class A common shares which may be issued pursuant to all awards under the Amended and Restated 2011 Share Incentive Scheme shall be 131,950,949 plus an annual increase of 20,000,000 on the first day of each fiscal year, beginning in 2022, or such lesser amount of Class A common shares.

During the years ended December 31, 2019, 2020 and 2021, the Company granted restricted share units to employees of 16,114,095, 62,770,405 and 9,387,270, respectively, pursuant to the 2011 Share Incentive Scheme.

The following table summarizes the restricted share units activity for the years ended December 31, 2019, 2020 and 2021:

	Number of restricted shares	Weighted average grant-date fair value (US$)
Outstanding, December 31, 2018	25,229,634	4.9639
Granted	16,114,095	3.0005
Forfeited	(6,381,786)	4.7840
Vested	(7,848,811)	4.7427
Outstanding, December 31, 2019	27,113,132	3.9034
Granted	62,770,405	3.6059
Forfeited	(10,312,521)	3.9198
Vested	(6,918,126)	4.3045
Outstanding, December 31, 2020	72,652,890	3.6059
Granted	9,387,270	3.6323
Forfeited	(42,872,565)	3.5461
Vested	(15,139,700)	3.6104
Outstanding, December 31, 2021	24,027,895	3.7202
Expected to vest as of December 31, 2021	21,487,110	3.7203

For the years ended December 31,2019,2020 and 2021, the Company recorded share-based compensation of US$15,624, US$47,514 and US$21,427 in relation to continuing operations using the graded-vesting attribution method.

26. Share-based compensation

(a) JOYY's share-based awards (continued)

(i) Restricted Share Units (continued)

As of December 31, 2021, total unrecognized compensation expense relating to the restricted share units was US$45,306. The expense is expected to be recognized over a weighted average period of 1.27 years using the graded-vesting attribution method.

(ii) Restricted Shares

In connection with the acquisition of Bigo in March 2019, the Group issued common shares to replace Bigo's share incentive scheme.

There are mainly three types of vesting schedule under Bigo's share incentive scheme, which are: i) 50% of the share-based awards will be vested after 24 months of the grant date and the remaining 50% will be vested in two equal installments over the following 24 months, ii) share-based awards will be vested in four equal installments over the following 48 months, and iii) share-based awards will be vested in three equal installments over the following 36 months. After the acquisition, Bigo's share incentive scheme are replaced by JOYY's restricted shares of 38,042,760 without change in vesting terms. The post-acquisition share-based compensation expenses are recognized over the remaining vesting period after the acquisition date.

In addition, the Company granted additional restricted shares to employees of 4,541,086 and 7,888,160 during the year ended December 31, 2020 and 2021, respectively.

The following table summarizes the restricted shares activity for the years ended December 31, 2019, 2020 and 2021:

	Number of restricted shares	Weighted average grant-date fair value (US$)
Outstanding, December 31, 2018	—	—
Replacement due to acquisition of Bigo	38,042,760	3.6100
Granted	16,041,327	3.4750
Forfeited	(7,279,877)	3.6302
Vested	(8,599,959)	3.6608
Outstanding, December 31, 2019	38,204,251	3.5267
Granted	4,541,086	3.9739
Forfeited	(4,554,972)	3.5287
Vested	(11,770,000)	3.6290
Outstanding, December 31, 2020	26,420,365	3.5577
Granted	7,888,160	3.0435
Forfeited	(8,661,973)	3.7025
Vested	(10,497,147)	3.4862
Outstanding, December 31, 2021	15,149,405	3.2566
Expected to vest as of December 31, 2021	13,334,495	3.2151

26. Share-based compensation (continued)

(a) JOYY's share-based awards (continued)

For the years ended December 31, 2019, 2020 and 2021, the Company recorded share-based compensation for restricted shares in relation to continuing operations of US$52,994, US$38,618 and US$9,733 using the graded-vesting attribution method.

As of December 31, 2021, total unrecognized compensation expense relating to the restricted shares was US$27,370. The expense is expected to be recognized over a weighted average period of 1.77 years using the graded-vesting attribution method.

(iii) Share options

Pre-2009 Scheme Options

Before the adoption of the Employee Equity Incentive Scheme (the "2009 Incentive Scheme"), 12,705,700 and 8,499,050 share options were granted to employees through individually signed share option agreements, to acquire common shares of Duowan BVI on a one-to-one basis on January 1, 2008 and 2009 respectively. In addition, on January 1, 2008, 3,832,290 share options were granted to one non-employee for the provision of consulting services to the Group (collectively defined as "Pre-2009 Scheme Options").

The vesting of the Pre-2009 Scheme Options has already been completed before January 1, 2016. As of December 31, 2018, all outstanding, vested and exercisable share options have been exercised.

2011 Share Incentive Scheme

Grant of options

During the years ended December 31, 2019 and 2020, the Company granted 438,100 and nil share options to employees, pursuant to the 2011 Share Incentive Scheme.

Vesting of options

There are three types of vesting schedule, which are: i) options will be vested in three equal installments over the following 36 months, ii) 50% of the options will be vested after 24 months of the grant date and the remaining 50% will be vested in two equal installments over the following 24 months, and iii) 50% of the options will be vested after 24 months of the grant date and the remaining 50% will be vested in one installments over the following 12 months.

26. Share-based compensation (continued)

(a) JOYY's share-based awards (continued)

(iii) Share options (continued)

Movements in the number of share options granted and their related weighted average exercise prices are as follows:

	Number of options	Weighted average exercise price (US$)	Weighted average remaining contractual life (years)	Aggregate intrinsic value (US$)
Outstanding, January 1, 2019	10,934,300	4.7025	5.29	—
Granted	438,100	3.5350		
Forfeited	(1,065,000)	4.5225		
Outstanding, December 31, 2019	10,307,400	3.8069	5.45	—
Outstanding, December 31, 2020	10,307,400	3.8069	4.45	3,669
Forfeited	(893,000)	3.8830		
Outstanding, December 31, 2021	9,414,400	3.7997	2.80	—
Expected to vest as of December 31, 2021	9,414,400	3.7997	2.80	—
Exercisable as of December 31, 2021	6,444,200	3.9216	2.97	—

Forfeitures are estimated at the time of grant. If necessary, forfeitures are revised in subsequent periods if actual forfeitures differ from those estimates.

The aggregate intrinsic value in the table above represents the difference between the Company's common shares as of December 31, 2019, 2020 and 2021 and the exercise price. The total intrinsic value was nil due to the higher exercise price compared to the Company's common shares as of December 31, 2019 and 2021 and the exercise price.

For the years ended December 31, 2019, 2020 and 2021, the Company recorded share-based compensation in relation to continuing operations of US$7,134, US$5,558 and US$2,222 using the graded vesting attribution method.

The Company has used binomial option-pricing model to determine the fair value of the share options as of the grant dates. Key assumptions are set as below:

	2019
Weighted average fair value per option granted	1.7582
Weighted average exercise price	3.5350
Weighted average Risk-free interest rate [(1)]	1.82 %
Expected term (in year) [(2)]	6
Expected volatility [(3)]	56 %
Dividend yield [(4)]	—

(1) The risk-free interest rate of periods within the contractual life of the share option is based on US Treasury Bonds of similar tenor at the valuation dates.

(2) The expected term is the contract life of the option.

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26. Share-based compensation (continued)

(a) JOYY's share-based awards (continued)

(iii) Share options (continued)

(3) Expected volatility is estimated based on the average of historical volatilities of the Company at the valuation dates.

(4) The Company has no history or expectation of paying dividend on its common shares before December 31,2019. The expected dividend yield was estimated based on the Company's expected dividend policy over the expected term of the option.

(b) Other share-based awards

For the years ended December 31, 2019, 2020 and 2021, the Company recorded share-based compensation expense of US$604, US$470 and nil for other share-based compensation.

27. Basic and diluted net income per share

Basic and diluted net income per share for the years ended December 31, 2019, 2020 and 2021 are calculated as follows:

	For the year ended December 31,		
	2019	**2020**	**2021**
	US$	US$	US$
Numerator:			
Net loss from continuing operations attributable to common shareholders of JOYY Inc.	(74,344)	(28,305)	(125,096)
Numerator for diluted loss per share from continuing operations	(74,344)	(28,305)	(125,096)
Net income from discontinued operations attributable to common shareholders of JOYY Inc.	574,592	1,391,638	35,567
Incremental dilution from Huya[(1)]	(2,033)	(655)	—
Numerator for diluted income per share from discontinued operations	498,215	1,362,678	(89,529)
Denominator:			
Denominator for basic calculation—weighted average number of Class A and Class B common shares outstanding	1,544,396,920	1,600,199,759	1,562,016,001
Denominator for diluted calculation	1,544,396,920	1,600,199,759	1,562,016,001
Basic net income (loss) per Class A and Class B common share	0.32	0.85	(0.06)
Continuing operations	(0.05)	(0.02)	(0.08)
Discontinued operations	0.37	0.87	0.02
Diluted net income (loss) per Class A and Class B common share	0.32	0.85	(0.06)
Continuing operations	(0.05)	(0.02)	(0.08)
Discontinued operations	0.37	0.87	0.02
Basic net income (loss) per ADS*	6.48	17.04	(1.14)
Continuing operations	(0.96)	(0.35)	(1.60)
Discontinued operations	7.44	17.39	0.46
Diluted net income (loss) per ADS*	6.45	17.04	(1.14)
Continuing operations	(0.96)	(0.35)	(1.60)
Discontinued operations	7.41	17.39	0.46

* Each ADS represents 20 common shares.

(1) In calculation of diluted net income per share, assuming a dilutive effect, all of Huya's existing unvested restricted share units and unexercised share options are treated as vested and exercised by Huya under the treasury stock method, causing the decrease percentage of the weighted average number of shares held by the Company in Huya. As a result, Huya's net income (loss)

attributable to the Company on a diluted basis decreased accordingly, which is presented as “incremental dilution from Huya” in the table.

27. Basic and diluted net income per share (continued)

For the years ended December 31, 2019, 2020 and 2021, the following shares outstanding were excluded from the calculation of diluted net (loss) income per share, as their inclusion would have been anti-dilutive for the periods prescribed but which could potentially dilute EPS in the future.

	For the year ended December 31,		
	2019	2020	2021
Shares issuable upon exercise of share options	10,307,400	10,307,400	9,414,400
Shares issuable upon exercise of restricted share units	27,113,132	72,652,890	24,027,895
Shares issuable upon exercise of restricted share	38,204,251	26,420,365	15,149,405
Shares issuable upon conversion of convertible bonds	208,542,000	210,568,000	201,677,195

28. Related party transactions

The table below sets forth the major related parties and their relationships with the Group:

Major related parties	Relationship with the Group
Guangzhou Sunhongs Corp., Ltd. (“Guangzhou Sunhongs”) (Formerly known as Guangzhou Shanghang Information Technology Co., Ltd.)	Significant influence exercised by a principal shareholder of the Company
Kingsoft Cloud Holdings Limited (“Kingsoft Cloud”)	Significant influence exercised by a principal shareholder of the Company
Shopline Limited (“Shopline Group”)	Investment with significant influence
Xiaomi Corporation (“Xiaomi Group”)	Controlled by a principal shareholder of the Company
Huya *	Investment with significant influence

* Since April 3, 2020, Huya ceased to be a subsidiary of the Group and the Group accounted for the investment in Huya using the equity method.

During the years ended December 31, 2019, 2020 and 2021, significant related party transactions are as follows:

	For the year ended December 31,		
	2019	2020	2021
	US$	US$	US$
Disposal of investments to related parties	—	20,271	—
Bandwidth service provided by Guangzhou Sunhongs	13,434	14,229	3,287
Promotion expense charged from related parties	3,706	2,533	3,149
Bandwidth service provided by Kingsoft Cloud	1,727	2,126	448
Loan to related parties	24,675	723	34,035
Purchase of fixed assets from Kingsoft Cloud	2,435	427	—
Payments on behalf of related parties, net of repayments	(1,780)	335	55,301
Online games revenue shared from related parties	521	—	—
Repayment of loans from related parties	—	—	156
Others	2,014	850	2,396

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28. Related party transactions (continued)

As of December 31, 2020 and 2021, the amounts due from/to related parties are as follows:

	December 31,	
	2020	2021
	US$	US$
Amounts due from related parties, current		
Amounts due from Shopline Group	—	56,316
Others	611	668
Total	611	56,984
Amounts due to related parties		
Due to Huya	56	4,363
Due to Xiaomi Group	494	1,384
Due to Guangzhou Sunhongs	1,160	128
Others	2,112	1,056
Total	3,822	6,931

*Other receivables and payables from/to related parties are unsecured and payable on demand.

29. Fair value measurements

Fair value reflects the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Group considers the principal or most advantageous market in which it would transact and considers assumptions that market participants would use when pricing the assets or liabilities.

The Group applies a fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. This guidance specifies a hierarchy of valuation techniques, which is based on whether the inputs into the valuation technique are observable or unobservable. The hierarchy is as follows:

Level 1—Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.

Level 2—Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active. Also, model-derived valuations in which all significant inputs and significant value drivers are observable in active markets are Level 2 valuation techniques.

Level 3—Valuation techniques in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are valuation technique inputs that reflect the Group's own assumptions about the assumptions that market participants would use in pricing an asset or liability.

29. Fair value measurements (continued)

The fair value guidance describes three main approaches to measure the fair value of assets and liabilities: (1) market approach; (2) income approach and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

When available, the Group uses quoted market prices to determine the fair value of an asset or liability. If quoted market prices are not available, the Group will measure fair value using valuation techniques that use, when possible, current market-based or independently sourced market parameters, such as interest rates and currency rates.

(a) Fair value measurement on a recurring basis

The following table summarizes the Company's assets that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy as of December 31, 2020 and 2021:

	As of December 31, 2020		
	Level 1	Level 2	Total
Assets			
Short-term investments (i)	124,176	364,925	489,101
Equity investment with readily determinable fair values (ii)	184,968	—	184,968
Derivative – forward exchange contracts	—	54	54
	309,144	364,979	674,123
Liabilities			
Derivatives – forward exchange contracts	—	(6,789)	(6,789)

	As of December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Short-term investments (i)	212,795	682,697	51,051	946,543
Equity investment with readily determinable fair values (ii)	25,480	—	—	25,480
	238,275	682,697	51,051	972,023

(i) Short-term investments represented the investments issued by commercial banks or other financial institutions with a variable interest rate indexed to the performance of underlying assets within one year. For the instruments whose fair value is provided by banks at the end of each period, the Company classifies the valuation techniques that use these inputs as Level 1 of fair value measurements. For the instruments whose fair value is estimated based on quoted prices of similar products provided by banks at the end of each period, the Company classifies the valuation techniques that use these inputs as Level 2 of fair value measurements.

(ii) Equity investments with readily determinable fair values are valued using the market approach based on the quoted prices in active markets at the reporting date. The Group classifies the valuation techniques that use these inputs as Level 1 of fair value measurements.

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29. Fair value measurements (continued)

(a) Fair value measurement on a recurring basis (continued)

The following table presents the changes in Level 3 assets for the years ended December 31, 2019, 2020 and 2021:

	Available-for-sale debt investment — Convertible bond
	US$
Balance as of January 1, 2019 and December 31, 2019	—
Acquisition	1,000
Balance as of December 31, 2020	1,000
Impairment	(1,000)
Balance as of December 31, 2021	—

Available-for-sale debt investments do not have readily determinable market value, which were categorized as Level 3 in the fair value hierarchy. The Company uses a combination of valuation methodologies, including market and income approaches based on the Company's best estimate, which is determined by using information including but not limited to the pricing of recent rounds of financing of the investees, future cash flow forecasts, liquidity factors and multiples of a selection of comparable companies. In 2021, the Group has recognized full impairment against this convertible bond considering the recoverability of this convertible bond.

(b) Fair value measurement on a non-recurring basis

The Company measures investments without readily determinable fair value on a nonrecurring basis when impairment charges and fair value change due to observable price change are recognized. These nonrecurring fair value measurements use significant unobservable inputs (Level 3). The Company uses a combination of valuation methodologies, including market and income approaches based on the Company's best estimate to determine the fair value of these investments. An observable price change is usually resulting from new rounds of financing of the investees. The Company determines whether the securities offered in new rounds of financing are similar to the equity securities held by the Company by comparing the rights and obligations of the securities. When the securities offered in new rounds of financing are determined to be similar to the securities held by the Company, the Company adjusts the observable price of the similar security to determine the amount that should be recorded as an adjustment in the carrying value of the security to reflect the current fair value of the security held by the Company by using the back-solve method based on the equity allocation model with adoption of some key parameters such as risk-free rate and equity volatility. Inputs used in these methodologies primarily include discount rate, the selection of comparable companies operating in similar businesses and etc. For the years ended December 31, 2019, 2020 and 2021, gain on fair value changes of investment of US$394,919, US$14,543 and US$14,045 due to the observable price change of the investment without readily determinable fair value. The gain on fair value changes of investment for the year ended December 31, 2019 was mainly due to the fair value change of investment in Bigo before the acquisition of Bigo, was recognized in gain on fair value changes of investments.

The Group assesses the existence of indicators for other-than-temporary impairment of the investments by considering factors including, but not limited to, current economic and market conditions, the operating performance of the entities including current earnings trends and other entity-specific information. In 2019, 2020 and 2021, based on the Group's assessment, an impairment charge of US$8,870, US$6,186 and US$93,632 was recognized in general and administrative expenses, respectively, against the carrying value of the investments due to significant deterioration in earnings or unexpected changes in business prospects of the investees as compared to the original investment plans.

Apart from the short-term investments, equity investment measured at fair value through earnings and derivatives, the Company's other financial instruments principally consist of cash and cash equivalent, restricted cash and cash equivalent, short-term deposits, restricted short-term deposits, accounts receivable, financing receivables, other receivables, amounts due to/from related parties, accounts payable, certain accrued expenses and convertible bonds. These financial instruments are recorded at cost which approximates fair value.

30. Commitments and contingencies

(a) Operating lease commitments

The operating lease commitments as of December 31, 2021 as presented below mainly consist of the short-term lease commitments and leases that have not yet commenced but that create significant rights and obligations for the Company, which are not included in operating lease right-of-use assets and lease liabilities.

As of December 31, 2021, future minimum payments under non-cancellable operating leases commitments consist of the following:

	Office rental US$
2022	1,846
2023	223
2024	43
2025 and after	—
	2,112

(b) Capital commitments

As of December 31, 2020 and 2021, the Group had outstanding capital commitments totaling to US$142,975 and US$109,881, which consisted of capital expenditures related to properties and additional investments in equity investments, respectively.

(c) Litigation

The Company and certain of its current and former officers and directors were named as defendants in a federal putative securities class action filed in November 2020 alleging that they made material misstatements and omissions in documents filed with the SEC regarding certain of the allegations contained in a short seller report. On March 9, 2022, the court granted the motion to dismiss the claims against the Company but plaintiff still has the ability to file a notice of appeal within 30 days from March 9, 2022. The plaintiffs have filed a notice of appeal before the due date. As of the date of this report, the Company is not able to make a reliable estimate of any potential loss from this class action.

In addition to the above, from time to time, the Group is involved in claims and legal proceedings that arise in the ordinary course of business. Based on currently available information, management does not believe that the ultimate outcome of these unresolved matters, individually and in the aggregate, is likely to have a material adverse effect on the Group’s financial position, results of operations or cash flows.

31. Dividends

On March 16, 2022, the board of directors declared a dividend of US$0.51 per ADS, or US$0.0255 per common share, for the fourth quarter of 2021, which is expected to be paid on April 29, 2022 to shareholders of record as of the close of business on April 14, 2022.

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32. Restricted net assets

Relevant PRC laws and regulations permit payments of dividends by the Group's subsidiaries and VIEs incorporated in the PRC only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. In addition, the Company's subsidiaries and VIEs in the PRC are required to annually appropriate 10% of their net after-tax income to the statutory general reserve fund prior to payment of any dividends, unless such reserve funds have reached 50% of their respective registered capital. As a result of these and other restrictions under PRC laws and regulations, the Group's subsidiaries and VIEs incorporated in the PRC are restricted in their ability to transfer a portion of their net assets to the Company either in the form of dividends, loans or advances, which restricted portion as calculated under U.S. GAAP amounted to approximately US$902,896 and US$1,088,061 for the Group's VIEs as of December 31, 2020 and 2021, respectively, and US$78,416 and US$210,740 for the Group's subsidiaries as of December 31, 2020 and 2021, respectively. Even though the Company currently does not require any such dividends, loans or advances from the PRC entities for working capital and other funding purposes, the Company may in the future require additional cash resources from them due to changes in business conditions, to fund future acquisitions and development, or merely to declare and pay dividends or distributions to our shareholders.

Cash transfers from the Company's PRC subsidiaries to their parent companies outside of China are subject to PRC government control of currency conversion. Shortages in the availability of foreign currency may temporarily restrict the ability of the PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to the Company, or otherwise satisfy their foreign currency denominated obligations.

Except for the above, there is no other restriction on use of proceeds generated by the Group's subsidiaries and VIEs to satisfy any obligations of the Company.

The Company performed a test on the restricted net assets of subsidiaries and VIEs in accordance with Securities and Exchange Commission Regulation S-X Rule 4-08 (e) (3), "General Notes to Financial Statements" and concluded that the restricted net assets did not exceed 25% of the consolidated net assets of the Company as of December 31, 2021 and the condensed financial information of the Company are not required to be presented.

33. Segment Reporting

Historically, there are two segments in the Group, including YY Live and Huya for the years ended December 31, 2018. Starting from the first quarter of 2019, the segment of "YY Live" was renamed as "YY". The Company completed the acquisition of Bigo in March 2019, which is a separate segment of the Group. Therefore, there are three segments in the Group for the year ended December 31, 2019.

Starting from the second quarter of 2020, the Company deconsolidated Huya and Huya's historical financial results were reflected in the Company's consolidated financial statements as discontinued operations accordingly. As a result of the definitive agreements entered into with Baidu on the sale of YY Live, YY Live is represented as discontinued operations. YY segment is renamed as "All other" segment and has been recast to exclude the financial numbers of YY Live.

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33. Segment Reporting (continued)

(a) The following table presents summary information by segment:

For the year ended December 31, 2021:

	Bigo US$	All other US$	Elimination(1) US$	Total US$
Net revenues				
Live streaming	2,231,366	245,424	—	2,476,790
Others	92,392	49,936	(67)	142,261
Total net revenues	2,323,758	295,360	(67)	2,619,051
Cost of revenues(2)	(1,539,188)	(242,029)	67	(1,781,150)
Gross profit	784,570	53,331	—	837,901
Operating expenses(2)				
Research and development expenses	(204,597)	(75,184)	—	(279,781)
Sales and marketing expenses	(402,476)	(65,931)	—	(468,407)
General and administrative expenses	(56,827)	(164,904)	—	(221,731)
Total operating expenses	(663,900)	(306,019)	—	(969,919)
Gain on disposal of business	—	4,959	—	4,959
Other income	6,929	13,447	—	20,376
Operating income (loss)	127,599	(234,282)	—	(106,683)
Interest expense	(3,460)	(13,468)	2,453	(14,475)
Interest income and investment income	1,316	92,370	(2,453)	91,233
Foreign currency exchange losses, net	(12,444)	(933)	—	(13,377)
Loss on disposal and deemed disposal of investments	—	(23,762)	—	(23,762)
Loss on fair value changes of investment	—	(15,435)	—	(15,435)
(Loss) gain on extinguishment of debt and derivative	(52)	5,343	—	5,291
Other non-operating expenses	—	(381)	—	(381)
Income (loss) before income tax expenses	112,959	(190,548)	—	(77,589)
Income tax expenses	(9,153)	(16,592)	—	(25,745)
Income (loss) before share of loss in equity method investments, net of income taxes	103,806	(207,140)	—	(103,334)
Share of loss in equity method investments, net of income taxes	—	(26,217)	—	(26,217)
Net income (loss) from continuing operations	103,806	(233,357)	—	(129,551)

(i) The elimination mainly consists of revenues and expenses generated from services among Bigo and all other segments, and interest income and interest expenses generated from the loan between Bigo and all other segments.

(ii) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

	Bigo US$	All other US$	Total US$
Cost of revenues	5,974	2,115	8,089
Research and development expenses	17,179	6,874	24,053
Sales and marketing expenses	654	631	1,285
General and administrative expenses	(5,297)	5,252	(45)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

33. Segment Reporting (continued)

(a) The following table presents summary information by segment (continued):

For the year ended December 31, 2020:

	Bigo US$	All other US$	Elimination [1] US$	Total US$
Net revenues				
Live streaming	1,659,311	156,515	—	1,815,826
Others	73,500	28,818	—	102,318
Total net revenues	1,732,811	185,333	—	1,918,144
Cost of revenues[2]	(1,207,124)	(171,022)	—	(1,378,146)
Gross profit	525,687	14,311	—	539,998
Operating expenses[2]				
Research and development expenses	(194,122)	(108,696)	—	(302,818)
Sales and marketing expenses	(446,521)	(58,868)	—	(505,389)
General and administrative expenses	(85,685)	(60,981)	—	(146,666)
Total operating expenses	(726,328)	(228,545)	—	(954,873)
Other income	3,550	4,545	—	8,095
Operating loss	(197,091)	(209,689)	—	(406,780)
Interest expense	(7,892)	(72,474)	4,811	(75,555)
Interest income and investment income	155	93,734	(4,811)	89,078
Foreign currency exchange losses, net	(17,035)	(437)	—	(17,472)
Gain on disposal and deemed disposal of investments	—	272,281	—	272,281
Gain on fair value changes of investment	—	160,849	—	160,849
Fair value change on derivatives	(281)	(5,996)	—	(6,277)
Other non-operating expenses	(889)	(1,578)	—	(2,467)
(Loss) income before income tax expenses	(223,033)	236,690	—	13,657
Income tax benefits (expense)	9,425	(37,250)	—	(27,825)
(Loss) income before share of loss in equity method investments, net of income taxes	(213,608)	199,440	—	(14,168)
Share of loss in equity method investments, net of income taxes	—	(7,634)	—	(7,634)
Net (loss) income from continuing operations	(213,608)	191,806	—	(21,802)

(1) The elimination mainly consists of interest income and interest expenses generated from the loan between Bigo and all other segments.

(2) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

33. Segment Reporting (continued)

(a) The following table presents summary information by segment (continued):

	Bigo	All other	Total
	US$	US$	US$
Cost of revenues	4,094	1,703	5,797
Research and development expenses	33,795	8,851	42,646
Sales and marketing expenses	706	605	1,311
General and administrative expense	33,668	8,738	42,406

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

33. Segment Reporting (continued)

(a) The following table presents summary information by segment (continued):

For the year ended December 31, 2019:

	Bigo US$	All other US$	Elimination[1] US$	Total US$
Net revenues				
Live streaming	657,788	111,360	—	769,148
Others	58,541	73,013	—	131,554
Total net revenues	716,329	184,373	—	900,702
Cost of revenues[2]	(505,643)	(151,277)	—	(656,920)
Gross profit	210,686	33,096	—	243,782
Operating expenses[2]				
Research and development expenses	(141,553)	(94,951)	—	(236,504)
Sales and marketing expenses	(297,713)	(106,782)	—	(404,495)
General and administrative expenses	(47,800)	(87,764)	—	(135,564)
Total operating expenses	(487,066)	(289,497)	—	(776,563)
Gain on disposal of business	—	11,754	—	11,754
Other income	1,390	4,284	—	5,674
Operating loss	(274,990)	(240,363)	—	(515,353)
Interest expense	(4,584)	(37,970)	4,440	(38,114)
Interest income and investment income	389	65,798	(4,440)	61,747
Foreign currency exchange gain (losses), net	1,967	(672)	—	1,295
Gain on fair value changes of investment	—	397,960	—	397,960
Fair value change on derivatives	—	(2,277)	—	(2,277)
(Loss) income before income tax expenses	(277,218)	182,476	—	(94,742)
Income tax benefits	19,605	493	—	20,098
(Loss) income before share of income in equity method investments, net of income taxes	(257,613)	182,969	—	(74,644)
Share of income in equity method investments, net of income taxes	—	5,974	—	5,974
Net (loss) income from continuing operations	(257,613)	188,943	—	(68,670)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amount in thousands, except share, ADS, per share and per ADS data, unless otherwise stated)

33. Segment Reporting (continued)

(a) The following table presents summary information by segment (continued):

(1) The elimination mainly consists of interest income and interest expenses generated from the loan between Bigo and all other segments.

(2) Share-based compensation was allocated in cost of revenues and operating expenses as follows:

	Bigo	All other	Total
	US$	US$	US$
Cost of revenues	4,084	1,848	5,932
Research and development expenses	43,625	8,986	52,611
Sales and marketing expenses	617	107	724
General and administrative expense	4,720	12,369	17,089

(b) The following tables set forth revenues and property and equipment for the Company's geographic operations:

	For the years ended December 31,		
	2019	2020	2021
	US$	US$	US$
Revenues:			
PRC	297,469	362,963	481,770
Developed countries	207,016	612,679	872,974
Middle East	182,630	475,662	621,775
Southeast Asia and others	213,587	466,840	642,532

Developed countries mainly included the United States of America, Great Britain, Japan, South Korea and Australia, Middle East mainly included Saudi Arabia and other countries located in the region, and Southeast Asia and others mainly included countries located in Southeast Asia and India.

	As of December 31,	
	2020	2021
	US$	US$
Property and equipment, net:		
PRC	246,325	282,955
Singapore	134,170	50,289
Other countries	21,166	32,148

Exhibit 2.5

Description of rights of each class of securities registered under Section 12 of the Securities Exchange Act of 1934 (the "Exchange Act")

American Depositary Shares ("ADSs") each representing twenty Class A common shares of JOYY Inc., (the "we," "our," "our company," or "us") are listed and traded on the Nasdaq Stock Market and, in connection with this listing (but not for trading), the Class A common shares are registered under Section 12(b) of the Exchange Act. This exhibit contains a description of the rights of (i) the holders of Class A common shares and (ii) the holders of ADSs. Class A common shares underlying the ADSs are held by Citibank, N.A., as depositary, and holders of ADSs will not be treated as holders of the Class A common shares.

Description of Class A Common Shares

The following is a summary of material provisions of our currently effective third amended and restated memorandum and articles of association (the "Memorandum and Articles of Association"), as well as the Companies Act (As revised) of the Cayman Islands (the "Companies Act") insofar as they relate to the material terms of our common shares. Notwithstanding this, because it is a summary, it may not contain all the information that you may otherwise deem important. For more complete information, you should read the entire Memorandum and Articles of Association, which has been filed with the SEC as Exhibit 3.1 to our current report on Form 6-K furnished with the Securities and Exchange Commission on December 27, 2021.

Type and Class of Securities (Item 9.A.5 of Form 20-F)

Each Class A common share has US$0.00001 par value. The number of Class A common shares that have been issued as of the last day of our company's respective fiscal year is provided on the cover of the annual report on Form 20-F (the "Form 20-F") of our company. Our Class A common shares may be held in either certificated or uncertificated form. We may not issue shares to bearer.

Preemptive Rights (Item 9.A.3 of Form 20-F)

Our shareholders do not have preemptive rights.

Limitations or Qualifications (Item 9.A.6 of Form 20-F)

We have a dual-class voting structure such that our common shares consist of Class A common shares and Class B common shares. Each Class A common share shall entitle the holder thereof to one vote on all matters subject to the vote at general meetings of our company, and each Class B common share shall entitle the holder thereof to ten votes on all matters subject to the vote at general meetings of our company. Due to the super voting power of the holders of Class B common shares, the voting power of the holders of Class A common shares may be materially limited.

Rights of Other Types of Securities (Item 9.A.7 of Form 20-F)

Not applicable.

Rights of Class A Common Shares (Item 10.B.3 of Form 20-F)

Common Shares

Our common shares are divided into Class A common shares and Class B common shares. Holders of our Class A common shares and Class B common shares will have the same rights except for voting and conversion rights. Our common shares are issued in registered form and are issued when registered in our register of members. Our shareholders who are non-residents of the Cayman Islands may freely hold and vote their shares.

Conversion

Each Class B common share is convertible into one Class A common share at any time by the holder thereof. Class A common shares are not convertible into Class B common shares under any circumstances. Upon any sale, transfer, assignment or disposition of Class B common shares by a holder to any person or entity which is not an affiliate of such holder and which is not any of our founders or any affiliates of our founders, such Class B common shares shall be automatically and immediately converted into the equivalent number of Class A common shares. In addition, if at any time, Messrs. David Xueling Li, Jun Lei, Tony Bin Zhao and Jin Cao and their affiliates collectively beneficially own less than 5% of the total number of the issued and outstanding Class B common shares, each issued and outstanding Class B common share will be automatically and immediately converted into one Class A common share, and we will not issue any Class B common shares thereafter. Furthermore, if at any time more than 50% of the ultimate beneficial ownership of any holder of Class B common shares (other than our founders or our founders' affiliates) changes, each such Class B common share will be automatically and immediately converted into one Class A common share.

Dividends

The holders of our common shares are entitled to such dividends in any currency (including interim dividends, whenever our financial position, in the opinion of our directors, justifies such payment) as may be declared by our company in a general meeting or our directors subject to the Companies Act and our current Memorandum and Articles of association, but no dividend shall be declared in excess of the amount recommended by our board of directors. Dividends may be declared and paid out of our profits, realized or unrealized, or from any reserve set aside from profits which our directors determine is no longer needed. Our board of directors may also declare and pay dividends out of our share premium account or any other fund or account that can be authorized for this purpose in accordance with the Companies Act. However, even if our company has sufficient profits or share premium, it may not pay a dividend if this would result in our company being unable to pay its debts as they fall due in the ordinary course of business.

Except in so far as the rights attaching to, or the terms of issue of, any share otherwise provides, (a) all dividends shall be declared and paid according to the amounts paid up on the shares in respect of which the dividend is paid, but no amount paid up on a share in advance of calls shall

be treated for this purpose as paid up on that share and (b) all dividends shall be apportioned and paid pro rata according to the amounts paid up on the shares during any portion or portions of the period in respect of which the dividend is paid.

Our directors may deduct from any dividend or bonus payable to any shareholder all sums of money (if any) presently payable by such shareholder to us on account of calls or otherwise.

No dividend or other money payable by us on or in respect of any share shall bear interest against us.

In respect of any dividend proposed to be paid or declared on our share capital, our directors may resolve and direct that (a) such dividend be satisfied wholly or in part in the form of an allotment of shares credited as fully paid up, provided that our shareholders entitled thereto will be entitled to elect to receive such dividend (or part thereof if our directors so determine) in cash in lieu of such allotment or (b) the shareholders entitled to such dividend will be entitled to elect to receive an allotment of shares credited as fully paid up in lieu of the whole or such part of the dividend as our directors may think fit. Our shareholders may, upon the recommendation of our directors, by ordinary resolution resolve in respect of any particular dividend that, notwithstanding the foregoing, a dividend may be satisfied wholly in the form of an allotment of shares credited as fully paid up without offering any right to shareholders to elect to receive such dividend in cash in lieu of such allotment.

Any dividend interest or other sum payable in cash to the holder of shares may be paid by check or warrant sent by mail addressed to the holder at his registered address, or addressed to such person and at such addresses as the holder may direct. Every check or warrant shall, unless the holder or joint holders otherwise direct, be made payable to the order of the holder or, in the case of joint holders, to the order of the holder whose name stands first on the register in respect of such shares, and shall be sent at his or their risk and payment of the check or warrant by the bank on which it is drawn shall constitute a good discharge to us.

All dividends unclaimed for one year after having been declared may be invested or otherwise made use of by our board of directors for the benefit of our company until claimed. Any dividend unclaimed after a period of six years from the date of declaration of such dividend shall be forfeited and reverted to us.

Whenever our directors have resolved that a dividend be paid or declared, our directors may further resolve that such dividend be satisfied wholly or in part by the distribution of specific assets of any kind, and in particular of paid up shares, debentures or warrants to subscribe for our securities or securities of any other company. Where any difficulty arises with regard to such distribution, our directors may settle it as they think expedient. In particular, our directors may issue fractional certificates, ignore fractions altogether or round the same up or down, fix the value for distribution purposes of any such specific assets, determine that cash payments shall be made to any of our shareholders upon the footing of the value so fixed in order to adjust the rights of the parties, vest any such specific assets in trustees as may seem expedient to our directors, and appoint any person to sign any requisite instruments of transfer and other documents on behalf of the persons entitled to the dividend, which appointment shall be effective and binding on our shareholders.

Voting Rights

In respect of all matters requiring a shareholders' vote, each Class A common share is entitled to one vote, and each Class B common share is entitled to ten votes, voting together as one class. At any shareholders' meeting, and subject to the voting rights attached to our Class A common shares and Class B common shares as described in this paragraph, on a show of hands, every shareholder present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its duly authorized representative) or by means of Communications Facilities (as defined in our articles of association), if permitted) shall have one vote and on a poll, every shareholder present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its duly authorized representative) or by means of Communications Facilities (as defined in our articles of association), if permitted) shall have one vote for each fully paid share of which such shareholder is the holder.

No shareholder shall, unless the board otherwise determines, be entitled to vote or be reckoned in a quorum, in respect of any share, unless such shareholder is duly registered as our shareholder and all calls or installments due by such shareholder to us have been paid.

If a clearing house (or its nominee(s)) or a central depositary entity, being a corporation, is a shareholder, it may authorize such person or persons as it thinks fit to act as its representative(s) at any meeting or at any meeting of any class of shareholders, provided that the authorization shall specify the number and class of shares in respect of which each such person is so authorized. A person so authorized is entitled to exercise the same rights and powers on behalf of the clearing house or central depositary entity (or its nominee(s)) as if such person was the registered holder of our shares held by the clearing house or central depositary entity (or its nominee(s)) including the right to vote individually on a show of hands.

While there is nothing under the laws of the Cayman Islands which specifically prohibits or restricts the creation of cumulative voting rights for the election of directors of our company, it is not a concept that is accepted as a common practice in the Cayman Islands, and our company has made no provisions in our articles of association to allow cumulative voting for such elections.

An ordinary resolution to be passed at a meeting by the shareholders requires a simple majority of the votes cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting of which not less than ten (10) clear days' notice has been duly given, while a special resolution requires a majority of not less than two-thirds of the votes cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting of which not less than ten (10) clear days' notice has been duly given. Provided that, except in the case of an annual general meeting, if it is so agreed by a majority in number of the members having the right to attend and vote at any such meeting, being a majority together holding not less than ninety-five (95) per cent. in nominal value of the shares giving that right and in the case of an annual general meeting, if it is so agreed by all members entitled to attend and vote thereat, a resolution may be proposed and passed as a special resolution at a meeting of which less than ten (10) clear days' notice has been given. A special resolution will be required for important matters such as changing our name or altering the provisions of our current Memorandum and Articles of Association.

Transfer of Shares

Subject to any applicable restrictions set forth in our Memorandum and Articles of Association, including, for example, the board of directors' discretion to refuse to register a transfer of any share (not being a fully paid up share) to a person of whom it does not approve, or any share issued under share incentive plans for employees upon which a restriction on transfer imposed thereby still subsists, or a transfer of any share to more than four joint holders, any of our shareholders may transfer all or any of his or her shares by an instrument of transfer in the usual or common form or in a form prescribed by the Nasdaq Global Select Market or in another form that our directors may approve.

Our directors may decline to register any transfer of any share which is not paid up or on which we have a lien. Our directors may also decline to register any transfer of any share unless:

- the instrument of transfer is lodged with us and is accompanied by the certificate for the shares to which it relates and such other evidence as our directors may reasonably require to show the right of the transferor to make the transfer;

- the instrument of transfer is in respect of only one class of share;

- the instrument of transfer is properly stamped (in circumstances where stamping is required); and

- fee of such maximum sum as the Nasdaq Global Select Market may determine to be payable or such lesser sum as our directors may from time to time require is paid to us in respect thereof.

If our directors refuse to register a transfer, they shall, within three months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal.

The registration of transfers may, after compliance with any notice requirement of the Nasdaq Global Select Market, be suspended and the register closed at such times and for such periods as our directors may from time to time determine; provided, however, that the registration of transfers shall not be suspended nor the register closed for more than 30 days in any year as our directors may determine.

Liquidation Rights

Subject to any class or classes of shares or future shares which are issued with specific rights, privileges or restrictions as to the distribution of available surplus assets on liquidation, (a) if we are wound up and the assets available for distribution among our shareholders are more than sufficient to repay the whole of the capital paid up at the commencement of the winding up, the excess shall be distributed pari passu among those shareholders in proportion to the amount paid up at the commencement of the winding up on the shares held by them, respectively, and (b) if we are wound up and the assets available for distribution among the shareholders as such are insufficient to repay the whole of the paid-up capital, those assets shall be distributed so that, as

nearly as may be, the losses shall be borne by the shareholders in proportion to the capital paid up at the commencement of the winding up on the shares held by them, respectively.

If we are wound up (whether the liquidation is voluntary or by the court), the liquidator may with the sanction of our special resolution and any other sanction required by the Companies Act, divide among our shareholders in specie or kind the whole or any part of our assets (whether or not they shall consist of property of the same kind) and may, for such purpose, set such value as the liquidator deems fair upon any property to be divided and may determine how such division shall be carried out as between the shareholders or different classes of shareholders. The liquidator may also vest the whole or any part of these assets in trustees upon such trusts for the benefit of the shareholders as the liquidator shall think fit, but so that no shareholder will be compelled to accept any assets, shares or other securities upon which there is a liability.

The consideration received by each holder of a Class A common share and a holder of a Class B common share will be the same in any liquidation event.

Calls on Common shares and Forfeiture of Common shares

Subject to our Memorandum and Articles of Association, our directors may from time to time make such calls upon the members in respect of any amounts unpaid on the shares held by them. The shares that have been called upon and remain unpaid after it has become due and payable are subject to forfeiture.

Repurchase Shares

We are empowered by the Companies Act and our Memorandum and Articles of Association to purchase our own shares on such terms and in such manner as have been approved by our board of directors or by an ordinary resolution of our shareholders. Under the Companies Act, the repurchase of any share may be paid out of our company's profits or out of the proceeds of a new issue of shares made for the purpose of such redemption or repurchase, or out of capital (including share premium account and capital redemption reserve) if our company can, immediately following such payment, pay its debts as they fall due in the ordinary course of business. In addition, under the Companies Act no such share may be repurchased (a) unless it is fully paid up, (b) if such repurchase would result in there being no shares issued and outstanding or (c) if the company has commenced liquidation. In addition, our company may accept the surrender of any fully paid share for no consideration. Our directors may only exercise this power on our behalf, subject to the Companies Act, our Memorandum and Articles of Association and to any applicable requirements imposed from time to time by the Nasdaq Global Select Market, the U.S. Securities and Exchange Commission, or by any other recognized stock exchange on which our securities are listed.

Requirements to Change the Rights of Holders of Class A Common Shares (Item 10.B.4 of Form 20-F)

Variation of Rights

Alterations to our Memorandum and Articles of Association may only be made by special resolution, meaning a majority of not less than two-thirds of votes cast at a shareholders' meeting.

Subject to applicable laws and our Memorandum and Articles of Association, all or any of the special rights for the time being attached to the shares or any class of shares may, unless otherwise provided by the terms of issue of the shares of that class, from time to time be varied, modified or abrogated by a special resolution passed at a separate general meeting of the holders of the shares of that class. All the provisions of our articles of association relating to general meetings shall, mutatis mutandis, apply, but so that:

- separate general meetings of the holders of a class or series of shares may be called only by (i) the chairman of our board of directors, or (ii) a majority of our board of directors (unless otherwise specifically provided by the terms of issue of the shares of such class or series). Our articles of association does not give any shareholder(s) the right to call a class or series meeting;

- the necessary quorum shall be a person or persons (or in the case of a shareholder being a corporation, its duly authorized representative) together holding or representing by proxy not less than one-third in nominal value of the issued shares of that class;

- every holder of shares of the class shall be entitled on a poll to one vote for every such share held by him; and

- any holder of shares of the class present (whether in person or by proxy (or, in the case of a shareholder being a corporation, by its authorized representative) or by means of Communication Facilities (as defined in our articles of association), if permitted) may demand a poll.

The special rights conferred upon the holders of any shares or class of shares shall not, unless otherwise expressly provided in the rights attaching to or the terms of issue of such shares, be deemed to be varied, modified or abrogated by the creation or issue of further shares ranking pari passu with such existing shares or class of shares.

Limitations on the Rights to Own Class A Common Shares (Item 10.B.6 of Form 20-F)

There are no limitations under the laws of the Cayman Islands or under the Memorandum and Articles of Association that limit the right of non-resident or foreign owners to hold or vote Class A common shares.

Provisions Affecting Any Change of Control (Item 10.B.7 of Form 20-F)

Anti-Takeover Provisions. Some provisions of our Memorandum and Articles of Association may discourage, delay or prevent a change of control of our company or management that shareholders may consider favorable, including provisions that:

- authorize our board of directors to issue preferred shares in one or more series and to fix their designations, powers, preferences, privileges, and relative participating, optional or special rights and the qualifications, limitations or restrictions, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation

preference, and restrictions of such preferred shares without any further vote or action by our shareholders; and

- limit the ability of shareholders to requisition and convene general meetings of shareholders.

However, under Cayman Islands law, our directors may only exercise the rights and powers granted to them under our Memorandum and Articles of Association for a proper purpose and for what they believe in good faith to be in the best interests of our company.

Ownership Threshold (Item 10.B.8 of Form 20-F)

There are no provisions under the laws of the Cayman Islands applicable to our company or under the Memorandum and Articles of Association that require our company to disclose shareholder ownership above any particular ownership threshold.

Differences Between the Law of Different Jurisdictions (Item 10.B.9 of Form 20-F)

The Companies Act is modeled after that of England but does not follow recent English statutory enactments and differs from laws applicable to U.S. corporations and their shareholders. Set forth below is a summary of the significant differences between the provisions of the Companies Act applicable to us and the laws applicable to companies incorporated in the United States and their shareholders.

Mergers and Similar Arrangements. The Companies Act permits mergers and consolidations between Cayman Islands companies and between Cayman Islands companies and non-Cayman Islands companies. For these purposes, (a) “merger” means the merging of two or more constituent companies and the vesting of their undertaking, property and liabilities in one of such companies as the surviving company, and (b) a “consolidation” means the combination of two or more constituent companies into a consolidated company and the vesting of the undertaking, property and liabilities of such companies to the consolidated company. In order to effect such a merger or consolidation, the directors of each constituent company must approve a written plan of merger or consolidation, which must then be authorized by (a) a special resolution of the shareholders of each constituent company, and (b) such other authorization, if any, as may be specified in such constituent company’s articles of association. The plan must be filed with the Registrar of Companies of the Cayman Islands together with a declaration as to the solvency of the consolidated or surviving company, a list of the assets and liabilities of each constituent company and an undertaking that a copy of the certificate of merger or consolidation will be given to the members and creditors of each constituent company and that notification of the merger or consolidation will be published in the Cayman Islands Gazette. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

A merger between a Cayman parent company and its Cayman subsidiary or subsidiaries does not require authorization by a resolution of shareholders of that Cayman subsidiary if a copy of the plan of merger is given to every member of that Cayman subsidiary to be merged unless that member agrees otherwise. For this purpose a company is a “parent” of a subsidiary if it holds

issued shares that together represent at least ninety percent (90%) of the votes at a general meeting of the subsidiary.

The consent of each holder of a fixed or floating security interest over a constituent company is required unless this requirement is waived by a court in the Cayman Islands.

Save in certain limited circumstances, a shareholder of a Cayman constituent company who dissents from the merger or consolidation is entitled to payment of the fair value of his shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) upon dissenting to the merger or consolidation, provide the dissenting shareholder complies strictly with the procedures set out in the Companies Act. The exercise of dissenter rights will preclude the exercise by the dissenting shareholder of any other rights to which he or she might otherwise be entitled by virtue of holding shares, save for the right to seek relief on the grounds that the merger or consolidation is void or unlawful.

Separate from the statutory provisions relating to mergers and consolidations, the Companies Act also contains statutory provisions that facilitate the reconstruction and amalgamation of companies by way of schemes of arrangement, provided that the arrangement is approved by a majority in number of each class of shareholders and creditors with whom the arrangement is to be made, and who must in addition represent three-fourths in value of each such class of shareholders or creditors, as the case may be, that are present and voting either in person or by proxy at a meeting, or meetings, convened for that purpose. The convening of the meetings and subsequently the arrangement must be sanctioned by the Grand Court of the Cayman Islands. While a dissenting shareholder has the right to express to the court the view that the transaction ought not to be approved, the court can be expected to approve the arrangement if it determines that:

- the statutory provisions as to the required majority vote have been met;
- the shareholders have been fairly represented at the meeting in question and the statutory majority are acting bona fide without coercion of the minority to promote interests adverse to those of the class;
- the arrangement is such that may be reasonably approved by an intelligent and honest man of that class acting in respect of his interest; and
- the arrangement is not one that would more properly be sanctioned under some other provision of the Companies Act.

The Companies Act also contains a statutory power of compulsory acquisition which may facilitate the “squeeze out” of dissentient minority shareholder upon a tender offer. When a tender offer is made and accepted by holders of 90% of the shares affected within four months, the offeror may, within a two-month period commencing on the expiration of such four month period, require the holders of the remaining shares to transfer such shares to the offeror on the terms of the offer. An objection can be made to the Grand Court of the Cayman Islands but this is unlikely to succeed in the case of an offer which has been so approved unless there is evidence of fraud, bad faith or collusion.

If an arrangement and reconstruction is thus approved, or if a tender offer is made and accepted, a dissenting shareholder would have no rights comparable to appraisal rights, save that objectors to a takeover offer may apply to the Grand Court of the Cayman Islands for various orders that the Grand Court of the Cayman Islands has a broad discretion to make, which would otherwise ordinarily be available to dissenting shareholders of Delaware corporations, providing rights to receive payment in cash for the judicially determined value of the shares.

Shareholders' Suits. In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company and as a general rule, a derivative action may not be brought by a minority shareholder. However, based on English authorities, which would in all likelihood be of persuasive authority in the Cayman Islands, there are exceptions to the foregoing principle which permit a minority shareholder to commence a class action against, or derivative actions in the name of, a company, including when:

- a company acts or proposes to act illegally or ultra vires;
- the act complained of, although not ultra vires, could only be effected duly if authorized by more than a simple majority vote that has not been obtained; and
- those who control the company are perpetrating a "fraud on the minority."

Indemnification of Directors and Executive Officers and Limitation of Liability. Cayman Islands law does not limit the extent to which a company's memorandum and articles of association may provide for indemnification of officers and directors, except to the extent any such provision may be held by the Cayman Islands courts to be contrary to public policy, such as to provide indemnification against civil fraud or the consequences of committing a crime. Our Memorandum and Articles of Association permit indemnification of officers and directors for losses, damages, cost and expenses incurred in their capacities as such unless such losses or damages arise from dishonesty or fraud of such directors or officers. This standard of conduct is generally the same as permitted under the Delaware General Corporation Law for a Delaware corporation.

In addition, we have entered into indemnification agreements with our directors and executive officers that provide such persons with additional indemnification beyond that provided in our Memorandum and Articles of Association.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Anti-Takeover Provisions in the Memorandum and Articles of Association. Some provisions of our current Memorandum and Articles of Association may discourage, delay or prevent a change in control of our company or management that shareholders may consider favorable, including provisions that authorize our board of directors to issue preferred shares in one or more series and to designate the price, rights, preferences, privileges and restrictions of such preferred shares without any further vote or action by our shareholders.

However, under Cayman Islands law, our directors may only exercise the rights and powers granted to them under our Memorandum and Articles of Association, as amended and restated from time to time, for a proper purpose and for what they believe in good faith to be in the best interests of our company.

Directors' Fiduciary Duties. Under Delaware corporate law, a director of a Delaware corporation has a fiduciary duty to the corporation and its shareholders. This duty has two components: the duty of care and the duty of loyalty. The duty of care requires that a director act in good faith, with the care that an ordinarily prudent person would exercise under similar circumstances. Under this duty, a director must inform himself of and disclose to shareholders, all material information reasonably available regarding a significant transaction. The duty of loyalty requires that a director acts in a manner he reasonably believes to be in the best interests of the corporation. He must not use his corporate position for personal gain or advantage. This duty prohibits self-dealing by a director and mandates that the best interest of the corporation and its shareholders take precedence over any interest possessed by a director, officer or controlling shareholder and not shared by the shareholders generally. In general, actions of a director are presumed to have been made on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the corporation. However, this presumption may be rebutted by evidence of a breach of one of the fiduciary duties. Should such evidence be presented concerning a transaction by a director, the director must prove the procedural fairness of the transaction and that the transaction was of fair value to the corporation.

As a matter of Cayman Islands law, a director of a Cayman Islands company is in the position of a fiduciary with respect to the company and therefore it is considered that he owes the following duties to the company — a duty to act bona fide in the best interests of the company, a duty not to make a profit based on his position as director (unless the company permits him to do so) and a duty not to put himself in a position where the interests of the company conflict with his personal interest or his duty to a third party. A director of a Cayman Islands company owes to the company a duty to act with skill and care. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands.

Shareholder Action by Written Consent. Under the Delaware General Corporation Law, a corporation may eliminate the right of shareholders to act by written consent by amendment to its certificate of incorporation. Our Memorandum and Articles of Association do not allow our shareholders to approve matters to be determined at shareholders' meetings by way of written resolutions without a meeting..

Shareholder Proposals. Under the Delaware General Corporation Law, a shareholder has the right to put any proposal before the annual meeting of shareholders, provided it complies with the notice provisions in the governing documents. A special meeting may be called by the board of directors or any other person authorized to do so in the governing documents, but shareholders may be precluded from calling special meetings.

The Companies Act provides shareholders with only limited rights to requisition a general meeting, and does not provide shareholders with any right to put any proposal before a general

meeting. These rights may be provided in a company's articles of association. Our Memorandum and Articles of Association do not allow our shareholders to requisition any extraordinary general meeting of our shareholders and do not provide our shareholders with any other right to put proposals before any annual general meetings or extraordinary general meetings. As a Cayman Islands exempted company, we are not obliged by law to call shareholders' annual general meetings. Our Memorandum and Articles of Association provide that we may (but are not obligated to) in each year hold a general meeting as our annual general meeting. In addition, extraordinary general meetings of our shareholders may be convened only by a majority of our board of directors or the chairman of our board of directors.

Cumulative Voting. Under the Delaware General Corporation Law, cumulative voting for elections of directors is not permitted unless the corporation's certificate of incorporation specifically provides for it. Cumulative voting potentially facilitates the representation of minority shareholders on a board of directors since it permits the minority shareholder to cast all the votes to which the shareholder is entitled on a single director, which increases the shareholder's voting power with respect to electing such director. While there is nothing under the laws of the Cayman Islands which specifically prohibits or restricts the creation of cumulative voting rights for the election of directors of our company, it is not a concept that is accepted as a common practice in the Cayman Islands , and our company has made no provisions in our Memorandum and Articles of Association to allow cumulative voting for such elections. As a result, our shareholders are not afforded any less protections or rights on this issue than shareholders of a Delaware corporation.

Removal of Directors. Under the Delaware General Corporation Law, a director of a corporation with a classified board may be removed only for cause with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under our Memorandum and Articles of Association, a director may be removed by a special resolution of our shareholders.

Transactions with Interested Shareholders. The Delaware General Corporation Law contains a business combination statute applicable to Delaware corporations whereby, unless the corporation has specifically elected not to be governed by such statute by amendment to its certificate of incorporation, it is prohibited from engaging in certain business combinations with an "interested shareholder" for three years following the date that such person becomes an interested shareholder. An interested shareholder generally is a person or a group who or which owns or owned 15% or more of the target's outstanding voting share within the past three years. This has the effect of limiting the ability of a potential acquirer to make a two-tiered bid for the target in which all shareholders would not be treated equally. The statute does not apply if, among other things, prior to the date on which such shareholder becomes an interested shareholder, the board of directors approves either the business combination or the transaction which resulted in the person becoming an interested shareholder. This encourages any potential acquirer of a Delaware corporation to negotiate the terms of any acquisition transaction with the target's board of directors.

Cayman Islands law has no comparable statute. As a result, we cannot avail ourselves of the types of protections afforded by the Delaware business combination statute. However, although Cayman Islands law does not regulate transactions between a company and its significant

shareholders, it does provide that such transactions must be entered into bona fide in the best interests of the company and not with the effect of constituting a fraud on the minority shareholders.

Dissolution; Winding up. Under the Delaware General Corporation Law, unless the board of directors approves the proposal to dissolve, dissolution must be approved by shareholders holding 100% of the total voting power of the corporation. Only if the dissolution is initiated by the board of directors may it be approved by a simple majority of the corporation's outstanding shares. Delaware law allows a Delaware corporation to include in its certificate of incorporation a supermajority voting requirement in connection with dissolutions initiated by the board.

Under Cayman Islands law, a company may be wound up by either an order of the courts of the Cayman Islands or by a special resolution of its members or, if the company is unable to pay its debts as they fall due, by an ordinary resolution of its members. The court has authority to order winding up in a number of specified circumstances including where it is, in the opinion of the court, just and equitable to do so.

Variation of Rights of Shares. Under the Delaware General Corporation Law, a corporation may vary the rights of a class of shares with the approval of a majority of the outstanding shares of such class, unless the certificate of incorporation provides otherwise. Under our Memorandum and Articles of Association, all or any of the special rights for the time being attached to the shares or any class of shares may, unless otherwise provided by the terms of issue of the shares of that class, from time to time be varied, modified or abrogated by a special resolution passed at a separate general meeting of the holders of the shares of that class. The special rights conferred upon the holders of any shares or class of shares shall not, unless otherwise expressly provided in the rights attaching to or the terms of issue of such shares, be deemed to be varied, modified or abrogated by the creation or issue of further shares ranking pari passu with such existing class of shares.

Amendment of Governing Documents. Under the Delaware General Corporation Law, a corporation's governing documents may be amended with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. As permitted by Cayman Islands law and our Memorandum and Articles of Association, our Memorandum and Articles of Association may only be amended with a special resolution of our shareholders.

Rights of Non-resident or Foreign Shareholders. There are no limitations imposed by our Memorandum and Articles of Association on the rights of non-resident or foreign shareholders to hold or exercise voting rights on our shares. In addition, there are no provisions in our Memorandum and Articles of Association which require our company to disclose shareholder ownership above any particular ownership threshold.

Exempted Company. The Companies Act in the Cayman Islands distinguishes between ordinary resident companies and exempted companies. Any company that is registered in the Cayman Islands but conducts business mainly outside of the Cayman Islands may apply to be registered as an exempted company. The requirements for an exempted company are essentially the same as for an ordinary company except for the exemptions and privileges listed below:

- an exempted company does not have to file an annual return of its shareholders with the Registrar of Companies;
- an exempted company's register of members is not required to be open to inspection;
- an exempted company does not have to hold an annual general meeting;
- an exempted company may issue no par value shares;
- an exempted company may obtain an undertaking against the imposition of taxation on profits, capital gains or inheritance (such undertakings are usually given for 20 years in the first instance);
- an exempted company may register by way of continuation in another jurisdiction and be deregistered in the Cayman Islands;
- an exempted company may register as a limited duration company; and
- an exempted company may register as a segregated portfolio company.

"Limited liability" means that the liability of each shareholder is limited to the amount unpaid by the shareholder on that shareholder's shares of the company (except in exceptional circumstances, such as involving fraud, the establishment of an agency relationship or an illegal or improper purpose or other circumstances in which a court may be prepared to pierce or lift the corporate veil).

Changes in Capital (Item 10.B.10 of Form 20-F)

We may from time to time by ordinary resolution in accordance with the Companies Act alter the conditions of our Memorandum and Articles of Association to:

- increase our capital by such sum, to be divided into shares of such amounts, as the resolution shall prescribe;
- consolidate and divide all or any of our share capital into shares of larger amounts than our existing shares;
- cancel any shares which at the date of the passing of the resolution have not been taken or agreed to be taken by any person, and diminish the amount of its share capital by the amount of the shares so cancelled subject to the provisions of the Companies Act;
- sub-divide our shares or any of them into shares of smaller amount than is fixed by our Memorandum and Articles of Association, subject nevertheless to the Companies Act, so that the resolution whereby any share is sub-divided may determine that, as between the holders of the shares resulting from such subdivision, one or more of the shares may have any such preferred or other special rights over, or may have such deferred rights or be subject to any such restrictions as compared with the others, as we have power to attach to unissued or new shares; and
- divide our shares into several classes and without prejudice to any special rights previously conferred on the holders of existing shares, attach to the shares

respectively any preferential, deferred, qualified or special rights, privileges, conditions or such restrictions that in the absence of any such determination in a general meeting may be determined by our directors.

We may, by special resolution, subject to any confirmation or consent required by the Companies Act, reduce our share capital or any capital redemption reserve in any manner authorized by law.

Debt Securities (Item 12.A of Form 20-F)

Not applicable.

Warrants and Rights (Item 12.B of Form 20-F)

Not applicable.

Other Securities (Item 12.C of Form 20-F)

Not applicable.

Description of American Depositary Shares (Items 12.D.1 and 12.D.2 of Form 20-F)

Citibank, N.A., as depositary, issues the ADSs. Each ADS represents ownership of twenty Class A common shares, deposited with Citibank, N.A. – Hong Kong Branch, as custodian for the depositary. Each ADS also represents ownership of any other securities, cash or other property which may be held by the depositary. The depositary's principal office is located at which the ADSs will be administered is located at 388 Greenwich Street, New York, New York 10013.

The Direct Registration System, or DRS, is a system administered by The Depository Trust Company, or DTC, pursuant to which the depositary may register the ownership of uncertificated ADSs, which ownership shall be evidenced by periodic statements issued by the depositary to the ADS holders entitled thereto.

The following is a summary of what we believe to be the material terms of the deposit agreement. Notwithstanding this, because it is a summary, it may not contain all the information that you may otherwise deem important. For more complete information, you should read the entire deposit agreement and the form of ADR which contains the terms of your ADSs. The deposit agreement has been filed with the SEC as an exhibit to a Registration Statement on Form F-6 (File No. 333-224550) for our company.

Governing Law/Waiver of Jury Trial

We do not treat ADS holders as our shareholders and accordingly, you, as an ADS holder, do not have shareholder rights. Cayman Islands law governs shareholder rights. The depositary will be the holder of the common shares underlying your ADSs. As a holder of ADSs, you will have ADS holder rights. A deposit agreement among us, the depositary and you, as an ADS holder, and the beneficial owners of ADSs sets out ADS holder rights as well as the rights and obligations of the depositary. The laws of the State of New York govern the deposit agreement and the ADSs and we have agreed with the depositary that the federal or state courts in the City

of New York shall have jurisdiction to hear and determine any suit, action or proceeding and to settle any dispute between them that may arise out of or in connection with the deposit agreement and, for such purposes, each irrevocably submits to the non-exclusive jurisdiction of such courts.

By holding an ADS or an interest therein, you irrevocably agree that any legal suit, action or proceeding against or involving us or the Depositary, arising out of or based upon the deposit agreement, ADSs or ADRs, may only be instituted in a state or federal court in the City of New York, and you irrevocably waive any objection to the laying of venue and irrevocably submit to the exclusive jurisdiction of such courts with respect to any such suit, action or proceeding.

Holding the ADSs

How will you hold your ADSs?

You may hold ADSs either (1) directly (a) by having an American Depositary Receipt, or ADR, which is a certificate evidencing a specific number of ADSs, registered in your name, or (b) by holding ADSs in DRS, or (2) indirectly through your broker or other financial institution. If you hold ADSs directly, you are an ADS holder. This description assumes you hold your ADSs directly. ADSs will be issued through DRS, unless you specifically request certificated ADRs. If you hold the ADSs indirectly, you must rely on the procedures of your broker or other financial institution to assert the rights of ADS holders described in this section. You should consult with your broker or financial institution to find out what those procedures are.

The registration of the Class A common shares in the name of the depositary bank or the custodian shall, to the maximum extent permitted by applicable law, vest in the depositary bank or the custodian the record ownership in the applicable Class A common shares with the beneficial ownership rights and interests in such Class A common shares being at all times vested with the beneficial owners of the ADSs representing the Class A common shares. The depositary bank or the custodian shall at all times be entitled to exercise the beneficial ownership rights in all deposited property, in each case only on behalf of the holders and beneficial owners of the ADSs representing the deposited property.

Dividends and Other Distributions

How will you receive dividends and other distributions on the common shares underlying the ADSs?

As a holder of ADSs, you generally have the right to receive the distributions we make on the securities deposited with the custodian. Your receipt of these distributions may be limited, however, by practical considerations and legal limitations. Holders of ADSs will receive such distributions under the terms of the deposit agreement in proportion to the number of ADSs held as of the specified record date, after deduction of the applicable fees, taxes and expenses.

Distribution of Cash

Whenever we make a cash distribution for the securities on deposit with the custodian, we will deposit the funds with the custodian. Upon receipt of confirmation of the deposit of the requisite

funds, the depositary bank will arrange for the funds received in a currency other than U.S. dollars to be converted into U.S. dollars and for the distribution of the U.S. dollars to the holders, subject to the laws and regulations of the Cayman Islands.

The conversion into U.S. dollars will take place only if practicable and if the U.S. dollars are transferable to the United States. The depositary bank will apply the same method for distributing the proceeds of the sale of any property (such as undistributed rights) held by the custodian in respect of securities on deposit.

The distribution of cash will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the deposit agreement. The depositary bank will hold any cash amounts it is unable to distribute in a non-interest bearing account for the benefit of the applicable holders and beneficial owners of ADSs until the distribution can be effected or the funds that the depositary bank holds must be escheated as unclaimed property in accordance with the laws of the relevant states of the United States.

Distribution of Class A Common Shares

Whenever we make a free distribution of Class A common shares for the securities on deposit with the custodian, we will deposit the applicable number of Class A common shares with the custodian. Upon receipt of confirmation of such deposit, the depositary bank will either distribute to holders new ADSs representing the Class A common shares deposited or modify the ADS-to-Class A common share ratio, in which case each ADS you hold will represent rights and interests in the additional Class A common shares so deposited. Only whole new ADSs will be distributed. Fractional entitlements will be sold and the proceeds of such sale will be distributed as in the case of a cash distribution.

The distribution of new ADSs or the modification of the ADS-to-Class A common share ratio upon a distribution of Class A common shares will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the deposit agreement. In order to pay such taxes or governmental charges, the depositary bank may sell all or a portion of the new Class A common shares so distributed.

No such distribution of new ADSs will be made if it would violate a law (e.g., the U.S. securities laws) or if it is not operationally practicable. If the depositary bank does not distribute new ADSs as described above, it may sell the Class A common shares received upon the terms described in the deposit agreement and will distribute the proceeds of the sale as in the case of a distribution of cash.

Distribution of Rights.

Whenever we intend to distribute rights to subscribe for additional Class A common shares, we will give prior notice to the depositary bank and we will assist the depositary bank in determining whether it is lawful and reasonably practicable to distribute rights to subscribe for additional ADSs to holders.

The depositary bank will establish procedures to distribute rights to subscribe for additional ADSs to holders and to enable such holders to exercise such rights if it is lawful and reasonably

practicable to make the rights available to holders of ADSs, and if we provide all of the documentation contemplated in the deposit agreement (such as opinions to address the lawfulness of the transaction). You may have to pay fees, expenses, taxes and other governmental charges to subscribe for the new ADSs upon the exercise of your rights. The depositary bank is not obligated to establish procedures to facilitate the distribution and exercise by holders of rights to subscribe for new Class A common shares other than in the form of ADSs.

The depositary bank will not distribute the rights to you if:

- We do not timely request that the rights be distributed to you or we request that the rights not be distributed to you; or
- We fail to deliver satisfactory documents to the depositary bank; or
- It is not reasonably practicable to distribute the rights.

The depositary bank will sell the rights that are not exercised or not distributed if such sale is lawful and reasonably practicable. The proceeds of such sale will be distributed to holders as in the case of a cash distribution. If the depositary bank is unable to sell the rights, it will allow the rights to lapse.

Elective Distributions.

Whenever we intend to distribute a dividend payable at the election of shareholders either in cash or in additional shares, we will give prior notice thereof to the depositary bank and will indicate whether we wish the elective distribution to be made available to you. In such case, we will assist the depositary bank in determining whether such distribution is lawful and reasonably practicable.

The depositary bank will make the election available to you only if it is reasonably practicable and if we have provided all of the documentation contemplated in the deposit agreement. In such case, the depositary bank will establish procedures to enable you to elect to receive either cash or additional ADSs, in each case as described in the deposit agreement.

If the election is not made available to you, you will receive either cash or additional ADSs, depending on what a shareholder in the Cayman Islands would receive upon failing to make an election, as more fully described in the deposit agreement.

Other Distributions.

Whenever we intend to distribute property other than cash, Class A common shares or rights to subscribe for additional Class A common shares we will notify the depositary bank in advance and will indicate whether we wish such distribution to be made to you. If so, we will assist the depositary bank in determining whether such distribution to holders is lawful and reasonably practicable.

If it is reasonably practicable to distribute such property to you and if we provide to the depositary bank all of the documentation contemplated in the deposit agreement, the depositary bank will distribute the property to the holders in a manner it deems practicable.

The distribution will be made net of fees, expenses, taxes and governmental charges payable by holders under the terms of the deposit agreement. In order to pay such taxes and governmental charges, the depositary bank may sell all or a portion of the property received.

The depositary bank will not distribute the property to you and will sell the property if:

- We do not request that the property be distributed to you or if we request that the property not be distributed to you; or
- We do not deliver satisfactory documents to the depositary bank; or
- The depositary bank determines that all or a portion of the distribution to you is not reasonably practicable.

The proceeds of such a sale will be distributed to holders as in the case of a cash distribution.

Deposit, Withdrawal and Cancellation

How are ADSs issued?

The depositary bank may create ADSs on your behalf if you or your broker deposit Class A common shares with the custodian. The depositary bank will deliver these ADSs to the person you indicate only after you pay any applicable issuance fees and any charges and taxes payable for the transfer of the Class A common shares to the custodian. Your ability to deposit Class A common shares and receive ADSs may be limited by U.S. and Cayman Islands legal considerations applicable at the time of deposit.

The issuance of ADSs may be delayed until the depositary bank or the custodian receives confirmation that all required approvals have been given and that the Class A common shares have been duly transferred to the custodian. The depositary bank will only issue ADSs in whole numbers.

When you make a deposit of Class A common shares, you will be responsible for transferring good and valid title to the depositary bank. As such, you will be deemed to represent and warrant that:

- The Class A common shares are duly authorized, validly issued, fully paid, non-assessable and legally obtained.
- All preemptive (and similar) rights, if any, with respect to such Class A common shares have been validly waived or exercised.
- You are duly authorized to deposit the Class A common shares.

- The Class A common shares presented for deposit are free and clear of any lien, encumbrance, security interest, charge, mortgage or adverse claim, and are not, and the ADSs issuable upon such deposit will not be, "restricted securities" (as defined in the deposit agreement).
- The Class A common shares presented for deposit have not been stripped of any rights or entitlements.

If any of the representations or warranties are incorrect in any way, we and the depositary bank may, at your cost and expense, take any and all actions necessary to correct the consequences of the misrepresentations.

Transfer, Combination and Split Up of ADRs

As an ADR holder, you will be entitled to transfer, combine or split up your ADRs and the ADSs evidenced thereby. For transfers of ADRs, you will have to surrender the ADRs to be transferred to the depositary bank and also must:

- ensure that the surrendered ADR is properly endorsed or otherwise in proper form for transfer;
- provide such proof of identity and genuineness of signatures as the depositary bank deems appropriate;
- provide any transfer stamps required by the State of New York or the United States; and
- pay all applicable fees, charges, expenses, taxes and other government charges payable by ADR holders pursuant to the terms of the deposit agreement, upon the transfer of ADRs.

To have your ADRs either combined or split up, you must surrender the ADRs in question to the depositary bank with your request to have them combined or split up, and you must pay all applicable fees, charges and expenses payable by ADR holders, pursuant to the terms of the deposit agreement, upon a combination or split up of ADRs.

Withdrawal of Class A Common Shares Upon Cancellation of ADSs

As a holder, you will be entitled to present your ADSs to the depositary bank for cancellation and then receive the corresponding number of underlying Class A common shares at the custodian's offices. Your ability to withdraw the Class A common shares held in respect of the ADSs may be limited by U.S. and Cayman Islands considerations applicable at the time of withdrawal. In order to withdraw the Class A common shares represented by your ADSs, you will be required to pay to the depositary bank the fees for cancellation of ADSs and any charges and taxes payable upon the transfer of the Class A common shares. You assume the risk for delivery of all funds and securities upon withdrawal. Once canceled, the ADSs will not have any rights under the deposit agreement.

If you hold ADSs registered in your name, the depositary bank may ask you to provide proof of identity and genuineness of any signature and such other documents as the depositary bank may deem appropriate before it will cancel your ADSs. The withdrawal of the Class A common shares represented by your ADSs may be delayed until the depositary bank receives satisfactory evidence of compliance with all applicable laws and regulations. Please keep in mind that the depositary bank will only accept ADSs for cancellation that represent a whole number of securities on deposit.

You will have the right to withdraw the securities represented by your ADSs at any time except for:

- Temporary delays that may arise because (i) the transfer books for the Class A common shares or ADSs are closed, or (ii) Class A common shares are immobilized on account of a shareholders' meeting or a payment of dividends.
- Obligations to pay fees, taxes and similar charges.
- Restrictions imposed because of laws or regulations applicable to ADSs or the withdrawal of securities on deposit.

The deposit agreement may not be modified to impair your right to withdraw the securities represented by your ADSs except to comply with mandatory provisions of law.

Voting Rights

How do you vote?

As a holder, you generally have the right under the deposit agreement to instruct the depositary bank to exercise the voting rights for the Class A common shares represented by your ADSs.

At our request, the depositary bank will distribute to you any notice of shareholders' meeting received from us together with information explaining how to instruct the depositary bank to exercise the voting rights of the securities represented by ADSs.

If the depositary bank timely receives voting instructions from a holder of ADSs, it will endeavor to vote the securities (in person or by proxy) represented by the holder's ADSs in accordance with such voting instructions as follows:

- In the event of voting by show of hands, the depositary bank will vote (or cause the custodian to vote) all Class A common shares held on deposit at that time in accordance with the voting instructions received from a majority of holders of ADSs who provide timely voting instructions.
- In the event of voting by poll, the depositary bank will vote (or cause the Custodian to vote) the Class A common shares held on deposit in accordance with the voting instructions received from the holders of ADSs.

In the event of voting by poll, holders of ADSs in respect of which no timely voting instructions have been received shall be deemed to have instructed the depositary bank to give a discretionary proxy to a person designated by us to vote the Class A common shares represented by such holders' ADSs; provided, that no such instructions shall be deemed given and no such discretionary proxy shall be given with respect to any matter as to which we inform the depositary bank that we do not wish such proxy to be given; provided, further, that no such discretionary proxy shall be given (x) with respect to any matter as to which we inform the depositary that (i) there exists substantial opposition, or (ii) the rights of holders of ADSs or the shareholders of our company will be materially adversely affected, and (y) in the event that the vote is on a show of hands.

Please note that the ability of the depositary bank to carry out voting instructions may be limited by practical and legal limitations and the terms of the securities on deposit. We cannot assure you that you will receive voting materials in time to enable you to return voting instructions to the depositary bank in a timely manner.

Compliance with Regulations

Information Requests

Each ADS holder and beneficial owner shall provide such information as we may request pursuant to applicable law, the rules and requirements of any stock exchange on which the shares or ADSs are or will be registered, traded or listed or the Memorandum and Articles of Association, regarding the capacity in which such holder or beneficial owner owns ADSs (and shares as the case may be) and capacity in which such Holder or Beneficial Owner owns ADSs (and Shares as the case may be) and regarding the identity of any other person interested in such ADSs and the nature of such interest and various other matters, whether or not they are holders and/or beneficial owners at the time of such request.

Disclosure of Interests

Each ADS holder and beneficial owner shall comply with our requests pursuant to Cayman Islands law, the rules and requirements of the Nasdaq Stock Market and any other stock exchange on which the common shares are, or will be, registered, traded or listed or our Memorandum and Articles of Association, which requests are made to provide information, inter alia, as to the capacity in which such ADS holder or beneficial owner owns ADS and regarding the identity of any other person interested in such ADS and the nature of such interest and various other matters, whether or not they are ADS holders or beneficial owners at the time of such requests.

Amendment and Termination

How may the deposit agreement be amended?

We may agree with the depositary bank to modify the deposit agreement at any time without your consent. We undertake to give holders 30 days' prior notice of any modifications that would materially prejudice any of their substantial rights under the deposit agreement. We will not consider to be materially prejudicial to your substantial rights any modifications or supplements

that are reasonably necessary for the ADSs to be registered under the Securities Act or to be eligible for book-entry settlement, in each case without imposing or increasing the fees and charges you are required to pay. In addition, we may not be able to provide you with prior notice of any modifications or supplements that are required to accommodate compliance with applicable provisions of law.

You will be bound by the modifications to the deposit agreement if you continue to hold your ADSs after the modifications to the deposit agreement become effective. The deposit agreement cannot be amended to prevent you from withdrawing the Class A common shares represented by your ADSs (except as permitted by law).

How may the deposit agreement be terminated?

We have the right to direct the depositary bank to terminate the deposit agreement. Similarly, the depositary bank may in certain circumstances on its own initiative terminate the deposit agreement. In either case, the depositary bank must give notice to the holders at least 30 days before termination. Until termination, your rights under the deposit agreement will be unaffected.

After termination, the depositary bank will continue to collect distributions received (but will not distribute any such property until you request the cancellation of your ADSs) and may sell the securities held on deposit. After the sale, the depositary bank will hold the proceeds from such sale and any other funds then held for the holders of ADSs in a non-interest bearing account. At that point, the depositary bank will have no further obligations to holders other than to account for the funds then held for the holders of ADSs still outstanding (after deduction of applicable fees, taxes and expenses).

Limitations on Obligations and Liability to ADR Holders

Limits on our Obligations and the Obligations of the Depositary and the Custodian; Limits on Liability to Holders of ADSs

The deposit agreement limits our obligations and the depositary bank's obligations to you. Please note the following:

- We and the depositary bank are obligated only to take the actions specifically stated in the deposit agreement without negligence or bad faith.
- The depositary bank disclaims any liability for any failure to carry out voting instructions, for any manner in which a vote is cast or for the effect of any vote, provided it acts in good faith and in accordance with the terms of the deposit agreement.
- The depositary bank disclaims any liability for any failure to determine the lawfulness or practicality of any action, for the content of any document forwarded to you on our behalf or for the accuracy of any translation of such a document, for the investment risks associated with investing in Class A common shares, for the validity or worth of the Class A common shares, for any tax consequences that result from the ownership of ADSs, for the credit-worthiness of any third party, for allowing any rights to lapse

under the terms of the deposit agreement, for the timeliness of any of our notices or for our failure to give notice.

- We and the depositary bank will not be obligated to perform any act that is inconsistent with the terms of the deposit agreement.
- We and the depositary bank disclaim any liability if we or the depositary bank are prevented or forbidden from or subject to any civil or criminal penalty or restraint on account of, or delayed in, doing or performing any act or thing required by the terms of the deposit agreement, by reason of any provision, present or future of any law or regulation, or by reason of present or future provision of any provision of our Articles of Association, or any provision of or governing the securities on deposit, or by reason of any act of God or war or other circumstances beyond our control.
- We and the depositary bank disclaim any liability by reason of any exercise of, or failure to exercise, any discretion provided for in the deposit agreement or in our Articles of Association or in any provisions of or governing the securities on deposit.
- We and the depositary bank further disclaim any liability for any action or inaction in reliance on the advice or information received from legal counsel, accountants, any person presenting Class A common shares for deposit, any holder of ADSs or authorized representatives thereof, or any other person believed by either of us in good faith to be competent to give such advice or information.
- We and the depositary bank also disclaim liability for the inability by a holder to benefit from any distribution, offering, right or other benefit that is made available to holders of Class A common shares but is not, under the terms of the deposit agreement, made available to you.
- We and the depositary bank may rely without any liability upon any written notice, request or other document believed to be genuine and to have been signed or presented by the proper parties.
- We and the depositary bank also disclaim liability for any consequential or punitive damages for any breach of the terms of the deposit agreement.
- No disclaimer of any Securities Act liability is intended by any provision of the deposit agreement.
- Nothing in the deposit agreement gives rise to a partnership or joint venture, or establishes a fiduciary relationship, among us, the depositary bank and you as ADS holder.
- Nothing in the deposit agreement precludes the depositary bank (or its affiliates) from engaging in transactions in which parties adverse to us or the ADS owners have interests, and nothing in the deposit agreement obligates the depositary bank to disclose those transactions, or any information obtained in the course of those

transactions, to us or to the ADS owners, or to account for any payment received as part of those transactions.

Requirements for Depositary Actions

Before the execution and delivery, the registration of issuance, transfer, split-up, combination or surrender of any ADS, the delivery of any distribution thereon, or the withdrawal of any deposited property, the depositary may require:

- payment from the depositor of shares or presenter of ADSs or of this ADR of a sum sufficient to reimburse it for any tax or other governmental charge and any stock transfer or registration fee with respect thereto and payment of any applicable ADS fees and charges;
- satisfactory proof of the identity and genuineness of any signature or any other matters contemplated in the deposit agreement; and
- compliance with (A) any laws or governmental regulations relating to the execution and delivery of ADRs or ADSs or to the withdrawal or delivery of deposited securities and (B) such reasonable regulations and procedures as the depositary may establish, from time to time, consistent with the deposit agreement and applicable laws, including presentation of transfer documents.

The depositary may refuse to issue and deliver ADSs or register transfers of ADSs generally when the register of the depositary or our transfer books are closed or at any time if the depositary or we determine that it is necessary or advisable to do so.

Your Right to Receive the Common Shares Underlying Your ADSs

You have the right to cancel your ADSs and withdraw the underlying common shares at any time except for:

- Temporary delays that may arise because (i) the transfer books for the Class A common shares or ADSs are closed, or (ii) Class A common shares are immobilized on account of a shareholders' meeting or a payment of dividends.
- Obligations to pay fees, taxes and similar charges.
- Restrictions imposed because of laws or regulations applicable to ADSs or the withdrawal of securities on deposit.

The depositary shall not knowingly accept for deposit under the deposit agreement any common shares or other deposited securities required to be registered under the provisions of the Securities Act, unless a registration statement is in effect as to such common shares.

This right of withdrawal may not be limited by any other provision of the deposit agreement.

Direct Registration System

In the deposit agreement, all parties to the deposit agreement acknowledge that the DRS and Profile Modification System, or Profile, will apply to uncertificated ADSs upon acceptance thereof to DRS by DTC. DRS is the system administered by DTC pursuant to which the depositary may register the ownership of uncertificated ADSs, which ownership shall be evidenced by periodic statements issued by the depositary to the ADS holders entitled thereto. Profile is a required feature of DRS which allows a DTC participant, claiming to act on behalf of an ADS holder, to direct the depositary to register a transfer of those ADSs to DTC or its nominee and to deliver those ADSs to the DTC account of that DTC participant without receipt by the depositary of prior authorization from the ADS holder to register such transfer.

English translation

Exclusive Service Agreement

This Exclusive Service Agreement (this “***Agreement***”) is made and entered into by and between the following parties on March 31, 2021:

(1) **Guangzhou AnSiChuang Information Technology Co., Ltd.** (“***Party A***”)
Registered address: Room 602, Building C Tower C, No. 274 Xingtai Road, Shiqiao Street,
Panyu District, Guangzhou
Legal representative: Wenzhi Cai

(2) **Guangzhou LianYiYun Information Technology Co., Ltd.** (“***Party B***”)
Registered address: Room 901, No. 131 Dongxing Road, Shiqiao, Panyu District, Guangzhou
Legal representative: Wenzhi Cai

Each of Party A and Party B shall be hereinafter referred to as a “Party” respectively, and as the “Parties” collectively.

PREAMBLE

1. Party A is a limited liability company registered and validly existing in Guangzhou, China, which engages in computer system service; information system integration services; the second category of value-added telecommunications services; information technology consulting services; software development; internet technology services; technical services, technology development, technology consulting, technology exchanges, technology transfer, technology promotion; the first category of value-added telecommunications services; technology import and export; goods import and export.

2. Party B is a wholly-foreign-owned enterprise registered and validly existing in Guangzhou, China, which engages in software development; software sales; information system integration services; information technology consulting services; software sales; corporate management; corporate management consulting; computer software and hardware and auxiliary equipment wholesale; computer software, hardware and auxiliary equipment retail.

3. Party A needs Party B to provide services related to the Party A Business, and Party B agrees to provide such services to Party A.

NOW, THEREFORE, the Parties have reached the following agreements:

1. DEFINITIONS

1.1 Unless otherwise provided, in this Agreement:

Party A's Business means all business activities that Party A currently operates and operates at any time during the term of this Agreement.

Services means services exclusively provided by Party B to Party A with respect to the Party A's Business, which may include but without limitation:

(a) Approval of Party A to use the software related to the Party A's Business that Party B has legal rights;

(b) Providing economic information, computer technology, commercial and management consulting or advices for Party A;

(c) Providing business planning, design, marketing plan;

(d) Daily management, maintenance and update of hardware equipment and databases or software resources and customer resources;

(e) Providing comprehensive operation and solution plan in information technology/operation management required by Party A's business;

(f) Software development, maintenance, and update which the Party A's Business requires;

(g) Providing business training, support and assistance of relevant personnel of Party A;

(h) Other relevant services that are required to be provided by Party A from time to time.

Service Fee means all the fees Party A shall pay to Party B for the Services Party B provides subject to Section 3.

Annual Business Plan means according to this Agreement, the Party A's Business development plan and budget report for the next calendar year prepared by Party A before November 30 of each year, with the assistance of Party B.

Business Related Intellectual Property Rights means any and all intellectual property rights related to the Party A's business developed by Party A on the basis of the services provided by Party B under this agreement.

Confidential Information has the meaning assigned to it in Section 6.1.

Defaulting Party has the meaning assigned to it in Section 12.1.

Default has the meaning assigned to it in Section 12.1.

Such Party's Right has the meaning assigned to it in Section 14.5.

1.2 Any referring to any law or statutory provision under this Agreement shall be deemed to:

(a) also include referring to any revision, extension, combination and replacement related to such law or provision; and

(b) also include referring to orders, ordinances, instructions and other subordinate legislation promulgated in accordance with relevant law or provisions.

1.3 All references in this Agreement to designated “Sections” and other subdivisions are to the designated Sections and other subdivisions of the body of this Agreement unless explicitly stated otherwise

2. SERVICES

2.1 During the term of this Agreement, Party A hereby exclusively engages Party B to provide the Services, and Party B shall provide the Services to Party A diligently pursuant to the requirement of Party A’s Business. Both Parties understand that, the actual Services provided by Party B shall be limited to the approved business scope of Party B; if the Services Party A requires exceed the approved business scope of Party B, Party B will apply for extension of its business scope under the maximum scope permitted by the laws, and will provide related Services after permission of such extension.

2.2 For the purpose of providing Services in accordance with this Agreement, Party B shall communicate with Party A and exchange various information related to the Party A’s Business.

2.3 Notwithstanding any other provisions of this Agreement, Party B is entitled to appoint any third party to provide any or all of the Services under this Agreement, or perform any obligations under this Agreement on behalf of Party B. Party A hereby agrees that Party B has the right to transfer or assign the rights and obligations of Party B under this Agreement to any third party.

3. SERVICE FEE

3.1 The Party A shall pay Party B the Service Fee for the Services contemplated in this Agreement as following:

3.1.1 After mutual consents between both Parties, for the Services provided by Party B to Party A in each calendar year within the term of this agreement, Party A shall pay Party B the relevant Service Fee on an annual basis; and

3.1.2 With respect to the Service Fee incurred by the specific Services Party B provided as required by Party A from time to time, after mutual consents between both Parties, Party A shall pay the Service Fee separately.

3.2 Party B shall issue a payment notice and value-added tax invoice to Party A in a timely manner, and calculate on an annual basis. Party A shall pay the Service Fee to Party B within one (1) month upon the receipt of Party B’s tax invoice.

3.3 Both Parties agree, without violating any mandatory requirement of any laws and regulations, the amount of the Service Fee and service scope as set forth in Section 3.1 and 3.2, may be confirmed and adjusted by both Parties in accordance with advices made by Party B from time to time.

3.4 The parties shall bear the taxes they shall pay and withhold the taxes (if any) in accordance with the applicable law.

4. PARTY A'S OBLIGATION

4.1 The Services provided by Party B is exclusive. During the term of this Agreement, without prior written consent of Party B, the Party A shall not enter into any agreement with any third party and accept any services identical or similar to the Services hereunder from any third party.

4.2 Party A shall provide the Annual Business Plan to Party B before November 30 of each year, to the extent that Party B could arrange Services plan and add necessary personnel and resources. If Party A requires personnel supplement temporarily, Party A shall negotiate with Party B with 15 days in advance to reach an agreement.

4.3 For better Services provided by Party B, Party A shall timely provide related materials that Party B requires.

4.4 Party A shall pay the Service Fee in a timely and sufficient manner in accordance with Section 3.

4.5 Party A should maintain its own good reputation, actively expand its business, and strive to maximize revenue.

4.6 During the term of this Agreement, Party A agrees to cooperate with Party B and Party B's parent company (including direct or indirect) to conduct related-party transaction audits and other audits, and provide Party B, its parent company, or its authorized auditors with information on Party A's operations, business, customers, finances, employees and other related information and materials, and agree that Party B's parent company shall disclose such information and materials in order to meet the regulatory requirements of the place where its securities are listed.

5. INTELLECTUAL PROPERTY RIGHTS

5.1 Party B shall have proprietary rights and interests in all rights, ownership, interests of the intellectual property rights it already has before entering into this Agreement, and created or arising out of providing of Services during the term of this Agreement.

5.2 Since the operation of Party A's Business depends on the Services provided by Party B under this Agreement, Party A agrees to the following arrangements regarding the Business Related Intellectual Property Rights developed by Party A on the basis of such Services:

(1) If the Business Related Intellectual Property Rights are developed by Party A entrusted by Party B, or obtained through cooperation between Party A and Party B, the ownership and the right to apply for related intellectual property rights shall belong to Party B.

(2) If the Business Related Intellectual Property Rights are independently developed and acquired by Party A, the ownership shall belong to Party A, provided that (A) Party A informs Party B of the details of the Business Related Intellectual Property Rights in a timely manner, and provides relevant information that Party B has reasonably requested; (B) If Party A wants to license or transfer such Business Related Intellectual Property Rights, Party A shall transfer to Party B or grant Party B an exclusive license prior to any third party, without violating the mandatory provisions of the laws of China, and Party B may use such Business Related Intellectual Property Rights within the scope of such transfer or license from Party A (but Party B has the right to decide whether to accept such transfer or license); Party A can only transfer or license the Business Related Intellectual Property Rights to a third party without offering more favorable conditions than which Party A offers to Party B (including but not limited to the transfer price or license fee) provided that Party B has waived the priority to purchase the ownership of the Business Related Intellectual Property Rights or the exclusive right to use the Business Related Intellectual Property Rights, and shall ensure that such third party fully complies with and performs the obligations of Party A under this Agreement; (C) Except for the circumstances mentioned in item (B) above, during the term of this Agreement, Party B has the right to purchase such Business Related Intellectual Property Rights; then Party A shall agree to Party B's such purchase request provided that there would be no violation of the mandatory provisions of the laws of China, and the purchase price shall be the lowest price allowed by the laws of China at that time.

5.3 If Party B is licensed to exclusively use the Business Related Intellectual Property Rights according to Section 5.2 (2) of this Agreement, such license shall be implemented in according with the following rules:

(1) Licensing period shall not be less than five (5) years (calculated from the effective date of relevant licensing agreement);

(2) The scope of license shall be the maximum scope as far as possible;

(3) Within the licensing period and scope of license, any other parties (include Party A) except Party B shall not use or license others to use the Business Related Intellectual Property Rights;

(4) Without prejudicing to Section 5.3 (3), Party A is entitled to, at its own discretion, license the Business Related Intellectual Property Rights to any other third parties;

(5) After expiration of licensing period, Party B is entitled to request the renewal of the license agreement and Party A shall agree to it. The terms of the license agreement shall remain unchanged, except for changes approved by Party B.

5.4 Notwithstanding Section 5.2 (2) above, if any Business Related Intellectual Property Rights described in such Section can be valid only after registration of ownership under applicable laws, then the application for registration of ownership shall be implemented in according with the following rules:

(1) Party A shall obtain prior written consent from Party B if Party A would apply for registration of ownership with regard to any Business Related Intellectual Property Rights described in such Section;

(2) Party A can only apply for registration of ownership on its own or transfer such right of applying for registration of ownership to a third party when Party B waives its right to purchase the right to apply for registration of ownership of the Business Related Intellectual Property Rights. In the case where Party A transfers the aforementioned right to apply for registration of ownership to a third party, Party A shall ensure that such third party will fully comply with and perform the obligations that Party A shall perform under this Agreement; meanwhile, the terms and conditions of the transfer (including but not limited to the transfer price) which Party A transfer the right to apply for registration of ownership to a third party shall not be more favorable than the terms and conditions proposed to Party B in accordance with Section 5.4 (3).

(3) During the term of this Agreement, Party B may request Party A to file an application for the registration of ownership of such Business Related Intellectual Property Rights at any time, and decide on its own whether to purchase the right to apply for such registration of ownership. Upon request of Party B, Party A shall transfer the right to apply for registration of ownership to Party B at that time, without violating the mandatory provisions of the laws of China, at the lowest price allowed by the laws of China; after Party B has obtained the right to apply for registration of ownership of the Business Related Intellectual Property Rights, filed the registration of ownership and completed the registration, Party B shall be the legal owner of such registration of ownership.

5.5 Both Parties respectively warrants to each other that they will compensate the other Party for any and all economic losses due to any infringement of the intellectual property rights of any third party.

6. CONFIDENTIALITY

6.1 Regardless of whether this Agreement is terminated or not, both parties shall strictly keep confidential the trade secrets, proprietary information, customer information and other confidential information of the other Party obtained during the execution and performance of this Agreement. Without the prior written consent from the disclosing Party, or mandatorily required to be disclosed to third party by relevant laws and regulations or the requirements of the listing place of a Party's related company, the receiving Party should not disclose any confidential information to any third party; unless for the purpose of performance of this Agreement, the receiving Party should not use or indirectly use any confidential information.

6.2 Confidential information shall not include information:

(a) is known to the Receiving Party prior to disclosure by the disclosing Party as demonstrated by documentary evidence;

(b) is or becomes available to the public other than as a result of the receiving Party's fault; or

(c) information obtained legally by the receiving Party from other sources after receiving confidential information.

6.3 The receiving Party may disclose confidential information to its relevant employees, agents or professionals engaged, provided the receiving Party shall ensure the abovementioned personnel be in compliance with the relevant terms and conditions of this Agreement and be liable for any responsibilities incurred by breach of the relevant terms and conditions of this Agreement by the abovementioned personnel.

6.4 Notwithstanding any other terms of this Agreement, this section shall still be valid and binding upon the termination of this Agreement.

7. REPRESENTATIONS AND WARRANTIES OF PARTY A

Party A represents and warrants to Party B as follows:

7.1 It is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to sign, deliver and perform this Agreement, and can independently act as a party to a litigation.

7.2 It has the full internal power and authorization to sign and deliver this Agreement and all other documents that it will sign related to the transactions described in this Agreement, and it has the full power and authorization to complete the transactions described in this Agreement. This Agreement is legally and appropriately signed and delivered by it. This Agreement constitutes the Party A's legal, valid and binding obligations, and shall be enforceable against it.

7.3 It shall promptly inform Party B of circumstances that have caused or may cause a material adverse effect on the Party A's Business and its operations, and shall use its best effort to prevent the occurrence of such circumstances and/or the expansion of losses.

7.4 Without the written consent of Party B, Party A will not, in any form, dispose of Party A's material assets, nor will it change Party A's existing equity structure.

7.5 Upon being effective of this Agreement, Party A has obtained all necessary business license, competent rights and qualification to conduct Party A's Business now engaged in the territory of China;

7.6 Once Party B submits a written request, Party A will use all accounts receivables and/or all other assets that are legally owned and can be disposed of at that time, in a manner permitted by law, as guarantee of payment obligation of the Service Fee set forth in Section 3 of this Agreement.

7.7 Without the written consent of Party B, Party A shall not enter into any other agreement or arrangement that conflicts with this Agreement or may damage Party B's rights and interests under this Agreement.

8. REPRESENTATIONS AND WARRANTIES OF PARTY B

Party B represents and warrants to Party A as follows:

8.1 It is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to sign, deliver and perform this Agreement, and can independently act as a party to a litigation.

8.2 It has the full internal power and authorization to sign and deliver this Agreement and all other documents that it will sign related to the transactions described in this Agreement, and it has the full power and authorization to complete the transactions described in this Agreement. This Agreement is legally and appropriately signed and delivered by it. This Agreement constitutes the Party B’s legal, valid and binding obligations, and shall be enforceable against it.

9. TERM

9.1 This Agreement takes effect as of the date of execution. Unless otherwise provided in this Agreement, or this Agreement terminated by Party B in writing, the term of this Agreement shall be twenty (20) years. After the expiration of this Agreement, unless Party B informs Party A 30 days in advance that this Agreement will not be renewed, this Agreement will be automatically renewed for one year after the expiration of the term, and so on.

9.2 If Party A or Party B fails to complete the approval and registration procedures for extending the business term at the expiration of the business term, this Agreement shall be terminated on the date when the business term of Party A or B expires. Both Parties shall complete the approval and registration procedures for extending the business term within three months before the expiration of their respective business term, to the extent that the term of this Agreement could be extended.

9.3 After the termination of this Agreement, both Parties shall still abide by their obligations under Section 6 of this Agreement.

10. INDEMNIFICATION

The Party A shall indemnify and hold harmless Party B from all the losses including but not limited to any losses caused by any lawsuit, claims, arbitration, damages by any third party or governmental investigation and penalties against Party B arising from providing the Services. However, if the losses are caused by Party B's willful conduct or gross negligence, such losses shall not be included in the indemnification.

11. NOTICE

11.1 All the notices, request, requirement and other communications pursuant to this Agreement shall be delivered to the relevant Party in written form.

11.2 Abovesaid notices or other notices if given by facsimile transmission or e-mail, shall be deemed effectively given upon successful transmission; if given by person, shall be deemed effectively given upon delivery by person; if given by post, shall be deemed effectively given on the date after two (2) days from posting.

12. DEFAULT

12.1 Both Parties agree and confirm that, if any Party ("**Defaulting Party**") materially violates any of the terms under this Agreement, or fails to perform, incompletely perform or delays the performance of any of the obligations under this Agreement, it shall constitute a breach of this Agreement ("**Default**"). The other Party has the right to request Defaulting Party to make amendments or remedies within reasonable period. If the Defaulting Party fails to make amendments or remedies within reasonable period or ten (10) days after the other Party sends a written notice to Party B and requests for amendments, and if Party A is the Defaulting Party, then Party B is entitled to decide at its own discretion: (1) to terminate this Agreement, and requires Defaulting Party to compensate all the losses; or (2) requires the mandatory performance of Defaulting Party 's obligations under this Agreement, and requires the Defaulting Party to compensate all the losses; if Party B is the Defaulting Party, then Party A is entitled to require the performance of the Defaulting Party 's obligations under this Agreement, and require the Defaulting Party to compensate all the losses.

12.2 Notwithstanding the foregoing Section 12.1, both Parties agree and confirm that, except as otherwise provided by law, Party A shall not unilaterally terminate this Agreement in any circumstances.

12.3 Notwithstanding any other terms of this Agreement, the validity of this Section 12 shall not be affected by the termination of this Agreement.

13. FORCE MAJEURE

If the performance of this Agreement by any Party is affected or any Party delays or fails to perform its obligation hereunder due to earthquake, typhoon, flood, fire, war, computer virus, design vulnerabilities of instrumental software, hacker attack on internet, modification of governmental policy or laws, and other exceptional situation that cannot be overcome or avoided by the Parties and cannot be foreseen by the Party alleged to be affected by such force majeure, the Party being affected shall immediately notify

the other Party by facsimile and provide proof of the details of the force majeure and the reasons why this Agreement cannot be implemented or the performance needs to be delayed. Such proof documents must be issued by a notary institution in the jurisdiction where the force majeure occurred. Based on the extent of the force majeure event's impact on the performance of this Agreement, the two Parties shall negotiate whether the performance of this Agreement should be partially waived or postponed. Neither Party shall be liable for compensation for the economic losses caused to both Parties by the force majeure event.

14. MISCELLANEOUS PROVISIONS

14.1 This Agreement is executed in the Chinese language. This Agreement may be executed in five (5) counterparts, which Party A keeps one (1) counterpart, one (1) counterpart for governmental approval or registration, and Party B keeps other three (3) counterparts.

14.2 This Agreement, including the execution, validity, performance, interpretation and dispute resolution of this Agreement, shall be governed by and construed in accordance with the laws of China

14.3 Dispute Resolution

14.3.1 The Parties shall firstly attempt to resolve any and all disputes arising out of or relating to this Agreement through friendly consultations. If a dispute is not resolved through friendly consultations, then each Party may submit the dispute to Guangzhou Arbitration Commission for arbitration in accordance with then effective arbitration rules of such commission. The arbitration shall be conducted in Guangzhou. The award of the arbitration tribunal shall be final and binding upon the Parties. The costs of arbitration shall be borne by the losing Party, unless otherwise determined by the arbitration tribunal.

14.3.2 When any dispute is under arbitration, except for the matters in dispute, the Parties shall continue to fulfil their respective obligations under this Agreement.

14.4 Any rights, powers and remedies granted to both Parties by any terms of this Agreement shall not exclude any other rights, powers or remedies that the Party is entitled to in accordance with the laws and other terms under this Agreement, and one Party's exercise of its rights, powers and remedies does not preclude such Party from exercising other rights, powers and remedies.

14.5 A Party's failure to exercise or delay in exercising any of its rights, powers and remedies ("**Such Party's Rights**") under this Agreement or the laws will not result in the waiver of such rights, and any single or partial waiver of Such Party's Rights will not exclude such Party's exercise of such rights in other manner and the exercise of other Such Party's Rights.

14.6 The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

14.7 Each provision of this Agreement shall be severable and independent. If any single or multiple provisions hereof become invalid, illegal or unenforceable in any aspect, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be affected in any aspect.

14.8 This Agreement once executed shall supersede all prior agreements both Parties executed before, with respect to the subject matter hereof and thereof. Any amendment and supplements to this Agreement shall be made in writing, and only takes effect after the execution by all Parties hereunder, except for Party B's transfer of its rights under Section 14.9 of this Agreement.

14.9 Without the prior written consent of Party B, Party A has no right to transfer or assign any of its rights and obligations hereunder to any third party. Party A hereby agrees that Party B may transfer its rights and obligations under this Agreement to a third party, and that Party B only needs to send a written notice to the Party A of such transfer, and there is no need to obtain consent from the Party A for such transfer.

14.10 This Agreement shall be binding upon the respective successors, assigns, creditors and other person who may acquire the equity or relevant rights of the Parties.

14.11 The taxes applicable to the execution and performance of this Agreement shall be borne by the respective Party.

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This page is the signature page of the Exclusive Service Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Party A:

Guangzhou AnSiChuang Information Technology Co., Ltd. (seal)
/seal/ Guangzhou AnSiChuang Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

This page is the signature page of the Exclusive Service Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Party B:

Guangzhou LianYiYun Information Technology Co., Ltd. (seal)
/seal/ Guangzhou LianYiYun Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

Exhibit 4.95

English translation

Exclusive Option Agreement

This Exclusive Option Agreement (this "***Agreement***"), dated March 31, 2021, is entered into by and between:

1. **Wenzhi Cai** ("***Existing Shareholder***")
Identity Card Number: ******
Residence address: ******

2. **Guangzhou AnSiChuang Information Technology Co., Ltd.** ("***Company***")
Registered address: Room 602, Building C Tower C, No. 274 Xingtai Road, Shiqiao Street, Panyu District, Guangzhou
Legal representative: Wenzhi Cai

3. **Guangzhou LianYiYun Information Technology Co., Ltd.** ("***WFOE***")
Registered address: Room 901, No. 131 Dongxing Road, Shiqiao, Panyu District, Guangzhou
Legal representative: Wenzhi Cai

The parties above shall be hereinafter individually referred to as a "Party"; collectively, the "Parties".

PREAMBLE

1. The Existing Shareholder is the registered shareholder of the Company and holds all the equity shares of the Company. As of the date hereof, the capital amount of the registered capital of the Company by the Existing Shareholder is RMB10,000,000, and the shares percentage by the Existing Shareholder is 100%. The basic information of the Company is shown as Exhibit A.

2. The Existing shareholder intends to transfer all of its equity in the Company to the WFOE and/or its designated entities and/or individuals without violating the PRC Laws, and the WFOE intends to accept such transfer by itself or other entities and/or individuals appointed by it.

3. The Company intends to transfer all of the assets held by it to the WFOE and/or its designated entities and/or individuals without violating the PRC Laws, and the WFOE intends to accept such transfer by itself or other entities and/or individuals appointed by it.

4. In order to fulfill the above-mentioned share or asset transfer, the Existing Shareholder and the Company agree to separately and exclusively grant irrevocable share purchase option and asset purchase option to the WFOE. According to such share purchase option and asset purchase option, subject to the PRC Laws, the Existing Shareholder or the Company shall, in accordance with the requirements of the WFOE, transfer the Option Shares or Company Assets (as defined below) to the WFOE and/or any other entity and/or individual designated by the WFOE in accordance with the provisions of this Agreement; in order to fulfill the above-mentioned capital reduction and capital increase of the Company, the Existing

Shareholder and the Company agree to grant an irrevocable share subscription option to the WFOE. According to such share subscription option, subject to the PRC Laws, the Company shall, in accordance with the requirements of the WFOE, reduce the capital of the Company, and the Capital Increase Shares (as defined below) shall be subscribed by the WFOE and/or any other entity and/or individual designated by the WFOE in accordance with the provisions of this Agreement

5. The Company agrees the Existing Shareholder to grant the WFOE the Shares Purchase Option (as defined below) pursuant to the terms and conditions of this Agreement.

6. The Existing Shareholder agrees the Company to grant the WFOE the Assets Purchase Option (as defined below) pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, the Parties agree as follows through negotiations:

1. DEFINITIONS

1.1 Definitions. Unless otherwise provided, in this Agreement:

PRC Laws means the then effective laws, administrative regulations, local regulations, judicial interpretation and other binding regulatory documents of the People’s Republic of China.

Shares Purchase Option means the option to purchase the shares of the Company granted by the Existing Shareholder to the WFOE pursuant to the terms and conditions of this Agreement.

Assets Purchase Option means the option to purchase the assets of the Company granted by the Company to the WFOE pursuant to the terms and conditions of this Agreement.

Shares Subscription Option means the option to request the Company reduce its capital (the amount shall be part of or all of the Option Shares (as defined below)), and to subscribe increased capital of the Company by the WFOE or other entities and/or individuals appointed by it .

Option Shares means all the shares of the Company Register Capital (as defined below) held by the Existing Shareholder, namely the shares of 100% of the Company Register Capital.

Company Registered Capital means as the date hereof, the registered capital of the Company at the amount of RMB10,000,000, also include the increased registered capital by any form of capital increase during the term of this Agreement.

Transfer Shares means when the WFOE exercises its Shares Purchase Option, it is entitled to require the Existing Shareholder to transfer the shares of the Company to it and/or its designated entity and/or individual in accordance with the provisions of Section 3 of this Agreement. The number of which may be all or part of the Option Shares, and the specific number shall be freely determined by the WFOE in accordance with the PRC laws and its own commercial considerations.

Transfer Assets means when the WFOE exercises its Assets Purchase Option, it is entitled to require the Company to transfer the assets of the Company to it and/or its designated entity and/or individual in accordance with the provisions of Section 3 of this Agreement. It may be all or part of the Company Assets, and shall be freely determined by the WFOE in accordance with the PRC laws and its own commercial considerations.

Increased Capital Shares means when the WFOE exercises its Shares Subscription Option before or after the reduction of capital of the Company, the WFOE and/or its designated entity and/or individual is entitled to subscribe the newly increased capital of the Company in accordance with the provisions of Section 3 of this Agreement. The specific number of which shall be freely determined by the WFOE in accordance with the PRC laws and its own commercial considerations.

Exercise means the WFOE exercises its Shares Purchase Option, Assets Purchase Option and Shares Subscription Option.

Transfer Price means in each Exercise, all the considerations that need to be paid by the WFOE and/or its designated entity and/or individual to the Existing Shareholder or the Company in order to obtain the Transfer Shares or Transfer Assets.

Capital Reduction Price means in each Exercise, all the considerations that the Company needs to pay to the Existing Shareholder in respect of the reduction of Company Register Capital.

Capital Increase Price means in each Exercise, all the considerations that need to be paid by the WFOE and/or its designated entity and/or individual to the Company for subscription of the Increased Capital Shares.

Business License means any approvals, permits, filings and registrations that the company must hold in order to operate all its businesses legally and effectively, including but not limited to "Enterprise Entity Business License" and other relevant permits and licenses required by the PRC Laws then.

Company Assets means all the tangible and intangible assets the Company owned or has the right to dispose, including but not limited to any real estate, moveable properties, and intellectual properties such as trademarks, copyrights, patents, domain names, software use rights.

Material Contracts means the contracts Company as a party have material effects on the Company's business or assets, including but not limited to the Exclusive Service Agreement signed by the Company and the WFOE simultaneously with this Agreement and other material contracts about the Company's business.

Exercise Notice has the meaning assigned to it in Section 3.9.

Confidential Information has the meaning assigned to it in Section 8.1.

Defaulting Party has the meaning assigned to it in Section 11.1.

Default has the meaning assigned to it in Section 11.1.

Non-defaulting Party has the meaning assigned to it in Section 11.1.

Such Party's Right has the meaning assigned to it in Section 12.5.

1.2 Any referring to any law or statutory provision under this Agreement shall be deemed to:

(a) also include referring to any revision, extension, combination and replacement related to such law or provision; and

(b) also include referring to orders, ordinances, instructions and other subordinate legislation promulgated in accordance with relevant law or provisions.

1.3 All references in this Agreement to designated "Sections" and other subdivisions are to the designated Sections and other subdivisions of the body of this Agreement unless explicitly stated otherwise

2. GRANT OF SHARES PURCHASE OPTION AND ASSETS PURCHASE OPTION

2.1 The Existing Shareholder hereby agree to exclusively grant an irrevocable Shares Purchase Option to the WFOE without any additional condition. According to such Share Purchase Option, subject to the PRC Laws, the WFOE is entitled to require the Existing Shareholder transfer the Option Shares to the WFOE and/or any other entity and/or individual designated by the WFOE at any time (including but not limited to when the WFOE, after its independent judgment, believes that the Existing Shareholder is at risk of transferring all or part of the Option Shares it hold to any third party in accordance with the requirements of the PRC Laws, other than to the WFOE and/or its designated entity and/or individual) in accordance with the provisions of this Agreement. The WFOE agrees to accept such Shares Purchase Option.

2.2 The Company hereby agrees the Existing Shareholder grant such Shares Purchase Option to the WFOE in accordance with the Section 2.1 above and other provisions of this Agreement.

2.3 The Company hereby agrees to exclusively grant an irrevocable Assets Purchase Option to the WFOE without any additional condition. According to such Assets Purchase Option, subject to the PRC Laws, the WFOE is entitled to require the Company transfer all of or part of the Company Assets to the WFOE and/or any other entity and/or individual designated by the WFOE at any time (including but not limited to when the WFOE, after its independent judgment, believes that the Existing Shareholder is at risk of transferring all or part of the Option Shares it hold to any third party in accordance with the requirements of the PRC Laws, other than to the WFOE and/or its designated entity and/or individual) in accordance with the provisions of this Agreement. The WFOE agrees to accept such Assets Purchase Option.

2.4 The Existing Shareholder hereby agrees the Company grant such Assets Purchase Option to the WFOE in accordance with the Section 2.3 above and other provisions of this Agreement.

3. Exercise Methods

3.1 Subject to the terms and conditions of this Agreement, as permitted by the PRC Laws, the WFOE has absolute discretion to determine the specific time, method and frequency of Exercise.

3.2 Subject to the terms and conditions of this Agreement, the WFOE has the right to request the purchase of all or part of the Company's shares from the Existing Shareholder by itself and/or through other entities and/or individuals designated by the WFOE at any time without violating the PRC laws then effective.

3.3 Subject to the terms and conditions of this Agreement, the WFOE has the right to request the purchase of all or part of the Company's assets from the Company by itself and/or through other entities and/or individuals designated by the WFOE at any time without violating the PRC laws then effective.

3.4 As for the Shares Purchase Option, at each Exercise, the WFOE has the right to decide the number of shares that the Existing Shareholder should transfer to the WFOE and/or through other entities and/or individuals designated by the WFOE during such Exercise, and the Existing Shareholder shall respectively transfer the Transfer Shares to the WFOE and/or through other entities and/or individuals designated by the WFOE according to the number required by the WFOE. The WFOE and/or through other entities and/or individuals designated by the WFOE shall pay the Transfer Price to the Existing Shareholder who have transferred the Transfer Shares in respect of the Transfer Shares purchased in each Exercise.

3.5 As for the Assets Purchase Option, at each Exercise, the WFOE has the right to decide the specific Company Assets that the Company should transfer to the WFOE and/or through other entities and/or individuals designated by the WFOE during such Exercise, and the Company shall transfer the Transfer Assets to the WFOE and/or through other entities and/or individuals designated by the WFOE according to the number required by the WFOE. The WFOE and/or through other entities and/or individuals designated by the WFOE shall pay the Transfer Price to the Company in respect of the Transfer Assets purchased in each Exercise.

3.6 At each Exercise, the WFOE could purchase the Transfer Shares or Transfer Assets by itself, and could designate any third party to purchase all or part of the Transfer Shares or Transfer Assets.

3.7 At each time the WFOE decide the Exercise, it shall delivery to the Existing Shareholder and/or the Company a Shares Purchase Option exercise notice, Assets Purchase Option exercise notice or Shares Subscription Option exercise notice (the "Exercise Notice", in the form respectively set forth in Exhibit B, Exhibit C and Exhibit D). Upon receipt of the Exercise Notice, the Existing Shareholder or the Company shall immediately transfer the Transfer Shares or Transfer Assets to the WFOE and/or through other entities and/or individuals designated by the WFOE in one time in accordance with the method described in Section 3.4 or 3.5 of this Agreement.

4. TRANSFER PRICE, CAPITAL REDUCTION PRICE AND CAPITAL INCREASE PRICE

4.1 As for the Shares Purchase Option, at each Exercise, the total Transfer Price that the WFOE and/or through other entities and/or individuals designated by the WFOE should pay to the Existing Shareholder shall be the actual paid-in capital contribution corresponding to the relevant Transfer Shares in the Company's registered capital. If the minimum price allowed by the PRC Laws at that time is higher than the aforementioned actual paid-in capital, the minimum price allowed by the PRC Laws shall prevail. Under the premise of complying with the PRC Laws, the Existing Shareholder shall immediately return and gift it to the WFOE and/or its designated entity after receiving the Transfer Price.

4.2 As for the Assets Purchase Option, at each Exercise, the total Transfer Price that the WFOE and/or through other entities and/or individuals designated by the WFOE should pay to the Existing Shareholder shall be the net book value of the relevant assets. If the minimum price allowed by the PRC Laws at that time is higher than the aforementioned net book value, the minimum price allowed by the PRC Laws shall prevail. Under the premise of complying with the PRC Laws, the Existing Shareholder shall immediately return and gift it to the WFOE and/or its designated entity after receiving the Transfer Price.

4.3 All taxes and fees arising from the Exercise of the Shares Purchase Option, Assets Purchase Option or Shares Subscription Option under this Agreement in accordance with applicable laws, shall be paid by each Party or withheld in accordance with the laws.

5. REPRESENTATIONS AND WARRANTIES

5.1 The Existing Shareholder represent and warrant as follows:

(a) The Existing Shareholder have the full internal power and authorization to sign and deliver this Agreement and all other documents that it will sign related to the transactions described in this Agreement, and it have the full power and authorization to complete the transactions described in this Agreement.

(b) This Agreement constitutes the Existing Shareholder' legal, valid and binding obligations, and shall be enforceable against them.

(c) The Existing Shareholder is the registered legal owner of the Option Shares when this Agreement becomes effective. Except for the Shares Purchase Option, Shares Subscription Option, the pledge contemplated in the Share Pledge Agreement by and among the Company, the WFOE and the Existing Shareholder dated March 31, 2021 and the entrustment contemplated in the Shareholder Voting Rights Proxy Agreement dated March 31, 2021 , there is no liens, pledges, claims and other security rights and third-party rights on the Option Shares. According to this Agreement, after the Exercise by the WFOE and/or through other entities

and/or individuals designated by the WFOE, it can obtain good ownership of the Transfer Shares without any lien, pledge, claim, other security rights and third-party rights.

(d) The Company is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to execute, deliver and perform this Agreement, and can independently act as a party to a litigation.

(e) Except for the Assets Purchase Option, there is no liens, pledges, claims and other security rights and third-party rights on the Company Assets. According to this Agreement, after the Exercise by the WFOE and/or through other entities and/or individuals designated by the WFOE, it can obtain good ownership of the Company Assets without any lien, pledge, claim, other security rights and third-party rights.

5.2 The Company represents and warrants as follows:

(a) The Company is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to execute, deliver and perform this Agreement, and can independently act as a party to a litigation.

(b) The Company has the full internal power and authorization to sign and deliver this Agreement and all other documents that it will sign related to the transactions described in this Agreement, and it has the full power and authorization to complete the transactions described in this Agreement.

(c) This Agreement is legally and duly executed and delivered by the Company. This Agreement constitutes the Company’s legal, valid and binding obligations, and shall be enforceable against it.

(d) Except for the Assets Purchase Option, there is no liens, pledges, claims and other security rights and third-party rights on the Company Assets. According to this Agreement, after the Exercise by the WFOE and/or through other entities and/or individuals designated by the WFOE, it can obtain good ownership of the Company Assets without any lien, pledge, claim, other security rights and third-party rights.

5.3 The WFOE represents and warrants as follows:

(a) The WFOE is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to execute, deliver and perform this Agreement, and can independently act as a party to a litigation.

(b) The WFOE has the full internal power and authorization to sign and deliver this Agreement and all other documents that it will sign related to the transactions described in this Agreement, and it has the full power and authorization to complete the transactions described in this Agreement.

(c) This Agreement is legally and duly executed and delivered by the WFOE. This Agreement constitutes the WFOE's legal, valid and binding obligations, and shall be enforceable against it.

6. EXISTING SHAREHOLDER' COVENANTS

The Existing Shareholder irrevocably undertake as follows:

6.1 During the term of this Agreement, without prior written consent of the WFOE:

(a) It shall not transfer or dispose of any Option Shares in any other way or set any security right or other third party rights on any Option Shares;

(b) It shall not increase or decrease the Company Registered Capital, or cause the Company to merge with any other entity;

(c) It shall not dispose of or procure the Company's management to dispose of any material Company Assets (except those occur in the ordinary course of business);

(d) It shall not terminate or procure the Company's management to terminate any material agreement signed by the Company, or enter into any other agreement that conflicts with existing material agreements;

(e) It shall not appoint or remove any Company's directors, supervisors or other company's managers who should be appointed or removed by the Existing Shareholder;

(f) It shall not procure the company to declare or actually distribute any distributable profits or dividends;

(g) It shall not take any actions (including any omissions) that will affect the effective existence of the Company; nor take any actions that may make the Company to be terminated, liquidated or dissolved;

(h) It shall not amend the articles and associations of the Company; and

(i) It shall not take any actions (including any omissions) that make the company lend or borrow loans, or provide guarantees or make other forms of guarantees, or undertake any substantial obligations outside of ordinary business activities.

6.2 During the term of this Agreement, it must use its best efforts to develop the Company's business and ensure the Company's operation is in compliance with the laws and regulations. It will not conduct any action or omission that may damage the Company's assets, goodwill or affect the validity of the Company's business licenses.

6.3 During the term of this Agreement, it shall promptly inform the WFOE of any situation that may have a material adverse effect on the Company's existence, business operations, financial conditions, assets or goodwill, and promptly take all measures agreed by the WFOE to eliminate such unfavorable situations or take effective remedial measures.

6.4 Once the WFOE issues the Exercise Notice:

(a) It shall immediately adopt shareholder decisions and take all other necessary actions to agree the Existing Shareholder or the Company to transfer all Transfer Shares or Transfer Assets to the WFOE and/or through other entities and/or individuals designated by the WFOE at the Transfer Price, or agree the reduction of the Company's capital, and accept the WFOE and/or through other entities and/or individuals designated by the WFOE to subscribe for the Increased Capital Shares of the Company (depending on the situation);

(b) With respect to the Shares Purchase Option, it shall immediately sign an shares transfer agreement with the WFOE and/or through other entities and/or individuals designated by the WFOE, transfer all the Transfer Shares to the WFOE and/or through other entities and/or individuals designated by the WFOE at the Transfer Price, and provide the WFOE with the necessary support in accordance with the requirements of the WFOE and the provisions of laws and regulations (including providing and signing all relevant legal documents, and fulfilling all government approvals and registration procedures and assume all relevant obligations) so that the WFOE and/or through other entities and/or individuals designated by the WFOE can obtain all the Transfer Shares, and there should be no legal flaws in such Transfer Shares and there should be no security rights, third-party restrictions or any other restrictions on shares;

(c) With respect to the Shares Subscription Option, the Existing Shareholder shall immediately sign an capital reduction agreement with the Company in a form and substance to the satisfactory of the WFOE, the Existing Shareholder shall assist and cooperate with the Company to implement capital reduction procedure (including notifying creditors, making public announcement of capital reduction, signing all relevant legal documents, and fulfilling all government approvals and registration procedures and assume all relevant obligations) so that the Company could complete the capital reduction successfully, and the WFOE and/or through other entities and/or individuals designated by the WFOE could complete the subscription of the Increased Capital Shares.

6.5 If the Transfer Price received by the Existing Shareholder for the Transfer Shares held by them, the Capital Reduction Price received as a result of the Company's capital reduction, and/or the amounts received from distribution of the Company's remaining assets when the company is terminated or liquidated, are higher than the capital contributions to the Company by them, or receives any form of

profits distribution or dividends from the Company, then the Existing Shareholder agrees and confirms that it will not be entitled to the income and profits distribution or dividends from the premium (after deduction of relevant taxes) without violating the PRC Laws, and such portion of the income and profits distribution or dividends should be attributed to the WFOE. The Existing shareholder shall instruct the relevant transferee or the Company to pay such portion of the proceeds to the bank account then designated by the WFOE.

6.6 It irrevocably agrees to the Company's execution and performance of this Agreement, and provide the Company with all cooperation in the execution and performance of this Agreement, including but not limited to signing all necessary documents or documents required by the WFOE, and taking all necessary or actions required by the WFOE, and no action or omission will be taken to prevent the WFOE from claiming and realizing its rights under this Agreement.

6.7 Once it knows or should be aware that the Option Shares it holds may be transferred to any third party other than the WFOE and/or through other entities and/or individuals designated by the WFOE due to applicable laws, judgments or awards of courts or arbitration institution, or for any other reason, it should immediately and without hesitation notify the WFOE.

7. COMPANY’S COVENANTS

7.1 The Company irrevocably undertakes as follows:

(a) If the execution and performance of this Agreement and the granting of Shares Purchase Option, Assets Purchase Option or Shares Subscription Option under this Agreement require the consent, permission, waiver, authorization of any third party, or the approval, permission, exemption or approval of any government authorities, or the registration or filing procedures with any government authorities (if required by the Laws), the company will use its best effort to assist in meeting the above conditions.

(b) Without prior written consent of the WFOE, it shall not assist or allow the Existing Shareholder transfer or dispose of any Option Shares in any other way or set any security right or other third party rights on any Option Shares.

(c) Without prior written consent of the WFOE, it shall not transfer or dispose of any material Company Assets (except those occur in the ordinary course of business) in any other way or set any security right or other third party rights on any Company Assets.

(d) The Company shall not carry out or allow any behavior or action that may adversely affect the interests of the WFOE under this Agreement, including but not limited to any behavior and action restricted by Section 6.1.

(e) Once it knows or should be aware that the Option Shares hold by the Existing Shareholder may be transferred to any third party other than the WFOE and/or through other entities and/or individuals designated by the WFOE due to applicable laws, judgments or awards of courts or arbitration institution, or for any other reason, it should immediately and without hesitation notify the WFOE.

7.2 Once the WFOE issues the Exercise Notice:

(a) The Company shall immediately procure the Existing Shareholder to adopt shareholders decisions and take all other necessary actions to agree the Company to transfer all Transfer Assets to the WFOE and/or through other entities and/or individuals designated by the WFOE at the Transfer Price, or agree the reduction of the Company's capital, and accept the WFOE and/or through other entities and/or individuals designated by the WFOE to subscribe for all the Increased Capital Shares of the Company (depending on the situation);

(b) With respect to the Assets Purchase Option, the Company shall immediately sign an assets transfer agreement with the WFOE and/or through other entities and/or individuals designated by the WFOE, transfer all the Transfer Assets to the WFOE and/or through other entities and/or individuals designated by the WFOE at the Transfer Price, and procure the Existing Shareholder to provide the WFOE with necessary support in accordance with the requirements of the WFOE and the provisions of laws and regulations (including providing and signing all relevant legal documents, and fulfilling all government approvals and registration procedures and assume all relevant obligations) so that the WFOE and/or through other entities and/or individuals designated by the WFOE can obtain all the Transfer Assets, and there should be no legal flaws in such Transfer Assets and there should be no security rights, third-party restrictions or any other restrictions on Company Assets.

8. CONFIDENTIALITY

8.1 Regardless of whether this Agreement is terminated or not, both parties shall strictly keep confidential the trade secrets, proprietary information, customer information and other confidential information of the other Party obtained during the execution and performance of this Agreement. Without the prior written consent from the disclosing Party, or mandatorily required to be disclosed to third party by relevant laws and regulations or the requirements of the listing place of a Party's related company, the receiving Party should not disclose any confidential information to any third party; unless for the purpose of performance of this Agreement, the receiving Party should not use or indirectly use any confidential information.

8.2 Confidential information shall not include information:

(a) is known to the Receiving Party prior to disclosure by the disclosing Party as demonstrated by documentary evidence;

(b) is or becomes available to the public other than as a result of the receiving Party's fault; or

(c) information obtained legally by the receiving Party from other sources after receiving confidential information.

8.3 The receiving Party may disclose confidential information to its relevant employees, agents or professionals engaged, provided the receiving Party shall ensure the abovementioned personnel be in compliance with the relevant terms and conditions of this Agreement and be liable for any responsibilities incurred by breach of the relevant terms and conditions of this Agreement by the abovementioned personnel.

8.4 Notwithstanding any other terms of this Agreement, this section shall still be valid and binding upon the termination of this Agreement.

9. TERM

This Agreement takes effect as of the date of execution. Unless otherwise required by the WFOE, this Agreement will terminate after all the Option Shares and Company Assets are legally transferred to the WFOE and/or through other entities and/or individuals designated by the WFOE in accordance with this Agreement.

10. NOTICE

10.1 All the notices, request, requirement and other communications pursuant to this Agreement shall be delivered to the relevant Party in written form.

10.2 Abovesaid notices or other notices if given by facsimile transmission or e-mail, shall be deemed effectively given upon successful transmission; if given by person, shall be deemed effectively given upon delivery by person; if given by post, shall be deemed effectively given on the date after two (2) days from posting.

11. DEFAULT

11.1 Both Parties agree and confirm that, if any Party (“**Defaulting Party**”) materially violates any of the terms under this Agreement, or fails to perform, incompletely perform or delays the performance of any of the obligations under this Agreement, it shall constitute a breach of this Agreement (“**Default**”). Any Party of the other non-defaulting Party (“**Non-Defaulting Party**”) has the right to request Defaulting Party to make amendments or remedies within reasonable period. If the Defaulting Party fails to make amendments or remedies within reasonable period or ten (10) days after the other Party sends a written notice to Party B and requests for amendments, then:

(a) if the Existing Shareholder or the Company is the Defaulting Party, the WFOE is entitled to terminate this Agreement, and requires the Defaulting Party to compensate all the losses;

(b) if the WFOE is the Defaulting Party, the Non-Defaulting Party is entitled to require the Defaulting Party to compensate all the losses, however, unless otherwise required by the Laws, it has no right to terminate or cancel this Agreement under any circumstances.

For the purpose of this Section 11.1, the Existing Shareholder further confirms and agrees that its breach of Section 6 of this Agreement will constitute a material violation of this Agreement; the Company further confirms and agrees that its breach of Section 7 of this Agreement will constitute its material violation of this Agreement.

11.2 Notwithstanding any other terms of this Agreement, the validity of this Section shall not be affected by the termination of this Agreement.

12. MISCELLANEOUS PROVISIONS

12.1 This Agreement is executed in the Chinese language. This Agreement may be executed in five (5) counterparts, which the Company keeps one (1) counterpart, one (1) counterpart for governmental approval or registration, and the WFOE keeps other three (3) counterparts.

12.2 This Agreement, including the execution, validity, performance, interpretation and dispute resolution of this Agreement, shall be governed by and construed in accordance with the PRC Laws.

12.3 Dispute Resolution

(a) The Parties shall firstly attempt to resolve any and all disputes arising out of or relating to this Agreement through friendly consultations. If a dispute is not resolved through friendly consultations, then each Party may submit the dispute to Guangzhou Arbitration Commission for arbitration in accordance with then effective arbitration rules of such commission. The arbitration shall be conducted in Guangzhou. The award of the arbitration tribunal shall be final and binding upon the Parties. The costs of arbitration shall be borne by the losing Party, unless otherwise determined by the arbitration tribunal.

(b) When any dispute is under arbitration, except for the matters in dispute, the Parties shall continue to fulfil their respective obligations under this Agreement.

12.4 Any rights, powers and remedies granted to both Parties by any terms of this Agreement shall not exclude any other rights, powers or remedies that the Party is entitled to in accordance with the laws and other terms under this Agreement, and one Party's exercise of its rights, powers and remedies does not preclude such Party from exercising other rights, powers and remedies.

12.5 A Party’s failure to exercise or delay in exercising any of its rights, powers and remedies (“**Such Party’s Rights**”) under this Agreement or the laws will not result in the waiver of such rights, and any single or partial waiver of Such Party’s Rights will not exclude such Party's exercise of such rights in other manner and the exercise of other Such Party’s Rights.

12.6 The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

12.7 Each provision of this Agreement shall be severable and independent. If any single or multiple provisions hereof become invalid, illegal or unenforceable in any aspect, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be affected in any aspect.

12.8 This Agreement once executed shall supersede all prior agreements both Parties executed before, with respect to the subject matter hereof and thereof. Any amendment and supplements to this Agreement shall be made in writing, and only takes effect after the execution by all Parties hereunder, except for the WFOE’s transfer of its rights under Section 12.9 of this Agreement.

12.9 Without the prior written consent of the WFOE, the other Parties have no right to transfer or assign any of its rights and obligations hereunder to any third party. The other Parties hereby agree that the WFOE may transfer its rights and obligations under this Agreement to a third party, and that the WFOE only needs to send a written notice to the other Parties of such transfer, and there is no need to obtain consent from the other Parties for such transfer.

12.10 This Agreement shall be binding upon the respective successors and assigns. The Existing Shareholder assures to WFOE that it has made all proper arrangements and signed all necessary documents to ensure that when it bankrupts, liquidates or incurs other situations that may affect the exercise of its shareholder’ rights, its legal transferees, successors, heirs, liquidators, bankruptcy administrators, creditors, and other persons who may obtain the Company's shares or related rights shall not affect or hinder the performance of this Agreement. For this purpose, the Existing Shareholder and the Company should promptly sign all other documents required by the WFOE and take all other actions required by the WFOE (including but not limited to notarization of this Agreement).

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This page is the signature page of the Exclusive Option Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Existing Shareholder:

Wenzhi Cai
/s/ Wenzhi Cai

This page is the signature page of the Exclusive Option Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Company:

Guangzhou AnSiChuang Information Technology Co., Ltd. (seal)
/seal/ Guangzhou AnSiChuang Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

This page is the signature page of the Exclusive Option Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

WFOE:

Guangzhou LianYiYun Information Technology Co., Ltd. (seal)
/seal/ Guangzhou LianYiYun Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

Exhibit 4.96

English transalation

Shareholder Voting Rights Proxy Agreement

This Shareholder Voting Rights Proxy Agreement (this "**Agreement**") dated March 31, 2021, is signed by and among:

1. **Wenzhi Cai** ("***Existing Shareholders***")
Identity Card Number: ******
Residence address: ******

2. **Guangzhou AnSiChuang Information Technology Co., Ltd.** ("***Company***")
Registered address: Room 602, Building C Tower C, No. 274 Xingtai Road, Shiqiao Street,
Panyu District, Guangzhou
Legal representative: Wenzhi Cai

3. **Guangzhou LianYiYun Information Technology Co., Ltd.** ("***WFOE***")
Registered address: Room 901, No. 131 Dongxing Road, Shiqiao, Panyu District, Guangzhou
Legal representative: Wenzhi Cai

The parties above shall be hereinafter respectively referred to as a "Party", collectively referred to as "Parties".

WHEREAS:

1. The Existing Shareholder is all the present shareholder of the Company, which holds 100% shares of the Company;

2. The Existing Shareholders intend to entrust the individual designated by the WFOE with the exercise of their voting rights in the Company and the WFOE is willing to designate such individual to accept such entrustment.

THEREFORE, the Parties, after friendly consultations, hereby agree as follows:

Article 1 Voting Right Entrustment

1.1 The Existing Shareholder hereby irrevocably undertakes to sign a power of attorney in the form and substance as set forth in Annex 1 after execution of this Agreement to entrust the individual designated by the WFOE (hereinafter, the "**Entrusted Person**") to exercise on its behalf the following rights they, as the shareholder of the Company, are entitled to under the then effective articles of association of the Company (collectively, the "**Entrusted Rights**"):

(a) Proposing to convene and attending shareholders' meetings of the Company as the representative of the Existing Shareholder according to the articles of association of the Company;

(b) On behalf of the Existing Shareholder, exercising voting rights on all the issues needing to be discussed and resolved by the shareholders' meetings of the Company, including but not limited to the appointment of the Company's directors and other officers needing to be appointed and removed by shareholders;

(c) Other shareholder voting rights as specified in the articles of association of the Company (including any other shareholder voting rights as specified in the amended articles of association); and

(d) When the Existing Shareholder transfers the shares of the Company held by it, agrees to the transfer of assets of the Company, agrees to reduce capital contributions to the company, or accepts the WFOE or its designated party to subscribe the increased capital of the Company in accordance with the Exclusive Option Agreement signed by the parties on the same date hereof, to sign relevant share transfer agreements, asset transfer agreements (if applicable), capital reduction agreements, capital increase agreements, shareholder decisions and other relevant documents on behalf of the Existing Shareholders, and handle government approval, registration and filing procedure required for such transfer, capital reduction and capital increase.

The above authorization and entrustment are granted subject to the status of the Entrusted Person as a PRC citizen and the approval by the WFOE. Upon and only upon written notice of dismissing and replacing the Entrusted Person given by the WFOE to the Existing Shareholder, the Existing Shareholder shall promptly entrust another PRC citizen then designated by the WFOE to exercise the above Entrusted Rights, and once new entrustment is made, the original entrustment shall be replaced. The Existing Shareholder shall not cancel the authorization and entrustment for the Entrusted Person otherwise.

1.2 The Entrusted Person shall perform the fiduciary obligations within the scope of authorization with due care and diligence and in compliance with laws. The Existing Shareholder acknowledges and assumes relevant liabilities for any legal consequences of the Entrusted Person's exercise of the foregoing Entrusted Rights.

1.3 The Existing Shareholder hereby acknowledges that the Entrusted Person is not required to seek advice from the Existing Shareholder prior to the exercise of the foregoing Entrusted Rights. However, the Entrusted Person shall inform the Existing Shareholder in a timely manner of any resolution or any proposal on convening interim shareholders' meeting after such resolution or proposal is made.

Article 2 Right to Information

2.1 For the purpose of exercising the Entrusted Rights hereunder, the Entrusted Person is entitled to know the information with regard to the Company's operation, business, customers, finance, staff, etc., and shall have access to the relevant materials of the Company. The Company shall adequately cooperate with the Entrusted Person in this regard.

Article 3 Exercise of Entrusted Rights

3.1 The Existing Shareholder will provide adequate assistance to the exercise of the Entrusted Rights by the Entrusted Person, including timely execution of the resolutions of the shareholders' meeting of the Company adopted by the Entrusted Person or other related legal documents when necessary (e.g., when it is necessary for examination and approval of or registration or filing with governmental departments).

3.2 If at any time during the term of this Agreement, the grant or exercise of the Entrusted Rights hereunder is unenforceable for any reason (except for default of Existing Shareholder or the Company), the Parties shall immediately seek a most similar substitute for the unenforceable provision and, if necessary, enter into a supplementary agreement to amend or adjust the provisions herein, in order to ensure the realization of the purpose of this Agreement.

Article 4 Exemption and Compensation

4.1 The Parties acknowledge that the WFOE shall not be requested to be liable to or compensate (monetary or otherwise) other Parties or any third party due to exercise of the Entrusted Rights hereunder by the individuals designated by it in any circumstances.

4.2 The Existing Shareholder and the Company agree to indemnify and hold harmless the WFOE from and against all losses incurred or likely to be incurred by it due to exercise of the Entrusted Rights by the Entrusted Person designated by the WFOE, including without limitation, any loss resulting from any litigation, demand, arbitration or claim initiated or raised by any third party against it or from administrative investigation or penalty of governmental authorities (collectively, the "Losses"), PROVIDED THAT the above indemnity in respect of any Losses shall not be available to the WFOE to the extent that such Losses have been caused by the willful default or gross negligence on the part of the Entrusted Person.

Article 5 Representations and Warranties

5.1 The Existing Shareholder hereby represents and warrants that:

(a) It has the full power and authority to execute and deliver this Agreement and all other documents relating to the transaction contemplated hereby and to be executed by it. It also has the full power and authority to consummate the transaction contemplated hereby. This Agreement, when duly executed and delivered, shall constitute a legal, valid and binding obligation enforceable against it in accordance with the terms of this Agreement.

(d) It is the recorded legal shareholder of the Company as of the effective date of this Agreement, and except for the rights under this Agreement, the Equity Pledge Agreement and the Exclusive Option Agreement entered into among the Existing Shareholder, the Company and the WFOE, the Entrusted Rights are free of any third-party right. Pursuant to this Agreement, the Entrusted Person may fully and sufficiently exercise the Entrusted Rights in accordance with the then effective articles of association of the Company.

(c) The Company is a limited liability company legally registered and validly existing in accordance with the PRC laws and has independent legal capacity; has complete and independent legal status and legal capacity to execute, deliver and perform this Agreement, and can independently act as a party to a litigation.

(d) Without the consent of the WFOE, the Existing Shareholder shall not take any measures to advice, claim or request amendment, modification, termination or change the articles of association of the Company in any other forms.

5.2 The Existing Shareholder hereby irrevocably represents and warrants that, once it knows or should be aware that the shares held by it may be transferred to any third party other than the WFOE and/or through other entities and/or individuals designated by the WFOE due to applicable laws, judgments or awards of courts or arbitration institution, or for any other reason, it should immediately and without hesitation notify the WFOE.

5.3. Each of the WFOE and the Company hereby represents and warrants that:

(a) It is a limited liability company duly organized and validly existing under the PRC Law with an independent legal personality. It has the full and independent legal status and legal capacity to execute, deliver and perform this Agreement and may sue or be sued as an independent party.

(b) It has the full corporate power and authority to execute and deliver this Agreement and all other documents relating to the transaction contemplated hereby and to be executed by it. It also has the full power and authority to consummate the transaction contemplated hereby.

5.4 The Company further represents and warrants that:

(a) The Existing Shareholder is the recorded legal shareholder of the Company as of the effective date of this Agreement, and except for the rights under this Agreement, the Equity Pledge Agreement and the Exclusive Option Agreement entered into among the Existing Shareholder, the Company and the WFOE, the Entrusted Rights are free of any third-party right. Pursuant to this Agreement, the Entrusted Person may fully and sufficiently exercise the Entrusted Rights in accordance with the then effective articles of association of the Company.

5.5 The Company hereby irrevocably represents and warrants that, once it knows or should be aware that the shares held by the Existing Shareholders may be transferred to any third party other than the WFOE and/or through other entities and/or individuals designated by the WFOE due to applicable laws, judgments or awards of courts or arbitration institution, or for any other reason, it should immediately and without hesitation notify the WFOE.

Article 6 Term

6.1 Subject to the provisions of Articles 6.2 and 6.3 hereof, this Agreement shall become effective as of the date of the due execution by the Parties and the term of this Agreement shall be twenty (20) years; unless prematurely terminated by the Parties in writing or pursuant to Article 9.1 hereof. After the expiration of this Agreement, unless the WFOE informs other Parties 30 days in advance that this Agreement will not be renewed, this Agreement will be automatically renewed for one year after the expiration of the term, and so on.

6.2 If the Company or the WFOE, upon expiry of its duration, fails to handle the examination, approval and registration procedures concerning the extension of its duration, this Agreement shall be terminated.

6.3 In case that the Existing Shareholder transfers all of the equity interest held by it in the Company with the WFOE's prior consent, such Existing Shareholder shall cease to be a party to this Agreement since it has completed relevant assistant obligation, executed all the relevant and necessary documents, completed relevant internal procedure of the Company and governmental approval, registration, filing procedures (provided subject to Article 4, Article 5.1, Article 6, Article 7, Article 8, Article 9 and Article 10).

Article 7 Notices

7.1 All the notices, request, requirement and other communications pursuant to this Agreement shall be delivered to the relevant Party in written form.

7.2 Abovesaid notices or other notices if given by facsimile transmission or e-mail, shall be deemed effectively given upon successful transmission; if given by person, shall be deemed effectively given upon delivery by person; if given by post, shall be deemed effectively given on the date after two (2) days from posting.

Article 8 Confidentiality

8.1 Regardless of whether this Agreement is terminated or not, each Party shall keep strictly confidential all the business secrets, proprietary information, customer information and other information of a confidential nature about the other Parties known by it during the execution and performance of this Agreement (collectively, the "**Confidential Information**"). The receiving Party shall not disclose any Confidential Information to any third party except with the prior written consent of the disclosing Party or in accordance with relevant laws or regulations or under requirements of the place where its affiliate is listed on a stock exchange. The receiving Party shall not use or indirectly use any Confidential Information other than for performing this Agreement.

8.2 The following information shall not be deemed part of the Confidential Information:

(a) any information already known by the receiving Party by legal means prior to disclosure, which is substantiated in writing;

(b) any information being part of public knowledge through no fault of the receiving Party; or

(c) any information rightfully received by the receiving Party from other sources after disclosure.

8.3 The receiving Party may disclose the Confidential Information to its relevant employees, agents or engaged professionals, but the receiving Party shall guarantee that they are in compliance with the relevant terms and conditions of this Agreement and assume any responsibility arising from any breach thereof by them.

8.4 Notwithstanding any other provision herein, the validity of this Article shall survive the termination of this Agreement.

Article 9 Defaulting Liability

9.1 The Parties agree and acknowledge that, if any of the Parties (the "**Defaulting Party**") materially breaches any provision herein or materially fails to perform or delays performance of any of the obligations hereunder, such breach, failure or delay shall constitute a default under this Agreement (a "**Default**"). In such event, any of the other Parties without default (the "**Non-defaulting Party**") shall have the right to require the Defaulting Party to rectify such Default or take remedial measures within a reasonable period. If the Defaulting Party fails to rectify such Default or take remedial measures within such reasonable period or within ten (10) days of the Non-defaulting Party notifying the Defaulting Party in writing and requiring the Default to be rectified, then:

(a) if the Existing Shareholder or the Company is the Defaulting Party, the WFOE shall be entitled to terminate this Agreement and require the Defaulting Party to indemnify all damages;

(b) if the WFOE is the Defaulting Party, the Non-defaulting Party shall be entitled to require the Defaulting Party to indemnify all damages, but the Non-defaulting Party shall not be entitled to any rights to terminate or cancel this Agreement in any situation unless otherwise provided by the mandatory provisions of the laws.

9.2 Notwithstanding any other provision herein, the validity of this Article shall survive the suspension or termination of this Agreement.

Article 10 Miscellaneous

10.1 This Agreement is written in Chinese and executed in five (5) originals, with one (1) original to be retained by the Company, one (1) original to be used for approval or registration by governmental authorities, other three (3) originals to be retained by the WFOE.

10.2 The formation, validity and interpretation of, resolution of disputes in connection with, this Agreement, shall be governed by PRC Law.

10.3 Dispute Resolution

(a) Any dispute arising hereunder and in connection herewith shall be resolved through consultations among the Parties, and if the Parties fail to reach a mutual agreement, any Party may submit such dispute to Guangzhou Arbitration Commission for arbitration in accordance with its arbitration rules in effect at the time of applying for arbitration. The seat of arbitration shall be Guangzhou. The arbitral award shall be final and binding on the Parties. The costs of arbitration shall be borne by the losing Party, unless otherwise determined by the arbitration tribunal.

(b) During dispute resolution, the Parties shall continue to perform the terms of this Agreement other than those relating to disputes.

10.4 Any right, power or remedy conferred on any Party by any provision of this Agreement shall not be exclusive of any other right, power or remedy available to it at law and under the other provisions of this Agreement, and the exercise by such Party of any of its rights, powers and remedies shall not preclude the exercise of any other rights, powers and remedies it may have.

10.5 No failure or delay by a Party in exercising any of its rights, powers and remedies available to it hereunder or at law (hereinafter, the "**Party's Rights**") shall operate as a waiver thereof, nor shall the waiver of any single or partial exercise of the Party's Rights shall preclude such Party from exercising such rights in any other way and exercising the remaining part of the Party's Rights.

10.6 The headings contained herein shall be for reference only, and in no circumstances shall such headings be used in or affect the interpretation of the provisions hereof.

10.7 Each provision contained herein shall be severable and independent from each of other provisions, and if at any time any one or more provisions herein become invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions herein shall not be affected as a result thereof.

10.8 This Agreement, once executed, replaces any other legal documents previously signed by the parties on the same subject. Any amendment or supplement hereto shall be made in writing and shall become effective only upon due execution by the Parties hereto, except for the WFOE’s transfer of its rights under Section 10.9 of this Agreement.

10.9 Without the WFOE’s prior written consent, any other Party shall not transfer any of its rights and/or obligations hereunder to any third party. The Existing Shareholder and the Company hereby agree that the WFOE is entitled to transfer any of its rights and/or obligations hereunder to any third party upon written notice thereof to the other Parties, and there is no need to obtain consent from the other Parties for such transfer.

10.10 This Agreement shall be binding upon the respective successors and assigns. The Existing Shareholders assure to WFOE that they have made all proper arrangements and signed all necessary documents to ensure that when they bankrupts, liquidates or incurs other situations that may affect the exercise of their shareholders’ rights, their legal transferees, successors, heirs, liquidators, bankruptcy administrators, creditors, and other persons who may obtain the Company's shares or related rights shall not affect or hinder the performance of this Agreement. For this purpose, the Existing Shareholders and the Company should promptly sign all other documents required by the WFOE and take all other actions required by the WFOE (including but not limited to notarization of this Agreement).

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This page is the signature page of the Shareholder Voting Rights Proxy Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Existing Shareholder:

Wenzhi Cai
/s/ Wenzhi Cai

This page is the signature page of the Shareholder Voting Rights Proxy Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

Company:

Guangzhou AnSiChuang Information Technology Co., Ltd. (seal)
/seal/ Guangzhou AnSiChuang Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

This page is the signature page of the Shareholder Voting Rights Proxy Agreement of Guangzhou AnSiChuang Information Technology Co., Ltd.

WFOE:

Guangzhou LianYiYun Information Technology Co., Ltd. (seal)
/seal/ Guangzhou LianYiYun Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

Exhibit 4.97

Englisht translation

EQUITY INTEREST PLEDGE AGREEMENT

THIS EQUITY INTEREST PLEDGE AGREEMENT (this "**Agreement**") is entered into on March 31, 2021 ("**Execution Date**")

BY AND AMONG:

1. **Wenzhi Cai** (the "**Pledgor**")
   Identity Card Number: ******
   Residence address: ******

2. **Guangzhou AnSiChuang Information Technology Co., Ltd.** (the "**Company**")
   Registered address: Room 602, Building C Tower C, No. 274 Xingtai Road, Shiqiao Street, Panyu District, Guangzhou
   Legal representative: Wenzhi Cai

3. **Guangzhou LianYiYun Information Technology Co., Ltd.** (the "**Pledgee**")
   Registered address: Room 901, No. 131 Dongxing Road, Shiqiao, Panyu District, Guangzhou
   Legal representative: Wenzhi Cai

In this Agreement, the aforementioned parties are referred to individually as a "**Party**" and collectively as the "**Parties**".

WHEREAS:

1. The Pledgor is the registered shareholder of the Company and lawfully hold all equity interest in the Company ("**Company Equity**"). As of the Execution Date, the amount of its contribution to the registered capital of the Company is Renminbi Ten Million, and its shareholding percentage in total is 100%. The registered capital has not been paid in. The basic information of the Company sets forth in Schedule 1 hereto.

2. The Parties hereto entered into a Shareholder Voting Rights Proxy Agreement ("**Proxy Agreement**") on March 31, 2021, pursuant to which the each of the Pledgor has irrevocably granted a general power of attorney to such persons as may then be appointed by the Pledgee to exercise its entire shareholder voting rights in the Company on behalf of the Pledgor.

3. The Company and the Pledgee entered into an Exclusive Service Agreement ("**Service Agreement**") on March 31, 2021, pursuant to which the Company has, on an exclusive basis, engaged the Pledgee to provide it with relevant services and agrees to pay relevant service fees to the Pledgee for such services.

4. The Parties hereto entered into an Exclusive Option Agreement ("**Option Agreement**") on March 31, 2021, pursuant to which the Pledgor and the Company shall, to the extent permitted by the PRC Laws, transfer, at the request of the Pledgee, all or part of their equity interests in the Company or all or part of the assets of the Company respectively to the Pledgee and/or any entity and/or individual designated by it, or the Company shall decrease its capital and the Pledgee and/or any entity and/or individual designated by it shall subscribe for the newly increased registered capital of the Company.

5. As security for the performance by the Pledgor of their Contractual Obligations (as defined below) and their repayment of the Secured Indebtedness (as defined below), each Pledgor is willing to pledge all of its Company Equity to the Pledgee and create first priority pledge

in favor of the Pledgee; and the Company has agreed to such equity interest pledge arrangement.

NOW, THEREFORE, upon consensus through consultation, the Parties agree as follows:

ARTICLE I DEFINITIONS

1.1 Unless otherwise required by the context, the following terms shall have the following meanings in this Agreement:

"**Contractual Obligations**" means all of the each Pledgor's contractual obligations under the Proxy Agreement and the Option Agreement; all of the Company's contractual obligations under the Proxy Agreement, the Service Agreement and the Option Agreement; and all of the contractual obligations of the each Pledgor and the Company under this Agreement.

"Secured Indebtedness" means all direct, indirect or consequential losses and loss of projectable benefits suffered by the Pledgee as a result of any Event of Default (as defined below) of the Pledgor and/or the Company, and the basis for determining the amounts of such losses shall include, without limitation, reasonable commercial plans and profit forecasts of the Pledgee and all costs incurred by the Pledgee in connection with its enforcement of the Contractual Obligations of each Pledgor and/or the Company.

"Transaction Agreements" means the Proxy Agreement, the Service Agreement and the Option Agreement.

"Event of Default" means a breach by any Pledgor of any of its Contractual Obligations under the Proxy Agreement, the Option Agreement and/or this Agreement, and a breach by the Company of any of its Contractual Obligations under the Proxy Agreement, the Service Agreement, the Option Agreement and/or this Agreement.

"Pledged Equity" means all of the Company Equity lawfully owned by the Pledgor as of the effectiveness of this Agreement and to be pledged hereunder to the Pledgee as security for the performance by the Pledgor and the Company of their respective Contractual Obligations and increased capital contribution amounts and dividends under Sections 2.6 and 2.7 hereof.

"PRC Laws" means the then effective laws, administrative regulations, administrative rules, local regulations, judicial interpretations and other binding regulatory documents of the People's Republic of China.

1.2 In this Agreement, any reference to any PRC Law shall be deemed to include (i) a reference to such PRC Law as modified, amended, supplemented or reenacted, effective either before or after the date hereof; and (ii) a reference to any other decision, circular or rule made thereunder or effective as a result thereof.

1.3 Unless otherwise required by the context, a reference to an article, section, clause or paragraph herein shall be a reference to an article, section, clause or paragraph of this Agreement.

ARTICLE II EQUITY PLEDGE

2.1 The Pledgor hereby agrees to pledge, in accordance with the terms hereof, its lawfully owned and rightfully disposable Pledged Equity to the Pledgee as security for the performance by such Pledgor of its Contractual Obligations and its repayment of the Secured Indebtedness. The Company hereby agrees for the Pledgor to so pledge the Pledged Equity to the Pledgee in accordance with the terms hereof.

2.2 The Pledgor covenants that it will assume the responsibility of recording the equity pledge arrangement ("**Equity Pledge**") hereunder in the shareholder's register of the Company on the Execution Date. Each Pledgor further covenants that it will use its best efforts and take all necessary measures to register the Equity Pledge as soon as possible with the competent administrative authority for market regulation of the Company after the Execution Date.

2.3 During the validity term hereof, the Pledgee shall not be liable in whatsoever manner for any diminution in value of the Pledged Equity and the Pledgor shall have no right to seek any form of recourse or bring any claims against the Pledgee in connection therewith, except where such diminution arises out of any willful conduct of the Pledgee or its gross negligence having immediate causal link with such result.

2.4 Subject to Section 2.3 above, if the Pledged Equity is likely to suffer such a manifest value diminution as to impair the rights of the Pledgee, the Pledgee may at any time auction or sell the Pledged Equity on behalf of the Pledgor and may, as agreed with the Pledgor, apply the proceeds from such auction or sale towards early repayment of the Secured Indebtedness, or deposit (entirely at the cost of the Pledgee) such proceeds with a notary organ of the place of the Pledgee. In addition, upon request by the Pledgee, the Pledgor shall provide other property as security for the Secured Indebtedness.

2.5 Upon occurrence of any Event of Default, the Pledgee shall be entitled to dispose of the Pledged Equity in such manner as prescribed by Article IV hereof.

2.6 The Pledgor shall not increase the capital of the Company except with prior consent of the Pledgee. Any increase in the capital contribution made by the Pledgor to the registered capital of the Company as a result of any capital increase shall equally become part of the Pledged Equity, and the Pledgor shall register the pledge of the Company Equity corresponding to such capital contribution with the competent administrative authority for market regulation of the Company.

2.7 The Pledgor shall not receive any dividend or profit in respect of the Pledged Equity except with prior consent of the Pledgee. Any dividend or profit received by the Pledgor in respect of the Pledged Equity shall be deposited into an account designated by the Pledgee, monitored by the Pledgee and first applied towards repayment of the Secured Indebtedness.

2.8 Upon occurrence of an Event of Default, the Pledgee shall be entitled to dispose of any Pledged Equity of the Pledgor in accordance with the terms hereof.

ARTICLE III RELEASE OF PLEDGE

3.1 Upon full and complete performance by the Pledgor and the Company of all of their Contractual Obligations and full repayment of the Secured Indebtedness, the Pledgee shall, at the request of the Pledgor, release the Equity Pledge hereunder and cooperate with the Pledgor in relation to both the deregistration of the Equity Pledge in the shareholder's register of the Company and the deregistration of the Equity Pledge with the relevant administrative authority for market regulation; reasonable costs arising out of such release of the Equity Pledge shall be borne by the Pledgee.

ARTICLE IV DISPOSAL OF PLEDGED EQUITY

4.1 The Parties hereby agree that upon occurrence of any Event of Default, the Pledgee shall be entitled to exercise, upon written notice to the Pledgor, all of the remedies, rights and powers available to it under the PRC Laws, the Transaction Agreements and this Agreement, including, without limitation, the right to auction or sell the Pledged Equity for prior satisfaction of claims. The Pledgee shall not be held liable for any losses resulting from its reasonable exercise of such rights and powers.

The Pledgor further acknowledges and agrees that its breach of Article IX hereof shall constitute its material breach of this Agreement; the Company further acknowledges and agrees that its breach of Article X hereof shall constitute its material breach of this Agreement.

4.2 The Pledgee shall be entitled to appoint, in writing, its counsels or other agents to exercise any and all of its foregoing rights and powers, and neither any Pledgor nor the Company shall object thereto.

4.3 The Pledgee shall have the right to fully deduct all reasonable costs incurred by it in connection with its exercise of any or all of its foregoing rights and powers from the proceeds obtained as a result of such exercise of rights and powers.

4.4 The proceeds obtained as a result of the exercise by the Pledgee of its rights and powers shall be applied in the following order of precedence:

(a) towards payment of all costs arising out of the disposal of the Pledged Equity and the exercise by the Pledgee of its rights and powers (including fees paid to its counsels and agents);

(b) towards payment of the taxes payable in connection with the disposal of the Pledged Equity; and

(c) towards repayment of the Secured Indebtedness to the Pledgee.

Any balance after the deduction of the foregoing payments shall either be returned by the Pledgee to the Pledgor or any other person who may be entitled to such balance under relevant laws and regulations or be deposited by the Pledgee with a notary organ of the place of the Pledgee (any costs arising out of such deposit shall be borne by the Pledgee).

4.5 The Pledgee shall have the right to exercise, at its option, concurrently or successively, any of its breach of contract remedies; the Pledgee shall not be required to first exercise other breach of contract remedies prior to the exercise of its right to auction or sell the Pledged Equity hereunder.

ARTICLE V COSTS AND EXPENSES

5.1 All actual costs and expenses arising in connection with the creation of the Equity Pledge hereunder, including, without limitation, the stamp duty, any other taxes and all legal costs, shall be borne by the Parties severally.

ARTICLE VI CONTINUING GUARANTEE AND NON-WAIVER

6.1 The Equity Pledge created hereunder shall constitute a continuing guarantee and shall remain valid until full performance of the Contractual Obligations or full repayment of the Secured Indebtedness, whichever occurs later. Neither any waiver or grace granted by the Pledgee with respect to any breach by any Pledgor nor any delay of the Pledgee in its exercise of any of its rights under the Transaction Agreements and this Agreement shall affect the right of the Pledgee under this Agreement, relevant PRC Laws and the Transaction Agreements to require at any time thereafter the Pledgor to strictly perform the Transaction Agreements and this Agreement or any right that may be available to the Pledgee as a result of any subsequent breach by the Pledgor of the Transaction Agreements and/or this Agreement.

ARTICLE VII REPRESENTATIONS AND WARRANTIES BY THE PLEDGOR

The Pledgor represents and warrants to the Pledgee that:

7.1 All reports, documents and information provided by it to the Pledgee prior to the effectiveness of this Agreement with respect to all matters pertaining to such Pledgor or required by this Agreement are true, correct, complete and not misleading in all material respects as of the effectiveness of this Agreement.

7.2 All reports, documents and information provided by it to the Pledgee subsequent to the effectiveness of this Agreement with respect to all matters pertaining to such Pledgor or required by this Agreement are true and valid in all material respects as of the time of provision of the same.

7.3 As of the effectiveness of this Agreement, such Pledgor is the sole lawful owner of the Pledged Equity free from any ongoing or potential dispute or any third party claim as to the ownership thereof; and such Pledgor has the right to dispose of the Pledged Equity or any part thereof.

7.4 Other than the security interest created on the Pledged Equity hereunder and the rights created under the Transaction Agreements, the Pledged Equity is free from any other security interests, third party rights or interests or any other restrictions.

7.5 The Pledged Equity may be lawfully pledged and assigned, and such Pledgor has full rights and powers to pledge the Pledged Equity to the Pledgee in accordance with the terms hereof.

7.6 Once duly executed by such Pledgor, this Agreement will constitute lawful, valid and binding obligations of such Pledgor.

7.7 Other than the registration of the Equity Pledge with the relevant administrative authority for market regulation, any consents, permissions, waivers or authorizations by any third party or any approval, license or exemption from or any registration or filing formalities with any governmental body (if required by law), requisite in each case for the execution and performance of this Agreement and the creation of the Equity Pledge hereunder, have been obtained or completed and will remain fully valid during the validity term hereof.

7.8 The execution and performance by such Pledgor of this Agreement do not violate or conflict with any law applicable to such Pledgor, any agreement to which such Pledgor is a party or by which he is bound, any court judgment, any arbitral award, or any decision of any administrative authority.

7.9 The pledge hereunder constitutes a first priority security interest on the Pledged Equity.

7.10 All taxes and costs payable in connection with the acquisition of the Pledged Equity have been paid in full by such Pledgor.

7.11 There are no pending, or to the knowledge of such Pledgor, threatened, suits, legal proceedings or claims before any court or arbitral tribunal or by any governmental body or administrative authority against such Pledgor or its property or the Pledged Equity having a material or adverse effect on the financial condition of such Pledgor or its ability to perform its obligations and the guarantee liability hereunder.

7.12 The Pledgor hereby warrants to the Pledgee that the foregoing representations and warranties will remain true and correct and be fully complied with under all circumstances at any time prior to the full performance of the Contractual Obligations or full repayment of the Secured Indebtedness.

ARTICLE VIII REPRESENTATIONS AND WARRANTIES BY THE COMPANY

The Company represents and warrants to the Pledgee that:

8.1 It is a limited liability company duly registered and lawfully existing under the PRC Laws with independent legal personality; and has full and independent legal status and capacity to execute, deliver and perform this Agreement and may sue or be sued as an independent party.

8.2 All reports, documents and information provided by it to the Pledgee prior to the effectiveness of this Agreement with respect to all matters pertaining to the Pledged Equity or required by this Agreement are true, correct, complete and not misleading in all material respects as of the effectiveness of this Agreement.

8.3 All reports, documents and information provided by it to the Pledgee subsequent to the effectiveness of this Agreement with respect to all matters pertaining to the Pledged Equity or required by this Agreement are true and valid in all material respects as of the time of provision of the same.

8.4 Once duly executed by it, this Agreement will constitute lawful, valid and binding obligations of the Company.

8.5 It has full internal corporate power and authority to execute and deliver this Agreement and all other documents to be executed by it in connection with the transactions contemplated hereunder as well as full power and authority to consummate the transactions contemplated hereunder.

8.6 There are no pending, or to the knowledge of the Company, threatened, suits, legal proceedings or claims before any court or arbitral tribunal or by any governmental body or administrative authority against the Pledged Equity, the Company or its assets having a material or adverse effect on the financial condition of the Company or the ability of the Pledgor to perform its obligations and the guarantee liability hereunder.

8.7 The Company hereby agrees to be severally and jointly liable to the Pledgee for the representations and warranties made by the Pledgor under Sections 7.3, 7.4, 7.5, 7.7 and 7.9 hereof.

8.8 The Company hereby warrants to the Pledgee that the foregoing representations and warranties will remain true and correct and be fully complied with under all circumstances at any time prior to the full performance of the Contractual Obligations or full repayment of the Secured Indebtedness.

ARTICLE IX UNDERTAKINGS BY THE PLEDGORS

The Pledgor hereby agree and irrevocably undertake to the Pledgee that:

9.1 Without prior written consent of the Pledgee, the Pledgor will not create or permit to be created any new pledge or any other security interest on the Pledged Equity, and any pledge or any other security interest created on all or part of the Pledged Equity without prior written consent of the Pledgee shall be null and void.

9.2 Without prior written notice to and prior written consent of the Pledgee, (i) the Pledgor will not assign or otherwise dispose of the Pledged Equity or request the Company to decrease its capital, and any of such actions taken by the Pledgor without prior consent of the Pledgee shall be null and void; (ii) the Pledgor will not assist or permit other existing shareholders (as applicable) to take any of the foregoing actions without prior written consent of the Pledgee. The proceeds received by the Pledgor from the assignment or other disposal of the Pledged Equity shall be first applied towards early full repayment of the Secured Indebtedness to the Pledgee or deposited with a third party to be agreed with the Pledgee.

9.3 Should there arise any suit, arbitration or other claims which are likely to have an adverse effect on the interests of the Pledgor or the Pledgee under the Transaction Agreements and this Agreement or on the Pledged Equity, the Pledgor warrants that it will notify the Pledgee in writing of the same as soon as possible and without delay and will, in accordance with the reasonable request of the Pledgee, take all necessary actions to ensure the Pledgee’s pledge rights and interests in and to the Pledged Equity.

9.4 The Pledgor warrants that it shall complete the business term extension registration formalities of the Company within three (3) months prior to the expiry of the business term of the Company such that the validity of this Agreement shall be maintained.

9.5 The Pledgor shall not do or permit to be done any act or action likely to have an adverse effect on the interests of the Pledgee under the Transaction Agreements and this Agreement or on the Pledged Equity.

9.6 The Pledgor will use its best efforts and take all necessary measures to register the Equity Pledge hereunder as soon as possible with the relevant administrative authority for market regulation after the execution of this Agreement, and the Pledgor warrant, in accordance with the reasonable request of the Pledgee, to take all necessary actions and execute all necessary documents (including, without limitation, any supplement hereto) to ensure the Pledgee’s pledge rights and interests in and to the Pledged Equity as well as the exercise and realization by the Pledgee of such rights and interests.

9.7 Should the exercise of the pledge rights hereunder result in an assignment of any Pledged Equity, the Pledgor warrants that it will take all actions to realize such assignment.

9.8 The Pledgor ensures that the shareholder's resolutions adopted, convening procedures of, the methods of voting at and the contents of the shareholders' meeting (as applicable) and board meetings of the Company held in connection with the execution of this Agreement and the creation and exercise of the pledge rights hereunder shall not violate laws, administrative regulations or the articles of association of the Company.

9.9 Once the Pledgor knows or should have known any possible transfer of the Pledged Equity held by him to any third parties other than the Pledgee or any individual or entity designated by the Pledgee as a result of applicable PRC Laws or any judgment or award rendered by a court or arbitral body or for any other reasons, it shall notify the Pledgee immediately and without delay.

ARTICLE X UNDERTAKINGS BY THE COMPANY

The Company hereby agrees and irrevocably undertakes to the Pledgee that:

10.1 The Company will use every effort to assist with the obtainment of any consents, permissions, waivers or authorizations by any third party or any approval, license or exemption from any governmental body or the completion of any registration or filing formalities with any governmental body (if required by law), requisite in each case for the execution and performance of this Agreement and the creation of the Equity Pledge hereunder, and the maintenance of the same in full force and effect during the validity term hereof.

10.2 Without prior written consent of the Pledgee, the Company will not assist or permit the Pledgor to create any new pledge or any other security interest on the Pledged Equity.

10.3 Without prior written consent of the Pledgee, the Company will not assist or permit the Pledgor to assign or otherwise dispose of the Pledged Equity.

10.4 Should there arise any suit, arbitration or other claims which are likely to have an adverse effect on the Company, the Pledged Equity or the interests of the Pledgee under the Transaction Agreements and this Agreement, the Company warrants that it will notify the Pledgee in writing of the same as soon as possible and without delay and will, in accordance with the reasonable request of the Pledgee, take all necessary actions to ensure the Pledgee's pledge rights and interests in and to the Pledged Equity.

10.5 The Company warrants that it shall complete its business term extension registration formalities within three (3) months prior to the expiry of its business term such that the validity of this Agreement shall be maintained.

10.6 The Company shall not do or permit to be done any act, action or omission likely to have an adverse effect on the interests of the Pledgee under the Transaction Agreements and this Agreement or on the Pledged Equity.

10.7 The Company will, during the first month of each calendar quarter, submit to the Pledgee the financial statements of the Company for the preceding calendar quarter, including, without limitation, the balance sheet, the income statement and the cash flow statement.

10.8 The Company warrants, in accordance with the reasonable request of the Pledgee, to take all necessary actions and execute all necessary documents (including, without limitation, any supplement hereto) to ensure the Pledgee's pledge rights and interests

in and to the Pledged Equity as well as the exercise and realization by the Pledgee of such rights and interests.

10.9 Should the exercise of the pledge rights hereunder result in an assignment of any Pledged Equity, the Company warrants that it will take all actions to realize such assignment.

10.10 The Company covenants that it will assist the Pledgor to register the Equity Pledge hereunder with the competent administrative authority for market regulation of the Company as soon as possible after the execution of this Agreement and provide all necessary cooperation to complete such registration in a timely manner.

10.11 Once the Company knows or should have known any possible transfer of the Pledged Equity held by the Pledgor to any third parties other than the Pledgee or any individual or entity designated by the Pledgee as a result of applicable PRC Laws or any judgment or award rendered by a court or arbitral body or for any other reasons, it shall notify the Pledgee immediately and without delay.

ARTICLE XI FUNDAMENTAL CHANGES OF CIRCUMSTANCES

11.1 As a supplementary agreement and without contravening other provisions of the Transaction Agreements and this Agreement, if, at any time, in the opinion of the Pledgee, as a result of any promulgation of or amendment to any PRC Laws, regulations or rules, or any change in the interpretation or application of such laws, regulations or rules, or any change in relevant registration procedures, the maintenance of the validity of this Agreement and/or the disposal of the Pledged Equity in the manner prescribed hereby becomes illegal or contravenes such laws, regulations or rules, the Pledgor and the Company shall, based on the Pledgee's written instructions and in accordance with its reasonable request, immediately take any actions and/or execute any agreements or other documents so as to:

(a) maintain the validity of this Agreement;

(b) facilitate the disposal of the Pledged Equity in the manner prescribed hereby; and/or

(c) maintain or realize the security created or purported to be created hereunder.

ARTICLE XII EFFECTIVENESS AND TERM OF AGREEMENT

12.1 This Agreement shall become effective when this Agreement has been duly executed by the parties.

12.2 The term of this Agreement shall end when the Contractual Obligations have been fully performed or the Secured Indebtedness have been fully repaid, whichever is later.

ARTICLE XIII NOTICES

13.1 Any notice, request, demand and other correspondences required by or made pursuant to this Agreement shall be made in writing and delivered to the relevant Parties.

13.2 Such notice or other correspondences shall be deemed delivered when it is transmitted if transmitted by fax or email; or upon delivery if delivered in person; or two (2) days after posting if delivered by mail.

ARTICLE XIV MISCELLANEOUS

14.1 The Pledgor and the Company agree that the Pledgee may, immediately upon notice to the Pledgor and the Company, assign its rights and/or obligations hereunder to any third party; provided that without prior written consent of the Pledgee, neither the Pledgor nor the Company may assign their respective rights, obligations or liabilities hereunder to any third party.

14.2 This Agreement is made in Chinese in five (5) originals, of which one (1) copy shall be held by the Company, one (1) copy shall be used for governmental approval/registration purposes and the three (3) copies shall be kept by the Pledgee.

14.3 The entry into, effectiveness and interpretation of, and resolution of disputes under, this Agreement shall be governed by the PRC Laws.

14.4 Dispute Resolution

(a) All disputes arising out of or in connection with this Agreement shall be first settled by the relevant Parties through amiable consultations; if such Parties fail to resolve the dispute through consultations, the dispute shall be submitted to China Guangzhou Arbitration Commission ("**CGAC**") for arbitration according to CGAC arbitration rules in effect at the time of applying for arbitration. The seat of arbitration shall be in Guangzhou. The arbitration award shall be final and binding on the relevant Parties. Except as otherwise required by the arbitration award, the arbitration fees shall be borne by the losing party. The losing party shall also indemnify for the attorneys' fee and other expenses incurred by the winning party.

(b) Pending the resolution of such dispute, the Parties shall continue to perform the remaining provisions of this Agreement other than the disputed matters.

14.5 No right, power or remedy empowered to any Party by any provision of this Agreement shall preclude any other right, power or remedy enjoyed by such Party in accordance with law or any other provisions hereof and no exercise by a Party of any of its rights, powers and remedies shall preclude its exercise of its other rights, powers and remedies.

14.6 No failure or delay by a Party in exercising any right, power or remedy under this Agreement or laws ("**Party's Rights**") shall result in a waiver of such rights; and no single or partial waiver by a Party of the Party's Rights shall preclude such Party from exercising such rights in any other way or exercising the remaining part of the Party's Rights.

14.7 The section headings herein are inserted for convenience of reference only and shall in no event be used in or affect the interpretation of the provisions hereof.

14.8 Each provision contained herein shall be severable and independent of any other provisions hereof, and if at any time any one or more provisions hereof become invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions hereof shall not be affected thereby.

14.9 (i) Once executed, this Agreement shall replace any other legal documents previously entered into by the Parties in respect of the same subject matter hereof. To clarify,

despite the foregoing agreement, all parties irrevocably promise, agree and recognize to sign a simplified version of equity interest pledge agreement ("**Simplified Pledge Agreement**"), only for the purpose of the pledge registration of the company's competent administrative department for industry and commerce. If the simplified pledge agreement is inconsistent with this agreement, the agreement is not as clear as this agreement, or the simplified pledge agreement does not cover matters, this agreement shall prevail. (ii) Any amendments or supplements to this Agreement shall be made in writing. Except for the transfer of rights hereunder by the Pledgee according to Section 14.1 hereof, such amendments or supplements shall become effective only if they are duly signed by the Parties hereto.

14.10 This Agreement shall be binding upon the legal assignees or successors of the Parties. The successors or permitted assignees (if any) of the Pledgor and the Company shall continue to perform the respective obligations of the Pledgor and the Company hereunder. The Pledgor warrant to the Pledgee that he has made all appropriate arrangements and executed all necessary documents to ensure that, in the event of its bankruptcy, dissolution or occurrence of other circumstances that might affect exercise of its shareholder rights, his legal assignee, successor, heir, creditor, liquidator, bankruptcy administrator and other persons that might consequently acquire the Company Equity or relevant rights cannot affect or impede the performance of this Agreement. For this purpose, the Pledgor and the Company shall promptly sign all other documents and take all other actions (including, without limitation, notarization of this Agreement) as required by the Pledgee.

14.11 Concurrently with the execution of this Agreement, the Pledgor shall execute a power of attorney ("**Power of Attorney**") in the form of Schedule 2 hereto, entrusting any nominee of the Pledgee to execute, on its behalf in accordance with this Agreement, any and all legal documents as may be required in order for the Pledgee to exercise its rights hereunder. Such Power of Attorney shall be submitted to the Pledgee for custody and may be presented by the Pledgee to relevant governmental authorities whenever necessary.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK. EXECUTION PAGE FOLLOWS]

Pledgor:

Wenzhi Cai
/s/ Wenzhi Cai

Company:

Guangzhou AnSiChuang Information Technology Co., Ltd. (seal)
/seal/ Guangzhou AnSiChuang Information Technology Co., Ltd.
/s/ Wenzhi Cai

Name: Wenzhi Cai
Title: Legal Representative

Pledgee:

Guangzhou LianYiYun Information Technology Co., Ltd. (seal)
/seal/ Guangzhou LianYiYun Information Technology Co., Ltd.
/s/ Wenzhi Cai
Name: Wenzhi Cai
Title: Legal Representative

Exhibit 4.98

English translation

This **Exclusive Technology Development, Consulting and Service Agreement** (the "**Agreement**") is signed by the following parties on January 17, 2019:

A. **Haishaman (Shanghai) Information Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: No. 24, Yangxin East Road, Pudong New District, Shanghai ("**Party A**");

B. **Shanghai Ruogu Information Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 1201-D22, No. 18 Guobin Road, Yangpu District, Shanghai ("**Party B**").

In this Agreement, Party A and Party B are collectively referred to as the "Parties" and each is referred to as a "Party".

Recitals:

1. Party A is a wholly foreign-owned enterprise established in the People's Republic of China (the "**PRC**") with resources and qualifications for technology development, consulting and services;

2. Party A agrees to provide Party B with technical development, consulting and related services, and Party B agrees to accept the technical development, consulting and related services provided by Party A.

After friendly negotiation, the two parties reached a consensus on providing technical consultation and related services. To clarify the rights obligations of both parties, the parties enter into this agreement for mutual compliance.

Article 1 Technology Development, Consulting and Services; Sole and Exclusive Rights

1. During the term of this Agreement, Party A agrees to provide Party B with relevant technology development, consultation and services as Party B's technology development, consultation and service provider according to the conditions of this Agreement (see the attachment for details).

2. Party B agrees to accept the technical development, consultation and services provided by Party A. Party B further agrees that, unless with the prior written consent of Party A, during the term of this Agreement, Party B shall not accept the same or similar technology development, consultation and services provided by any third party for the above-mentioned business.

3. For all rights and interests arising from the performance of this Agreement, including but not limited to ownership, intellectual property rights such as copyrights, patent rights, technical secrets, trade secrets and others, whether developed by Party A or Party B based on Party A's original intellectual property rights, Party A shall be entitled to sole and exclusive rights.

Article 2 Calculation and Payment of Fees

1. Both parties agree that Party B shall pay Party A the technical development, consulting and service fees (the "**Consulting Service Fees**") under this Agreement on a quarterly basis, and the Consulting Service Fees shall be determined by both parties according to the actual service content. In principle, the Consulting Service Fees shall be the balance of Party B's total income deducting all expenses, but the two parties may negotiate to determine the specific amounts otherwise. Party B shall notify Party A within thirty (30) days at the end of each quarter, provide Party B's management statements and operating data for such quarter, including Party B's net income for such quarter.

2. The amount of the Consulting Service Fees shall be determined based on the following factors:

   (a) The difficulty of technology development and the complexity of consulting and management services;

   (b) The time required for Party A to provide such technical development, consulting and management services; and

   (c) The specific content and business value of technology development, consulting and management services.

3. The Consulting Service Fees shall be the amounts as approved by Party A and the board of directors of Party A’s overseas ultimate controlling parent company, Mangatoon Inc. (the "**Overseas Company**”), which shall include the consent from directors appointed by the preference shareholders of the Overseas Company (“**Investor Director**”)). Any adjustment and change of Consulting Service Fees shall be approved by Party A and the board of directors of the Overseas Company (which should include the consent of the Investor Director).

4. Within thirty (30) days following the end of each year, Party B shall provide Party A with the financial statements and all operating records, business contracts and financial information of the year. If Party A questions the financial materials provided by Party B, it may appoint a reputable independent accountant to audit the relevant material, and Party B shall cooperate.

Article 3 Representations and Warranties

1. Party A hereby represents and warrants as follows:

   (a) Party A is a company legally established and validly existing in accordance with the PRC laws.

   (b) Party A signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

   (c) This Agreement once executed, will constitute legal, valid, binding and enforceable obligations on Party A in accordance with the terms of this Agreement.

2. Party B hereby represents and warrants as follows:

   (a) Party B is a company legally established and validly existing in accordance with the PRC laws.

   (b) Party B signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

   (c) This Agreement once executed, will constitute legal, valid, binding and enforceable obligations on Party B in accordance with the terms of this Agreement.

Article 4 Confidentiality

1. The parties acknowledge that any oral or written information they exchange in connection with this Agreement is confidential (the "**Confidential Information**"). Each party shall keep all such Confidential Information confidential and shall not disclose any Confidential Information to any third party without the written consent of the other party, except in the following cases: (a) the public know or will know such Confidential Information (but not disclosed to the public by the recipient); (b) Confidential Information required to be disclosed by applicable law or the rules or regulations of any stock exchange; or (c) Confidential Information needs to be disclosed to their legal or financial advisors of any party in connection with the transactions under this Agreement, and such legal advisors or financial advisors are also bound by obligations of confidentiality similar to those in this section. Disclosure of any Confidential Information by staff or agencies employed by any Party shall be deemed to be disclosure of such Confidential Information by such Party, and such Party shall be liable for any breach of this Agreement.

2. Both parties agree that this clause will continue to be effective regardless of whether this Agreement is modified, cancelled or terminated.

Article 5 Indemnification

Party B shall indemnify Party A in full for any loss, damage, obligation and/or expense as required by Party A resulting from any lawsuits, claims or other requests arising from or incurred by the content of technology development, consultation and services requested by Party B, and hold Party A harmless from any damage and losses caused by Party B’s behaviors or any third party’s claims for Party B’s behaviors, except for the aforementioned lawsuits, claims or other requests caused by Party A's willful conduct or gross negligence.

Article 6 Effectiveness and Term

This Agreement is signed on the date indicated at the beginning of the text and takes effect at the same time. Unless the parties agree in writing to terminate this Agreement, this Agreement will continue to be effective.

Article 7 Termination

1. Termination on Expiry Date

   This Agreement shall be terminated on the expiry date unless renewed in accordance with the relevant provisions of this Agreement.

2. Early Termination

   During the term of this Agreement, this Agreement shall not be terminated in advance unless Party A becomes bankrupt or legally dissolved or terminated; If Party B goes bankrupt or is legally dissolved and terminated before the expiration date of this Agreement, this Agreement shall be automatically terminated. Notwithstanding the terms above, Party A always has the right to terminate this Agreement at any time by giving Party B a written notice thirty (30) days in advance.

3. Terms after Termination

   After the termination of this Agreement, the rights and obligations of both parties under Articles 4, 5 and 8 will continue to be effective.

Article 8 Disputes Resolution

1. In the event of a dispute between both parties regarding the interpretation and performance of the clauses under this Agreement, both parties shall negotiate and resolve the dispute in good faith. If within thirty (30) days after one party sending the other party a written notice requesting a negotiated settlement, both parties have not reached an agreement to resolve the dispute, either party may submit the relevant dispute to the Beijing Arbitration Commission for arbitration in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on both parties.

Article 9. Force Majeure

1. The "Force Majeure Event" means any event beyond the reasonable control of the party and which is unavoidable with the reasonable care of the affected party, including but not limited to, government actions, natural forces, fires, explosions, storms, floods, earthquakes, tides, lightning or war. However, lack of credit, funds or financing shall not be deemed to be a matter beyond the reasonable control of the party. A party that is affected by a Force Majeure Event and seeking to be exempted for liabilities from performance under this Agreement shall notify the other party of such Force Majeure Event as soon as possible, and inform the other party of the steps to be taken to complete the performance.

2. When the performance of this Agreement is delayed or hindered by force majeure as defined above, the party affected by the force majeure shall not bear any liabilities under this Agreement to the extent that it is delayed or hindered. The party affected by force majeure shall take appropriate measures to reduce or eliminate the effects of force majeure, and shall endeavor to resume the performance of obligations delayed or hindered by force majeure. Once the Force

Majeure Event is eliminated, both parties agree to use their best efforts to resume the performance of this Agreement.

Article 10 Notification

Unless there is a written notice to change the address listed below, notices under this Agreement shall be delivered by hand or by registered mail to the address listed below. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending the notice shall be the date of delivery:

Party A: Haishaman (Shanghai) Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone: ***
Mail: ***
Attention: ***

Party B: Shanghai Ruogu Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone:***
Mail:***
Attention: ***

Article 11 Assignment

Party B shall not assign its rights and/or obligations under this Agreement to any third party unless having obtained Party A's prior written consent.

Article 12 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 13 Amendments and Supplements to the Agreement

Both parties make amendments and supplements to this Agreement shall be in a form of written agreement. Amendments and supplements to this Agreement signed by both parties are an integral part of this Agreement and have the same legal effect as this Agreement.

Article 14 Governing Law

This Agreement shall be governed by, enforced and construed in accordance with the PRC laws.

[No text below]

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Party A:

Haishaman (Shanghai) Information Technology Co., Ltd.

/seal/ Haishaman (Shanghai) Information Technology Co., Ltd.
/s/ Pan Wei

Name: Pan Wei
Title: Legal Representative

Party B:

Shanghai Ruogu Information Technology Co., Ltd.

/seal/ Shanghai Ruogu Information Technology Co., Ltd.
/s/ Pan Wei

Name: Pan Wei
Title: Legal Representative

Exhibit 4.99

English translation

This **Amended and Restated Exclusive Option Agreement** (this "**Agreement**") is signed by the following parties on June 18, 2021:

A **Haishaman (Shanghai) Information Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: No. 24 Yangxin East Road, Pudong New District, Shanghai (hereinafter referred to as "**Party A**");

B **Guangzhou Huaduo Network Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: 24th Floor, Building B-1, North Area, Wanda Commercial Plaza, Wanbo Business Area, No. 79 Wanbo 2nd Road, Nancun Town, Panyu District, Guangzhou (hereinafter referred to as "**Party B 1**")

C **Guangzhou Ruicheng Network Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: 3204, No. 79, Wanbo 2nd Road, Nancun Town, Panyu District, Guangzhou (hereinafter referred to as "**Party B 2**", together with Party B1, referred to as "**Party B**");

D **Shanghai Ruogu Information Technology Co., Ltd.,** a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 3304, 3rd Floor, No. 17, Lane 658, Jinzhong Road, Changning District, Shanghai (hereinafter referred to as "**Party C**").

Party A, Party B and Party C are collectively referred to as "Parties" and each is referred to as a "Party" in this Agreement.

Recitals

1 Party B holds 100.00% of the equity shares of Party C.

2 Party A and Party C have signed an Exclusive Technology Development, Consulting and Service Agreement dated January 17, 2019 (the "**Service Agreement**").

3 Party A, Party B and Party C have signed the Restated and Amended Equity Pledge Agreement dated June 18, 2021 (the “**Equity Pledge Agreement**”).

After friendly negotiation, all parties reached a consensus on the exclusive option. In order to clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Purchase and Sale of Shares

1. Grant of Rights

   (a) Party B hereby irrevocably grants an irrevocable exclusive option to Party A, as permitted under the laws of PRC, to purchase all or part of the shares of Party C held by Party B from Party B or one or more persons designated by Party B (the "**Designated Person**") at any time in accordance with the exercise steps at the discretion of Party A and at the price stated in paragraph 3 of Article 1 of this Agreement (the "**Shares Purchase Option**"). Except for Party A and the Designated Person, no third party shall have the Shares Purchase Option. Party C hereby agrees that Party B grants Party A the Shares Purchase Option.

   (b) "Person" as used in this paragraph and this Agreement means any individual, company, joint venture, partnership, enterprise, trust or unincorporated organization.

2. Exercise Steps

   Party A exercises its Shares Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Shares Purchase Option, it shall send a written notice to Party B (the "**Shares Purchase Notice**"), and the Shares Purchase Notice shall specify the following matters:

   (a) Party A's decision on exercising the Shares Purchase Option;

   (b) The number of shares that Party A intends to purchase from Party B (the "**Purchased Shares**");

   (c) Purchase date/shares transfer date.

3. Shares Purchase Price

   Unless the evaluation is required by law, the purchase price of the Purchased Shares (the "**Shares Purchase Price**") shall be RMB 100 or the lowest price permitted by PRC laws and regulations.

4. Transfer of Purchased Shares

   Each time Party A exercises the Shares Purchase Option,

(a) Party B shall instruct Party C to convene a shareholders' meeting in a timely manner, at which a resolution to approve the transfer of the Purchased Shares by Party B to Party A and/or the Designated Person shall be passed;

(b) Party B shall enter into a share transfer agreement with Party A (or, where applicable, the Designated Person) in accordance with the provisions of this Agreement and the Shares Purchase Notice;

(c) Relevant parties shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all necessary actions to transfer valid title of the Purchased Shares, free of any Security Interest, to Party A and/or Designated Person and make Party A and/or Designated Person the registered owner of the Purchased Shares.

(d) For the purposes of this paragraph and this Agreement, "**Security Interest**" includes a security, mortgage, right or interest of a third party, any stock option, right of acquisition, right of first refusal, right of set-off, retention of title or other security arrangement, etc., but for the avoidance of doubt, excludes any security interest incurred under this Agreement and the Equity Pledge Agreement, namely that Party B pledges all of its shares in Party C to Party A according to the Equity Pledge Agreement, in order to ensure that Party C's performance of its obligations under the Service Agreement.

Article 2 Covenants Related to Shares

1. Covenants of Party C:

Party B (as a shareholder of Party C) and Party C hereby covenant that:

(a) Without the prior written consent of Party A or Mangatoon Inc., the overseas ultimate controlling parent company of Party A (the "**Party A's Parent Company**"), shall not supplement, change or amend the articles of association of Party C in any form, increase or decrease its registered capital, or otherwise change its registered capital structure;

(b) To keep its existence, to conduct its business and deal with its affairs prudently and validly in accordance with good financial and commercial standards and practices;

(c) Without the prior written consent of Party A or Party A’s Parent Company, shall not sell, transfer, mortgage or otherwise dispose of any assets, business, income or other legal rights and interests of Party C at any time from the date of execution of this Agreement, or allow creation of any other security interest thereon;

(d) Without the prior written consent of Party A or Party A's Parent Company, no liabilities shall be incurred, inherited, guaranteed or allowed to exist, except for the following:

   (i) Indebtedness incurred in the normal or ordinary course of business and not by way of borrowing; and

   (ii) Debts that have been disclosed to Party A and have been written approved by Party A.

(e) Keep operating all businesses in the ordinary course of business, maintain the value of Party C's assets, and refrain from any actions/omissions that may affect its operating conditions and asset value;

(f) Without the prior written consent of Party A or Party A's Parent Company, no material agreement shall be executed or terminated outside of the scope of ordinary operations, the aforementioned material agreement refers to an agreement with an Agreement value exceeding RMB fifty (50) thousand;

(g) Not to provide loans or credits to anyone without the prior written consent of Party A or Party A's Parent Company;

(h) At the request of Party A, provide Party A with all materials on Party C's operations and financial conditions;

(i) Party C purchases and maintains insurance from an insurance company accepted by Party A, and the amount and type of insurance maintained shall be the same as those usually insured by companies operating similar businesses and possessing similar properties or assets in the same region;

(j) Without the prior written consent of Party A or Party A's Parent Company, it shall not merge or combine with any person, or acquire or invest in any person;

(k) Party C shall not be liquidated, dissolved or deregistered without the prior written consent of Party A or Party A’s Parent Company;

(l) Immediately notify Party A of any litigation, arbitration or administrative proceedings that have occurred or may occur in relation to Party C's assets, business and income;

(m) To protect Party C's ownership of all its assets, sign all necessary or appropriate documents, take all necessary or appropriate actions and file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(n) Without the prior written consent of Party A or Party A’s Parent Company, dividends shall not be distributed to its shareholders in any form, but upon Party A's request, all distributable profits shall be distributed immediately to their respective shareholders; and

(o) At the request of Party A, appoint any person designated by Party A to serve as the director of Party C.

2. Party B covenants that:

(a) Without the prior written consent of Party A or Party A's Parent Company, not to sell, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, at any time from the date of this Agreement, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(b) Without the prior written consent of Party A or Party A's Parent Company, it shall not procure the meeting of shareholders of Party C or board of directors of Party C to approve the sale, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(c) Without the prior written consent of Party A or Party A’s Parent Company, it shall not procure the meeting of shareholders of Party C or board of directors of Party C to approve Party C’s merger or combination with, or acquisition of, or investment in, any person;

(d) promptly notify Party A of any litigation, arbitration or administrative proceeding that has occurred or may occur in relation to its equity;

(e) Procure the meeting of shareholders of Party C and board of directors of Party C to vote and approve the transfer of the Purchased Shares specified in this Agreement;

(f) To maintain its ownership of the shares, execute all necessary or appropriate documents, actively take all necessary or appropriate actions and/or file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(g) At the request of Party A, appoint any person designated by Party A as the director of Party C;

(h) Upon Party A's request at any time, it shall unconditionally and immediately transfer its shares to Party A or its designated representative at any time, and waive its right of first refusal to other shareholders in respect of the abovesaid shares transfer; and

(i) Strictly abide by the provisions of this Agreement and other agreements signed jointly or separately by Party A, Party A's Parent Company, Party B and Party C, perform all obligations under such agreements, and do not take any acts or omissions that may affect the validity and enforceability of such agreements. If Party B has any remaining rights to the equity shares under this Agreement or under the Equity Pledge Agreement or under the power of attorney granted by Party A as the beneficiary, Party B shall not exercise such rights unless in accordance with the written instructions of Party A.

3. Party B and Party C shall not revoke the abovesaid covenants.

Article 3 Assets Purchase Option

1. Definition

   "Assets" refers to all assets of Party C, including but not limited to fixed assets, existing assets, intellectual property rights and interests under all the agreements signed by Party C. The aforementioned intellectual property rights include patents, patent application rights, trademark rights, trademark application rights, trade names, copyrights, trade secrets, inventions, technical secrets, designs, slogans, symbols, website design, layout design, and domain names. that Party C creates, owns, or is entitled to in the present and in the future.

2. Grant of Rights

   To the extent permitted by the PRC laws, Party B and Party C hereby irrevocably grant Party A an exclusive right, that is, Party A follows the exercise steps at its own discretion of Party A and in accordance with the provisions of Article 3 paragraph 4 of this Agreement, purchase, or the Designated Person purchase, all or part of the assets held by Party C from Party C at any time ("**Assets Purchase Option**"). Party B unanimously agrees that Party C shall grant Party A the Assets Purchase Option.

3. Exercise Steps

   (a) Party A exercises its Assets Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Assets Purchase Option, it shall send a written notice to Party B (the "**Assets Purchase Notice**"), and the Assets Purchase Notice shall specify the following matters:

      (i) Party A's decision on exercising the Assets Purchase Option;

      (ii) The assets that Party A intends to purchase from Party B (the "**Purchased Assets**");

      (iii) Purchase date.

   (b) After the Assets Purchase Notice sent, every time Party A exercises the Assets Purchase Right, Party C shall guarantee to perform the following matters, and Party B shall guarantee to urge Party C to perform the following matters:

      (i) Enter into an assets transfer agreement with respect to the Purchased Assets in accordance with this Agreement and each Assets Purchase Notice; and

      (ii) Shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all required actions to transfer the valid title to the Purchased Assets to Party A and/or the Designated Person without any security interest attached, and complete the registration and filing procedures required for the transfer of intellectual property rights in accordance with relevant PRC

laws and regulations, so that Party A and/or the Designated Person become the registered owners of the Purchased Assets.

4. Assets Purchase Price

   Unless otherwise provided by laws, the purchase price of the Purchased Assets (the "**Assets Purchase Price**") shall be RMB 100 or the maximum price permitted under the PRC laws and regulations. Party C shall bear all taxes and fees arising from the transfer of the Purchased Assets.

Article 4 Representations and Warranties of Party B and Party C

Party B and Party C hereby respectively represents and warrants to Party A on the date hereof and on each transfer date as follows:

1. It has the ability to enter into and deliver this Agreement and any shares transfer agreement to which it is a party of and executed for each transfer of the Purchased Shares pursuant to this Agreement (respectively referred to as "**Transfer Agreement**"), and the powers and rights to perform its obligations under this Agreement and any Transfer Agreement. This Agreement and each Transfer Agreement signed by it as a party shall constitute its legal, valid and binding obligations from the date of execution and can be enforced in accordance with the terms of this Agreement or each Transfer Agreement;

2. Neither the execution and delivery of this Agreement or any Trasnfer Agreement nor the performance of its obligations under this Agreement or any Transfer Agreement will:

   (a) result in a violation of any relevant PRC laws;

   (b) conflict with Party C's articles of association or other organizational documents;

   (c) cause or constitute a breach of any agreement or document to which it is a party or binding to it;

   (d) cause a breach of any condition of the grant and/or continuation of any license or approval issued to it; or

   (e) cause any license or approval issued to it to be suspended or revoked or subject to additional conditions.

3. Party B has the legal ownership of the shares it holds. Party B does not have any security interest in the abovesaid shares, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

4. Party C has good and transferable title to all its assets and has not created any security interest on abovesaid assets;

5. Party C does not have any outstanding debts, except in the following cases:

   (a) debts incurred in the ordinary course of its business, and

   (b) debts disclosed to Party A and agreed in writing by Party A.

6. Party C complies with all applicable laws and regulations;

7. There are currently no ongoing, pending or potential litigation, arbitration or administrative proceedings in relation to Party C's equity, Party C's assets, or Party C.

Article 5 Effective Date and Term

This Agreement takes effect on the date upon signing this Agreement. This Agreement will continue to be effective unless both parties agree in writing to terminate this Agreement.

Article 6 Governing Law and Dispute Resolution

1. Governing Law

   The execution, validity, interpretation and performance of this Agreement, as well as the settlement of disputes under this Agreement, shall be governed by the PRC laws.

2. Dispute Resolution

   Any disputes arising from the interpretation and performance of this Agreement shall be settled by the parties to this Agreement first through friendly negotiation. If the dispute remains unresolved within thirty (30) days after one party has given a written notice to the other party requesting a negotiation, either party may submit the dispute to the Beijing Arbitration Commission, and the dispute shall be settled by arbitration in accordance

with its then-effective arbitration rules. The place of arbitration shall be Beijing. The arbitral award is final and binding on the parties.

Article 7 Taxes and Fees

Each party shall be responsible for any and all taxes and fees incurred by or levied on the party in accordance with the laws of PRC in connection with the preparation and execution of this Agreement and each Transfer Agreement and the completion of the transactions contemplated by this Agreement and each Transfer Agreement.

Article 8 Notification

Unless there is a written notice to change the address listed below, notices under this Agreement shall be delivered by personal delivery or by registered mail to the address listed below. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending off shall be the date of delivery:

Party A: Haishaman (Shanghai) Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone: ***
Mail: ***
Attention: ***

Party B: Guangzhou Huaduo Network Technology Co., Ltd., Guangzhou Ruicheng Network Technology Co., Ltd.

Address: 29th Floor, Building B-1, Wanda Plaza, No. 79 Wanda 2nd Road, Panyu District, Guangzhou
Telephone: ***
Mail: ***
Attention: ***

Party C: Shanghai Ruogu Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone:***
Mail:***
Attention: ***

Article 9 Confidentiality

1. The parties acknowledge and confirm that any oral or written information exchanged with each other in relation to this Agreement is confidential. Each party shall keep all such information confidential and shall not disclose any such information to any third party without the written consent of the other party, except in the following cases:

   (a) the information is or will be known to the public (but is not or will not be disclosed to the public by the party receiving the information without authorization);

   (b) information required to be disclosed by applicable laws or regulations; or

   (c) information disclosed by either party to its legal or financial advisor in connection with the transaction described in this Agreement and such legal or financial advisor shall also be subject to an obligation of confidentiality similar to this Article.

2. If any party's staff or agency leaks the information, it will be regarded as the leakage by such party, and it shall be liable for breach of this Agreement in accordance with this Agreement. Regardless of the termination of this Agreement for any reason, this Article shall remain in effect.

Article 10 Further Assurance

The parties agree to promptly execute the documents which are reasonably necessary for or beneficial to carry out the provisions and purposes of this Agreement, and to take further actions reasonably necessary or beneficial to carry out the provisions and purposes of this Agreement.

Article 11 Termination of Agreement, Liability for Breach of Agreement and Indemnification

1. If either party to this Agreement breaches the obligations stipulated in this Agreement ("**Breaching Party**"), the other party ("**Non-breaching Party**") may send a written notice to the Breaching Party requesting the Breaching Party to correct its breach of Agreement. The Breaching Party shall cease its breach of Agreement within thirty (30) days from the date of receipt of the above notice, and indemnify the Non-breaching Party for all losses thus incurred; if the Breaching Party continues to breach its obligations after

receipt of the above notice within thirty (30) days, any Non-breaching Party has the right to unilaterally terminate this Agreement, and at the same time has the right to request the Breaching Party to indemnify the Non-breaching Party for all losses suffered thereto.

2. Any relieve, grace or delay of exercising its rights provided by the laws or provisions of this Agreement given by the Non-breaching Party to any breach of the Agreement by the Non-breaching Party shall not be deemed a waiver of its rights by the Non-breaching Party.

3. For any disputes or lawsuits brought by a third party over the Purchased Shares due to Party B or Party C's breach of any statutory or contractual warranties, representations or other terms under this Agreement or before the transfer of the Purchased Shares, and cause Party A, its officers, managers, directors, shareholders, members, representatives, agents and employees ("**Indemnified Persons**") to suffer any and all claims, damages, liabilities, expenses and fees, including but not limited to reasonable attorneys' fees, in any actions or legal proceedings between the indemnifying person and the Indemnified Person, or between the Indemnified Person and any third parties, both Party B and Party C shall indemnify, defend and hold harmless Party A, unless such liability arises from the willful misconduct or gross negligent by the Indemnified Person.

Article 12 Miscellaneous

1. Modifications, Amendments and Supplements

   Modifications, amendments and supplements to this Agreement must be in writing and become effective after being duly signed and sealed by all the parties. Once executed, this Agreement will terminate and supersede the exclusive option agreement signed by the parties (and other parties to this Agreement) on July 23, 2019.

2. Compliance with Laws and Regulations

   Each party shall comply with and shall ensure that each party operates in full compliance with all the laws and regulations officially promulgated by and publicly available in the PRC.

3. Entire Agreement

Except for any written amendments, supplements or modifications made after the signing of this Agreement, this Agreement constitutes the entire agreement between the parties to this Agreement with respect to the subject matter of this Agreement and supersedes all prior oral agreements with respect to the subject matter of this Agreement. or written negotiations, representations and agreements.

4. Headings

The headings of this Agreement are for convenience only and should not be used to interpret, illustrate or otherwise affect the meaning of the provisions of this Agreement.

5. Language

This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

6. Severability

If any one or more provisions of this Agreement are ruled to be invalid, illegal or unenforceable in any respect under any laws or regulations, the validity, legality or enforceability of the other provisions of this Agreement shall not be affected or damaged in any way. The parties shall negotiate in good faith to seek to replace those invalid, illegal or unenforceable provisions with effective provisions, and the economic effects of such effective provisions shall be as similar as possible to those invalid, illegal or unenforceable provisions.

7. Successor

This Agreement shall be binding on each party's respective successors and assignees permitted by each party.

8. Continuation

(a) Any obligations arising out of or becoming due of this Agreement prior to the expiry or early termination of this Agreement shall survive after the expiry or early termination of this Agreement.

(b) The terms of Articles 6, 9, 11 and paragraph 8 of Article 12 of this Agreement shall continue to be effective after the termination of this Agreement.

9. Waiver

Either party may waive the terms and conditions of this Agreement, but it must be in writing and signed by all parties to become effective. A waiver by a party with respect to a breach by other party in certain instance shall not be deemed to be a waiver by such party of a similar breach by other party in other instances.

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Party A:

Haishaman (Shanghai) Information Technology Co., Ltd. (seal)

/seal/ Haishaman (Shanghai) Information Technology Co., Ltd.
/s/ Pan Wei
Name: Pan Wei
Title: Legal Representative

Party C:

Shanghai Ruogu Information Technology Co., Ltd. (seal)

/seal/ Shanghai Ruogu Information Technology Co., Ltd.
/s/ Pan Wei
Name: Pan Wei
Title: Legal Representative

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Party B:

Guangzhou Huaduo Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Huaduo Network Technology Co., Ltd.
/s/ Li Ting
Name: Li Ting
Title: Legal Representative

Signature Page to the Amended and Restated Exclusive Option Agreement

This page is a signature page

Party B:

Guangzhou Ruicheng Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Ruicheng Network Technology Co., Ltd.
/s/ Li Ting
Name: Li Ting
Title: Legal Representative

Signature Page to the Amended and Restated Exclusive Option Agreement

Exhibit 4.100

English translation

This **Amended and Restated Equity Interest Pledge Agreement** (the "**Agreement**") is signed by the following parties on June 18, 2021:

A **Haishaman (Shanghai) Information Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: No. 24 Yangxin East Road, Pudong New District, Shanghai (the "**Pledgee**");

B **Guangzhou Huaduo Network Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: 24th Floor, Building B-1, North Area, Wanda Commercial Plaza, Wanbo Business Area, No. 79 Wanbo 2nd Road, Nancun Town, Panyu District, Guangzhou ("**Guangzhou Huaduo**")

C **Guangzhou Ruicheng Network Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: 3204, No. 79, Wanbo 2nd Road, Nancun Town, Panyu District, Guangzhou ("**Guangzhou Ruicheng**", together with Guangzhou Huaduo, the "**Pledgor**");and

D **Shanghai Ruogu Information Technology Co., Ltd.,** a limited liability company legally established and existing under the laws of the People's Republic of China, whose registered address is:Room 3304, 3rd Floor, No. 17, Lane 658, Jinzhong Road, Changning District, Shanghai (the "**Domestic Company**").

In this Agreement, the Pledgee, the Pledgors and the Domestic Company are collectively referred to as the "**Parties**", and each is referred to as a "**Party**".

Recitals:

1 The Domestic Company is a company incorporated in China, and the Pledgor owns a total of 100.00% equity of shares of the Domestic Company (see Annex 1).

2 The Pledgee and the Domestic Company signed an exclusive technology development, consulting and service agreement on January 1, 2019 (the "**Service Agreement**").

3 To ensure that the Pledgee can properly receive technology development and consulting service fees from the Domestic Company in accordance with the Service Agreement, the

pledger provides a pledge for the technology development and consulting service fees under the Service Agreement with all of its equity of shares in the Domestic Company.

After friendly negotiation, all parties reached an agreement on the equity interest pledge matter. To clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Definition and Interpretation

Unless otherwise specified in this Agreement, the following terms shall have the meanings:

1. Pledge: means all the contents as set forth in Article 2 of this Agreement.

2. Pledged Shares: means all the shares legally held by the Pledgor of the Domestic Company, in the aggregate of 100% shares of the Domestic Company.

3. Pledge Period: means the period specified in Article 3 of this Agreement.

4. Event of Default: means any circumstance as set forth in Article 7 of this Agreement.

5. Notice of Default: means the notice of Event of Default sent by the Pledgee in accordance with this Agreement.

Article 2 Pledge

1. The Pledgor pledges all of the shares held by it in the Domestic Company to the Pledgee, as a guarantee to prompt and complete payment and performance of any outstanding payment (including but not limited to those technology development and consulting service fees which shall be paid to the Pledgee under the Service Agreement) payable when due (whether a stipulated due date, by early repayment or otherwise), the total amount of secured credit is RMB833,775. The Pledgor pledges all the shares it owned of the Domestic Company (corresponding to the registered capital RMB833,775, representing 100% of the total registered capital of the Domestic Companies) to the Pledgee, and the amount of the secured credit is RMB833,775.

2. The Pledge means the right of the Pledgee to be paid preferentially with the proceeds from auction or sale of the shares pledged to the Pledgee.

Article 3 Pledge Period

1. This Agreement takes effect from the date of signing. The Pledge is effective from

the date of completion of shares pledge registration of the shares recorded on the register of shareholders of the Domestic Company with relevant market supervision and administrative department, and the validity period of the Pledge is the same as that of the Service Agreement.

2. During the Pledge Period, if the Domestic Company fails to pay the technical development and consulting service fees as stipulated in the Service Agreement, the Pledgee has the right to dispose of the pledge in accordance with the provisions of this Agreement and relevant PRC laws and regulations.

Article 4 Keeping of Pledge Certificate

1. During the Pledge Period stipulated in this Agreement, the Domestic Company shall and the Pledgor shall sign or procure the Domestic Company to sign the certificate of capital contribution and the register of shareholders as exhibits to this Agreement, and deliver the above duly signed documents to the Pledgee, and the Pledgee shall keep the above documents within the Pledge Period stipulated in this Agreement.

2. The Pledgee has the right to receive all cash income such as dividends and distributions and all non-cash income generated from the Pledged Shares since the execution of this Agreement.

Article 5 Representations and Warranties of the Pledgor and Domestic Company

The Pledgor and the Domestic Company hereby severally warrants to the Pledgee:

1. The Pledgor has full power and authority to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

2. The Domestic Company has full corporate power and authorization to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

3. The signing, delivery and performance of this Agreement and any related agreements by the Pledgor and the Domestic Company will not violate the followings due to the limitation of time and/or the occurrence of any act or event or any other reason:

   (a) Any incorporation documents of the Pledgor and the Domestic Company;

(b) any laws to which the Pledgor and the Domestic Company are subject; or

(c) Any terms stipulated and obligations assumed in any written or oral documents such as any contracts, agreements, memorandums, etc. that have been signed and entered into force by the Pledgor and the Domestic Company.

4. The Pledgor is the legal owner of the Pledged Shares.

5. At any time, once the Pledgee exercises the rights of the Pledgee under this Agreement, there should be no interference from any other party.

6. The Pledgee has the right to dispose of and transfer the pledge in the manner specified in this Agreement.

7. Except for the Pledgee, the Pledgor has not set any other pledge rights or any third-party rights on the shares.

Article 6 Covenants of the Pledgor

1. During the term of this Agreement, the Pledgor undertakes to the Pledgee that the Pledgor:

(a) except for the transfer of the shares to the Pledgee or persons designated by the Pledgee according to the Amended and Restated Exclusive Option Agreement signed by the Pledgor, the Pledgee and the Domestic Company on June 18, 2021, without the prior written consent of the Pledgee, shall not transfer the shares directly or indirectly in any forms, and shall not establish or allow any existence of any pledge or other forms of security that may affect the rights and interests of the Pledgee;

(b) shall comply with and implement all laws and regulations related to pledge of rights, and upon receipt of notices, instructions or suggestions from relevant competent authorities on the Pledge, shall provide the above notices, instructions or suggestions to the Pledgee within five (5) days, and shall comply with the above notices, instructions or recommendations, or make objections and representations on the above matters at the reasonable request of the Pledgee or with the consent of the Pledgee;

(c) shall notify the Pledgee of any event or notice received that may cause an impact on the rights of the Pledgor's shares or any part of the rights thereof, and any event or notice received that may alter any warranties or obligations

of the Pledgor under this Agreement, or may affect any performance of obligations under this Agreement by the Pledgor.

2. The Pledgor agrees that the exercise of the Pledgee's rights to the Pledge by the Pledgee in accordance with the terms of this Agreement shall not be interrupted or impaired by any legal proceeding taken by the Pledgor, the Pledgor's successors, spouse (if applicable), the Pledgor's principal or any other person.

3. The Pledgor warrants to the Pledgee that, in order to protect or improve the guarantee of this Agreement to the reimbursement of the technical development and consulting service fees under the Service Agreement, the Pledgor will duly sign, and procure other interested parties to sign, all the rights certificates, deeds, and/or will perform and procure other interested parties to perform actions required by the Pledgee, and will facilitate the exercise of the rights and authorizations granted to the Pledgee by this Agreement, and will sign all the change documents related to the share certificate with the Pledgee or its designated person (natural person/legal entity), and provide the Pledgee with all the notices, orders and decisions related to the Pledge that the Pledgee deems necessary within a reasonable period.

4. The Pledgor warrants to the Pledgee that, for the benefit of the Pledgee, the Pledgor will abide by and perform all warranties, covenants, agreements, representations and conditions. If the Pledgor fails to perform or does not fully perform its warranties, covenants, agreements, representations and conditions, the Pledgor shall compensate the Pledgee for all losses suffered thereby.

5. The Pledgor warrants to the Pledgee that on the date hereof, the Pledgor and the Domestic Company shall register the Pledge under this Agreement in the register of shareholders of the Domestic Company; and the Pledgor shall, and the Pledgor shall procure the Domestic Company to, complete the registration of equity interest pledge as soon as possible at the corresponding market supervision and administration bureau.

Article 7 Event of Default

1. The following events are considered Event of Default:

   (a) The Domestic Company fails to pay the technical development and consulting service fees payable under the Service Agreement in full and on time, or breach of any other obligations of the Domestic Company under the Service Agreement;

(b) Any representations or warranties made by the Pledgor and the Domestic Company in Article 5 of this Agreement are materially misleading or mistaken, and/or the Pledgor and the Domestic Company breach the representations and warranties of Article 5 of this Agreement;

(c) The Pledgor breaches the covenants in Article 6 of this Agreement;

(d) The Pledgor breaches any terms of this Agreement;

(e) Except as stipulated in Article 6, paragraph 1 (a) of this Agreement, the Pledgor loses the pledged shares for any reason, or transfers the pledged shares without the written consent of the Pledgee;

(f) Any external loan, guarantee, indemnification, covenants or other debts repayment obligation of the Pledgor itself (1) is required to be repaid or performed in advance due to breach of agreement; or (2) has expired but cannot be repaid or performed on time, causing the Pledgee to believe that the Pledgor's ability to perform its obligations under this Agreement has been affected;

(g) The Pledgor cannot repay general debts or other debts, so that the Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected;

(h) Due to the promulgation of relevant laws, this Agreement is illegal or the Pledgor cannot continue to perform its obligations under this Agreement;

(i) If all governmental consents, permits, approvals or authorizations necessary to enforce this Agreement or to make it legal or effective are withdrawn, suspended, voided or substantially modified;

(j) The Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected due to adverse changes in the financial assets owned by the Pledgor;

(k) The successors or custodians of the Domestic Company can only partially or refuse to perform the payment obligations under the Service Agreement;

(l) Other situations where the Pledgee cannot exercise or dispose of the Pledge according to relevant laws.

2. The Pledgor shall immediately notify the Pledgee in writing if it becomes aware of

or discovers that any matter referred to in paragraph 1 of this Article or an event that may give rise to the above matter has occurred. The Pledgee has the right to require the Pledgor to correct the breach of Agreement within a limited period.

3. Unless the Event of Default listed in paragraph 1 of this Article has been perfectly resolved to the satisfaction of the Pledgee, the Pledgee may, at the time of or at any time after the occurrence of the Event of Default by the Pledgor, send a notice of default to the Pledgor in writing form, requiring the Pledgor to immediately pay all the arrears and other payables under the Service Agreement or dispose of the Pledge in accordance with the provisions of Article 8 of this Agreement.

Article 8 Exercise of Pledge

1. Before the full payment of technical development and consulting service fees mentioned in the Service Agreement, without the written consent of the Pledgee,

   (a) The Pledgor shall not transfer the equity of the Domestic Company held by it for any reason or by any means;

   (b) The Pledgor shall not transfer or assign the Pledge.

2. The Pledgee may issue a notice of default to the Pledgor when exercising the Pledge.

3. Subject to the provisions of paragraph 3 of Article 7, the Pledgee may exercise the right to dispose of the Pledge at the same time as the notice of default is issued in accordance with paragraph 3 of Article 7 or at any time after the notice of default is issued.

4. The Pledgee has the right to discount all or part of the equity under this Agreement in accordance with legal procedures, or to receive priority compensation from the price of auction or sale of the equity, until the unpaid technology development, consulting service fees and all other payables have been paid off.

5. When the Pledgee disposes of the Pledge in accordance with this Agreement, the Pledgor shall not set up obstacles and shall provide necessary assistance to enable the Pledgee to realize its Pledge.

Article 9 Assignment

1. The Pledgor has no right to gift or transfer its rights and obligations under this Agreement unless the Pledgee consents in advance.

2. This Agreement is binding on the Pledgor and its successors and is effective on the Pledgor and each of its successors and assigns.

3. The Pledgee may at any time assign all or any of its rights and obligations under the Service Agreement to the person designated by it (natural person/legal entity), in which case the assignee shall enjoy and undertake the rights and obligations under this Agreement as those they should have enjoyed and undertaken as a party to this Agreement. When the Pledgee assigns the rights and obligations under the Service Agreement, at the request of the Pledgee, the Pledgor shall sign relevant agreements and/or documents regarding such assignment.

4. After the change of the Pledgee due to assignment, at the request of the Pledgee, the Pledgor shall enter into a new pledge agreement with the new pledgee subject to the same terms and conditions as this Agreement.

5. The Pledgor shall strictly abide by the provisions of this Agreement and other agreements signed by the parties hereto, or any of them, jointly or individually, including the Amended and Restated Exclusive Option Agreement and the Power of Attorney granted to the Pledgee as described in Article 6 paragraph 1 (a), perform the obligations under this Agreement and other agreements, and do not take any act or omission that may affect its validity and enforceability. Unless in accordance with the written instructions of the Pledgee, the Pledgor shall not exercise any of its remaining rights of the Pledged Shares under this Agreement.

Article 10 Termination

This Agreement shall be terminated after the technology development, consulting and service fees under the Service Agreement have been paid in full and the Domestic Company no longer undertakes any obligations under the Service Agreement. The Pledgee shall, within a reasonable and practicable time, terminate this Agreement and assist the Pledgor to cancel the registration of the equity interest pledge. Notwithstanding the aforementioned terms, the termination of this Agreement and the cancellation of the registration of the equity interest pledge shall be subject to the prior written consent of the investor directors of the parent company Mangatoon Inc., which actually controls the Domestic Company.

Article 11 Fees

1. All fees and actual expenses related to this Agreement, including but not limited to legal fees, cost of production, stamp duty and any other taxes, fees, etc. shall be borne by the Domestic Company. If the laws stipulate that the Pledgee shall pay the relevant taxes, the Domestic Company shall fully compensate the Pledgee for the

taxes and fees paid by the Pledgee.

2. If the Domestic Company fails to pay any taxes or fees payable by it in accordance with the provisions of this Agreement, or for other reasons, making the Pledgee takes any methods or means to be indemnified, the Domestic Company shall bear all expenses (including but not limited to various taxes, handling fees, management fees, litigation fees, attorney fees and various insurance fees for handling the Pledge) arising therefrom.

Article 12 Force Majeure

1. When the performance of this Agreement is delayed or hindered by any Force Majeure Event, the party affected by the force majeure shall not bear any responsibility under this Agreement only for this part of the delayed or hindered performance.

2. "Force Majeure Event" means any event beyond the reasonable control of a party and unavoidable with the reasonable care of the affected party, including, but not limited to, government action, natural forces, fire, explosion, geographical change, storm, flood, earthquake, tide, lightning or war. However, lack of credit, funds or financing shall not be deemed to be an event beyond the reasonable control of a party.

3. One party affected by a Force Majeure Event seeking to waive its responsibility of performance under this Agreement or any provision of this Agreement shall notify the other party of such waiver as soon as possible and inform it of the steps to be taken to complete the performance.

4. The party affected by force majeure shall not be liable for failure to perform its obligations under this Agreement, but the affected party shall try its best to reduce the losses caused to the other party, and the unfulfilled obligations are only limited to those unfulfilled due to force majeure. After the Force Majeure Event ends, the parties agree to use their best efforts to resume the performance of their obligations under this Agreement.

Article 13 Disputes Resolution

1. This Agreement shall be governed by and construed in accordance with the PRC laws.

2. In the event of a dispute between the parties to this Agreement regarding the interpretation and performance of the terms under this Agreement, the parties shall

resolve the dispute through negotiation in good faith. If within thirty (30) days after one party has given the other party a written notice requesting a negotiated settlement, the parties have not reached an agreement to resolve the dispute, either party may refer the dispute to Beijing Arbitration Commission in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on the parties.

Article 14 Notification

Unless there is a written notice to change the address listed below, notices under this Agreement shall be delivered by hand or by registered mail to the address listed below. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending the notice shall be the date of delivery:

Party A: Haishaman (Shanghai) Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone: ***
Mail: ***
Attention: ***

Party B: Guangzhou Huaduo Network Technology Co., Ltd., Guangzhou Ruicheng Network Technology Co., Ltd.

Address: 29th Floor, Building B-1, Wanda Plaza, No. 79 Wanda 2nd Road, Panyu District, Guangzhou
Telephone: ***
Mail: ***
Attention: ***

Party C: Shanghai Ruogu Information Technology Co., Ltd.

Address: Room 301, No. 12, Lane 658, Jinzhong Road, Shanghai
Telephone:***
Mail:***
Attention: ***

Article 15 Appendix

The annexes listed in this Agreement are an integral part of this Agreement.

Article 16 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 17 Effectiveness

1. This Agreement and any amendments, supplements or revisions must be in writing and become effective after being signed and/or sealed by all parties. Once this Agreement is signed, it will terminate and supersede the equity interest pledge agreement the parties executed on July 23, 2019.

2. This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

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Pledgee:

Haishaman (Shanghai) Information Technology Co., Ltd. (seal)

/seal/ Haishaman (Shanghai) Information Technology Co., Ltd.
/s/ Pan Wei

Name: Pan Wei
Title: Legal Representative

Domestic Company:

Shanghai Ruogu Information Technology Co., Ltd. (seal)

/seal/ Shanghai Ruogu Information Technology Co., Ltd.
/s/ Pan Wei

Name: Pan Wei
Title: Legal Representative

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Pledgor:

Guangzhou Huaduo Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Huaduo Network Technology Co., Ltd.
/s/ Li Ting

Name: Li Ting
Title: Legal Representative

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Pledgor:

Guangzhou Ruicheng Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Ruicheng Network Technology Co., Ltd.
/s/ Li Ting

Name: Li Ting
Title: Legal Representative

Exhibit 4.101

English translation

Power of Attorney

We the company, Guangzhou Huaduo Network Technology Co., Ltd., with the unified social credit code is: 91440113773312444L, holding the equity shares (the "**Company Shares**") corresponding to 185,910 Yuan registered capital of Shanghai Ruogu Information Technology Co., Ltd. (the "**Domestic company**”), on June 18, 2021, with respect to the Company Shares hereby irrevocably authorizes Haishaman (Shanghai) Information Technology Co., Ltd. (the “**WFOE**”) exercise the following rights during the term of this Power of Attorney:

Authorize WFOE to act as the sole and exclusive agent of the company, to exercise rights including but not limited to the following rights in the name of the company on the matters of the Company Shares: (1) participate in the shareholders' meeting of the Domestic Company and sign the relevant resolutions of the shareholders' meeting representing the company; (2) exercise all the shareholder's rights entitled to the company in accordance with the law and the articles of association of the Domestic Company, including but not limited to shareholder voting rights, rights of sale or transfer or pledge or disposition of all or any part of the Company Shares; and (3) to elect, designate and appoint the legal representative, chairman, director, supervisor, general manager and other senior management personnel of the Domestic Company as the authorized representative of the company.

WFOE will have the right to sign the transfer contract as stipulated in the restated and amended exclusive option agreement (the company being a party to the contract upon request) on behalf of the company within the scope of authorization, and shall perform as scheduled the restated and amended equity pledge agreement and the restated and amended exclusive option agreement which are signed on the same day as this power of attorney signed by the company as a party to, the exercise of which will not limit this authorization in any way.

WFOE has the right to transfer, use or otherwise dispose of cash dividends and other non-cash income generated from the Company Shares.

All actions of WFOE with respect to the Company Shares can be made according to WFOE's own discretion without any oral or written instructions from the company.

All actions of WFOE with respect to the Company Shares are regarded as the actions of the company, and all documents signed are deemed to be signed by the company, which will be ratified by the company.

WFOE has the right to delegate, which it can delegate to other individuals or units to handle the above matters and exercise the Company Shares without having to notify the company in advance or obtain the company's consent.

During the period when the company is a shareholder of the Domestic Company, this power of attorney is irrevocable and continues to be valid, starting from the date of signing this power of attorney. If and only if WFOE notifies the company in writing to terminate this power of attorney in whole or in part or to replace the agent, the company will immediately withdraw the authorization and delegation hereof, and immediately sign a power of attorney in the same form as this power of attorney, making the same authorization and delegation as the content of this power of attorney to other agent as designated by WFOE at that time; except for the abovementioned, the company will not revoke the authorization and delegation made to WFOE.

During the term of this power of attorney, the company hereby waives all rights related to the Company Shares that have been authorized to WFOE through this power of attorney, and will no longer exercise such rights by itself.

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[The following is the signature page]

Principal:

Guangzhou Huaduo Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Huaduo Network Technology Co., Ltd.
/s/ Li Ting
Name: Li Ting
Position:

Power of Attorney

We the company, Guangzhou Ruicheng Network Technology Co., Ltd., with the unified social credit code is: 91440101MA9UTLLH9U, holding the equity shares (the "**Company Shares**") corresponding to 647,865 Yuan registered capital of Shanghai Ruogu Information Technology Co., Ltd. (the "**Domestic company**”), on June 18, 2021, with respect to the Company Shares hereby irrevocably authorizes Haishaman (Shanghai) Information Technology Co., Ltd. (the “**WFOE**”) exercise the following rights during the term of this Power of Attorney:

Authorize WFOE to act as the sole and exclusive agent of the company, to exercise rights including but not limited to the following rights in the name of the company on the matters of the Company Shares: (1) participate in the shareholders' meeting of the Domestic Company and sign the relevant resolutions of the shareholders' meeting representing the company; (2) exercise all the shareholder's rights entitled to the company in accordance with the law and the articles of association of the Domestic Company, including but not limited to shareholder voting rights, rights of sale or transfer or pledge or disposition of all or any part of the Company Shares; and (3) to elect, designate and appoint the legal representative, chairman, director, supervisor, general manager and other senior management personnel of the Domestic Company as the authorized representative of the company.

WFOE will have the right to sign the transfer contract as stipulated in the restated and amended exclusive option agreement (the company being a party to the contract upon request) on behalf of the company within the scope of authorization, and shall perform as scheduled the restated and amended equity pledge agreement and the restated and amended exclusive option agreement which are signed on the same day as this power of attorney signed by the company as a party to, the exercise of which will not limit this authorization in any way.

WFOE has the right to transfer, use or otherwise dispose of cash dividends and other non-cash income generated from the Company Shares.

All actions of WFOE with respect to the Company Shares can be made according to WFOE's own discretion without any oral or written instructions from the company.

All actions of WFOE with respect to the Company Shares are regarded as the actions of the company, and all documents signed are deemed to be signed by the company, which will be ratified by the company.

WFOE has the right to delegate, which it can delegate to other individuals or units to handle the above matters and exercise the Company Shares without having to notify the company in advance or obtain the company's consent.

During the period when the company is a shareholder of the Domestic Company, this power of attorney is irrevocable and continues to be valid, starting from the date of signing this power of attorney. If and only if WFOE notifies the company in writing to terminate this power of attorney in whole or in part or to replace the agent, the company will immediately withdraw the authorization and delegation hereof, and immediately sign a power of attorney in the same form as this power of attorney, making the same authorization and delegation as the content of this power of attorney to other agent as designated by WFOE at that time; except for the abovementioned, the company will not revoke the authorization and delegation made to WFOE.

During the term of this power of attorney, the company hereby waives all rights related to the Company Shares that have been authorized to WFOE through this power of attorney, and will no longer exercise such rights by itself.

[No text below]

[The following is the signature page]

Principal:

Guangzhou Ruicheng Network Technology Co., Ltd. (seal)

/seal/ Guangzhou Ruicheng Network Technology Co., Ltd.
/s/ Li Ting
Name: Li Ting
Position:

Exhibit 4.102

English translation

This **Exclusive Technology Development, Consulting and Service Agreement** (the "**Agreement**") is signed by the following parties on February 18, 2022:

A **Blue Buck Network Technology (Beijing) Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 418, 4th Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Blue Buck Network**");

B **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Blue Ocean Whale Riding",** together with Blue Buck Network, referred to as "**Party A**")

C **Beijing Cengcengceng Information Technology Co., Ltd.,** a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 302, 3rd Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Party B**").

In this Agreement, Party A and Party B are collectively referred to as the "Parties" and each is referred to as a "Party".

Recitals:

1. Blue Buck Network is a wholly foreign-owned enterprise established in the People's Republic of China (the "**PRC**") with resources and qualifications for technology development, consulting and services;

2. Blue Ocean Whale Riding is a wholly foreign-owned enterprise established in the PRC with resources and qualifications for technology development, consulting and services;

3. Party A agrees to provide Party B with technical development, consulting and related services, and Party B agrees to accept the technical development, consulting and related services provided by Party A.

After friendly negotiation, the parties reached a consensus on providing technical consultation and related services. To clarify the rights and obligations of the parties, the parties enter into this agreement for mutual compliance.

Article 1 Technology Development, Consulting and Services; Sole and Exclusive Rights

1. During the term of this Agreement, Party A agrees to collectively provide Party B with relevant technology development, consultation and services as Party B's technology development, consultation and service provider according to the conditions of this Agreement (see the attachment for details).

2. Party B agrees to accept the technical development, consultation and services provided by Party A. Party B further agrees that, unless with the prior written consent of Party A, during the term of this Agreement, Party B shall not accept the same or similar technology development, consultation and services provided by any third party for the above-mentioned business.

3. For all rights and interests arising from the performance of this Agreement, including but not limited to ownership, intellectual property rights such as copyrights, patent rights, technical secrets, trade secrets and others, whether developed by Party A or Party B based on Party A's original intellectual property rights, Party A shall be entitled to sole and exclusive rights.

Article 2 Calculation and Payment of Fees

1. The parties agree that Party B shall pay Party A the technical development, consulting and service fees (the "**Consulting Service Fees**") under this Agreement on a quarterly basis, and the Consulting Service Fees shall be determined by the parties according to the actual service content. In principle, the Consulting Service Fees shall be the balance of Party B's total income deducting all expenses, but the parties may negotiate to determine the specific amounts otherwise. Party B shall notify Party A within thirty (30) days at the end of each quarter, provide Party B's management statements and operating data for such quarter, including Party B's net income for such quarter.

2. The amount of the Consulting Service Fees shall be determined based on the following factors:

   (a) The difficulty of technology development and the complexity of consulting and management services;

   (b) The time required for Party A to provide such technical development, consulting and management services; and

   (c) The specific content and business value of technology development, consulting and management services.

3. The Consulting Service Fees shall be the amounts as approved by Party A and the board of directors of Party A's overseas ultimate controlling parent company, Bluebuck Technology Limited (the "**Overseas Company**"), which shall include the consent from investor directors of the Overseas Company ("**Investor Director**"). Any adjustment and change of Consulting Service Fees shall be approved by Party A and the board of directors of the Overseas Company (which should include the consent of the Investor Director).

4. Within thirty (30) days following the end of each year, Party B shall provide Party A with the financial statements and all operating records, business contracts and financial information of the year. If Party A questions the financial materials provided by Party B, it may appoint a reputable independent accountant to audit the relevant material, and Party B shall cooperate.

Article 3 Representations and Warranties

1. Each of Party A hereby represents and warrants as follows:

   (a) Party A is a company legally established and validly existing in accordance with the PRC laws.

(b) Party A signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

(c) This Agreement once executed, will constitute legal, valid, binding and enforceable obligations on Party A in accordance with the terms of this Agreement.

2. Party B hereby represents and warrants as follows:

(a) Party B is a company legally established and validly existing in accordance with the PRC laws.

(b) Party B signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

(c) This Agreement once executed, will constitute legal, valid, binding and enforceable obligations on Party B in accordance with the terms of this Agreement.

Article 4 Confidentiality

1. The parties acknowledge that any oral or written information they exchange in connection with this Agreement is confidential (the "Confidential Information"). Each party shall keep all such Confidential Information confidential and shall not disclose any Confidential Information to any third party without the written consent of the other party, except in the following cases: (a) the public know or will know such Confidential Information (but not disclosed to the public by the recipient); (b) Confidential Information required to be disclosed by applicable law or the rules or regulations of any stock exchange; or (c) Confidential Information needs to be disclosed to their legal or financial advisors of any party in connection with the transactions under this Agreement, and such legal advisors or financial advisors are also bound by obligations of confidentiality similar to those in this section. Disclosure of any Confidential Information by staff or agencies employed by any Party shall be deemed to be disclosure of such Confidential Information by such Party, and such Party shall be liable for any breach of this Agreement.

2. The parties agree that this clause will continue to be effective regardless of whether this Agreement is modified, cancelled or terminated.

Article 5 Indemnification

Party B shall indemnify Party A in full for any loss, damage, obligation and/or expense as required by Party A resulting from any lawsuits, claims or other requests arising from or incurred by the content of technology development, consultation and services requested by Party B, and hold Party A harmless from any damage and losses caused by Party B’s

behaviors or any third party's claims for Party B's behaviors, except for the aforementioned lawsuits, claims or other requests caused by Party A's willful conduct or gross negligence.

Article 6 Effectiveness and Term

1. This Agreement is signed on the date indicated at the beginning of the text and takes effect at the same time. Unless it is terminated pursuant to the clauses of this Agreement or other agreements as executed by the parties, the term of this Agreement is ten (10) years.

2. The term of this Agreement may be extended with Party A's written confirmation before expiration. The term of extension is ten (10) years or other term as determined by the parties through negotiation.

Article 7 Termination

1. Termination on Expiry Date

   This Agreement shall be terminated on the expiry date unless renewed in accordance with the relevant provisions of this Agreement.

2. Early Termination

   During the term of this Agreement, this Agreement shall not be terminated in advance unless each of Party A becomes bankrupt or legally dissolved or terminated; If Party B goes bankrupt or is legally dissolved and terminated before the expiration date of this Agreement, this Agreement shall be automatically terminated. Notwithstanding the terms above, Party A always has the right to terminate this Agreement at any time by giving Party B a written notice thirty (30) days in advance.

3. Terms after Termination

   After the termination of this Agreement, the rights and obligations of the parties under Articles 4, 5 and 8 will continue to be effective.

Article 8 Disputes Resolution

In the event of a dispute between the parties regarding the interpretation and performance of the clauses under this Agreement, the parties shall negotiate and resolve the dispute in good faith. If within thirty (30) days after one party sending other parties a written notice requesting a negotiated settlement, the parties fails to reach an agreement to resolve the dispute, either party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on all the parties.

Article 9. Force Majeure

1. The "Force Majeure Event" means any event beyond the reasonable control of the party and which is unavoidable with the reasonable care of the affected party, including but not limited to, government actions, natural forces, fires, explosions,

storms, floods, earthquakes, tides, lightning or war. However, lack of credit, funds or financing shall not be deemed to be a matter beyond the reasonable control of the party. A party that is affected by a Force Majeure Event and seeking to be exempted for liabilities from performance under this Agreement shall notify the other party of such Force Majeure Event as soon as possible, and inform the other party of the steps to be taken to complete the performance.

2. When the performance of this Agreement is delayed or hindered by force majeure as defined above, the party affected by the force majeure shall not bear any liabilities under this Agreement to the extent that it is delayed or hindered. The party affected by force majeure shall take appropriate measures to reduce or eliminate the effects of force majeure, and shall endeavor to resume the performance of obligations delayed or hindered by force majeure. Once the Force Majeure Event is eliminated, the parties agree to use their best efforts to resume the performance of this Agreement.

Article 10 Notification

Notices under this Agreement shall be delivered by personal delivery or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in writing within two (2) days from such change. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending off shall be the date of delivery.

Article 11 Acting in Concert of Party A

Each right of Party A under this Agreement, shall be enjoyed and exercised together by Blue Buck Network and Blue Ocean Whale Riding, meaning that if Blue Buck Network or Blue Ocean Whale Riding desires to exercise Party A’s rights, they shall negotiate and reach a consensus to exercise together, and any party shall not exercise Party A’s rights alone under this Agreement.

Article 12 Assignment

Party B shall not assign its rights and/or obligations under this Agreement to any third party unless having obtained Party A's prior written consent.

Article 13 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 14 Amendments and Supplements to the Agreement

The parties shall make amendments and supplements to this Agreement in a form of written agreement. Amendments and supplements to this Agreement signed by all the

parties are an integral part of this Agreement and have the same legal effect as this Agreement.

Article 15 Governing Law

This Agreement shall be governed by, enforced and construed in accordance with the PRC laws.

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Blue Buck Network Technology (Beijing) Co., Ltd. (seal)

/seal/ Blue Buck Network Technology (Beijing) Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Beijing Cengcengceng Information Technology Co., Ltd. (seal)

/seal/ Beijing Cengcengceng Information Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Exhibit 4.103

English translation

This **Exclusive Option Agreement** (this "**Agreement**") is signed by the following parties on February 18, 2022:

A **Blue Buck Network Technology (Beijing) Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 418, 4th Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Blue Buck Network**");

B **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Blue Ocean Whale Riding",** together with Blue Buck Network, referred to as "**Party A**")

C **Zhou Yuan**, a citizen of the People's Republic of China, with its identity number *** (hereinafter referred to as "**Party B**");

D **Beijing Cengcengceng Information Technology Co., Ltd.,** a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 302, 3rd Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Party C**").

Party A, Party B and Party C are collectively referred to as "Parties" and each is referred to as a "Party" in this Agreement.

Recitals

1 Party B holds 100% of the equity shares of Party C.

2 Party A and Party C have signed an Exclusive Technology Development, Consulting and Service Agreement dated February 18, 2022 (the "**Exclusive Technology Development, Consulting and Service Agreement**") and a series of agreements.

3 Party A, Party B and Party C have signed the Equity Interest Pledge Agreement dated February 18, 2022 (the "**Equity Pledge Agreement**").

After friendly negotiation, all parties reached a consensus on the exclusive option. In order to clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Purchase and Sale of Shares

1. Grant of Rights

(a) Party B hereby irrevocably grants an irrevocable exclusive option to Party A, as permitted under the laws of PRC, to purchase all or part of the shares of Party C held by Party B from Party B or one or more persons designated by Party B (the "**Designated Person**") at any time in accordance with the exercise steps at the discretion of Party A and at the price stated in paragraph 3 of Article 1 of this Agreement (the "**Shares Purchase Option**"). Except for Party A and the Designated Person, no third party shall have the Shares Purchase Option. Party C hereby agrees that Party B grants Party A the Shares Purchase Option.

(b) "Person" as used in this paragraph and this Agreement means any individual, company, joint venture, partnership, enterprise, trust or unincorporated organization.

2. Exercise Steps

Party A's exercise of its Shares Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Shares Purchase Option, it shall send a written notice to Party B (the "**Shares Purchase Notice**"), and the Shares Purchase Notice shall specify the following matters:

(a) Party A's decision on exercising the Shares Purchase Option;

(b) The number of shares that Party A intends to purchase from Party B (the "**Purchased Shares**");

(c) Purchase date/shares transfer date.

3. Shares Purchase Price

Unless the evaluation is required by law, the purchase price of the Purchased Shares (the "**Shares Purchase Price**") shall be RMB 100 or the lowest price permitted by PRC laws and regulations. If Party A and Party B reach another agreement, then such agreement will prevail.

4. Transfer of Purchased Shares

Each time Party A exercises the Shares Purchase Option,

(a) Party B shall instruct Party C to convene a shareholders' meeting in a timely manner, at which a resolution to approve the transfer of the Purchased Shares by Party B to Party A and/or the Designated Person shall be passed;

(b) Party B shall enter into a share transfer agreement with Party A (or, where applicable, the Designated Person) in accordance with the provisions of this Agreement and the Shares Purchase Notice;

(c) Relevant parties shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all necessary actions to transfer valid title of the Purchased Shares, free of any Security Interest, to Party A and/or Designated Person and make Party A and/or Designated Person the registered owner of the Purchased Shares.

(d) For the purposes of this paragraph and this Agreement, "**Security Interest**" includes a security, mortgage, right or interest of a third party, any stock option, right of acquisition, right of first refusal, right of set-off, retention of title or other security arrangement, etc., but for the avoidance of doubt, excludes any security interest incurred under this Agreement and the Equity Pledge Agreement, namely that Party B pledges all of its shares in Party C to Party A according to the Equity Pledge Agreement, in order to ensure that Party C's performance of its obligations under the Exclusive Technology Development, Consulting and Service Agreement.

Article 2 Covenants Related to Shares

1. Party C hereby covenants that:

(a) Without the prior written consent of Party A or Bluebuck Technology Limited, the overseas ultimate controlling parent company of Party A (the "**Party A's Parent Company**"), shall not supplement, change or amend the articles of association of Party C in any form, increase or decrease its registered capital, or otherwise change its registered capital structure;

(b) To keep its existence, to conduct its business and deal with its affairs prudently and validly in accordance with good financial and commercial standards and practices;

(c) Without the prior written consent of Party A or Party A’s Parent Company, shall not sell, transfer, mortgage or otherwise dispose of any assets, business, income or other legal rights and interests of Party C at any time from the date of execution of this Agreement, or allow creation of any other security interest thereon;

(d) Without the prior written consent of Party A or Party A's Parent Company, no liabilities shall be incurred, inherited, guaranteed or allowed to exist, except for the following:

(i) Indebtedness incurred in the normal or ordinary course of business and not by way of borrowing; and

(ii) Debts that have been disclosed to Party A and have been approved by Party A in writing.

(e) Keep operating all businesses in the ordinary course of business, maintain the value of Party C's assets, and refrain from any actions/omissions that may affect its operating conditions and asset value;

(f) Without the prior written consent of Party A or Party A's Parent Company, no material agreement shall be executed or terminated beyond the scope of ordinary operations. The aforementioned material agreement refers to an agreement with an Agreement value exceeding RMB 50,000;

(g) Not to provide loans or credits to anyone without the prior written consent of Party A or Party A's Parent Company;

(h) At the request of Party A, provide Party A with all materials on Party C's operations and financial conditions;

(i) Party C purchases and maintains insurance from an insurance company accepted by Party A, and the amount and type of insurance maintained shall be the same as those usually insured by companies operating similar businesses and possessing similar properties or assets in the same region;

(j) Without the prior written consent of Party A or Party A's Parent Company, it shall not merge or combine with any person, or acquire or invest in any person;

(k) Immediately notify Party A of any litigation, arbitration or administrative proceedings that have occurred or may occur in relation to Party C's assets, business and income;

(l) To protect Party C's ownership of all its assets, sign all necessary or appropriate documents, take all necessary or appropriate actions and file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(m) Without the prior written consent of Party A or Party A's Parent Company, dividends shall not be distributed to its shareholders in any form, but upon Party A's request, all distributable profits shall be distributed immediately to their respective shareholders; and

(n) At the request of Party A, appoint any person designated by Party A to serve as the director of Party C.

2. Party B covenants that:

(a) Without the prior written consent of Party A or Party A's Parent Company, not to sell, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, at any time from the date of this Agreement, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(b) Without the prior written consent of Party A or Party A's Parent Company, it shall not procure the meeting of shareholders of Party C to approve the sale, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(c) Without the prior written consent of Party A or Party A's Parent Company, it shall not procure the meeting of shareholders of Party C to approve Party C's merger or combination with, or acquisition of, or investment in, any person;

(d) promptly notify Party A of any litigation, arbitration or administrative proceeding that has occurred or may occur in relation to its equity;

(e) Procure the meeting of shareholders of Party C to vote and approve the transfer of the Purchased Shares specified in this Agreement;

(f) To maintain its ownership of the shares, execute all necessary or appropriate documents, actively take all necessary or appropriate actions and/or file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(g) At the request of Party A, appoint any person designated by Party A as the director of Party C;

(h) Upon Party A's request at any time, it shall unconditionally and immediately transfer its shares to Party A or its designated representative at any time, and waive its right of first refusal to other shareholders in respect of the abovesaid shares transfer; and

(i) Strictly abide by the provisions of this Agreement and other agreements jointly or separately signed by Party A, Party A's Parent Company, Party B and Party C, perform all obligations under such agreements, and do not take any acts or omissions that may affect the validity and enforceability of such agreements.

3. Party B and Party C shall not revoke the abovesaid covenants. Party B and Party C shall be jointly liable for the obligations under this Agreement.

Article 3 Assets Purchase Option

1. Definition

"Assets" refers to all assets of Party C, including but not limited to fixed assets, existing assets, intellectual property rights and interests under all the agreements signed by Party C. The aforementioned intellectual property rights include patents, patent application rights, trademark rights, trademark application rights, trade names, copyrights, trade secrets, inventions, technical secrets, designs, slogans, symbols, website design, layout design, and domain names that Party C creates, owns, or is entitled to in the present and in the future.

2. Grant of Rights

To the extent permitted by the PRC laws, Party B and Party C hereby irrevocably grant Party A an exclusive right, that is, Party A follows the exercise steps at its own discretion and in accordance with the provisions of Article 3 paragraph 4 of this Agreement, purchase, or the Designated Person purchase, all or part of the assets held by Party C from Party C at

any time ("**Assets Purchase Option**"). Party B unanimously agrees that Party C shall grant Party A the Assets Purchase Option.

3. Exercise Steps

(a) Party A’s exercise of its Assets Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Assets Purchase Option, it shall send a written notice to Party B (the “**Assets Purchase Notice**”), and the Assets Purchase Notice shall specify the following matters:

(i) Party A's decision on exercising the Assets Purchase Option;

(ii) The assets that Party A intends to purchase from Party B (the "**Purchased Assets**");

(iii) Purchase date.

(b) After the Assets Purchase Notice sent, every time Party A exercises the Assets Purchase Right, Party C shall guarantee to perform the following matters, and Party B shall guarantee to urge Party C to perform the following matters:

(i) Enter into an assets transfer agreement with respect to the Purchased Assets in accordance with this Agreement and each Assets Purchase Notice; and

(ii) Shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all required actions to transfer the valid title to the Purchased Assets to Party A and/or the Designated Person without any security interest attached, and complete the registration and filing procedures required for the transfer of intellectual property rights in accordance with relevant PRC laws and regulations, so that Party A and/or the Designated Person can become the registered owners of the Purchased Assets.

4. Assets Purchase Price

Unless otherwise provided by laws, the purchase price of the Purchased Assets (the "**Assets Purchase Price**") shall be RMB 100 or the maximum

price permitted under the PRC laws and regulations. If Party A and Party B reach another agreement, then such agreement will prevail. Party C shall bear all taxes and fees arising from the transfer of the Purchased Assets.

Article 4 Representations and Warranties of Party B and Party C

Party B and Party C hereby respectively represents and warrants to Party A on the date hereof and on each transfer date as follows:

1. It has the ability to enter into and deliver this Agreement and any shares transfer agreement to which it is a party and execute for each transfer of the Purchased Shares pursuant to this Agreement (respectively referred to as "**Transfer Agreement**"), and the powers and rights to perform its obligations under this Agreement and any Transfer Agreement. This Agreement and each Transfer Agreement signed by it as a party shall constitute its legal, valid and binding obligations from the date of execution and can be enforced in accordance with the terms of this Agreement or each Transfer Agreement;

2. Neither the execution and delivery of this Agreement or any Trasnfer Agreement nor the performance of its obligations under this Agreement or any Transfer Agreement will:

   (a) result in a violation of any relevant PRC laws;

   (b) conflict with Party C's articles of association or other organizational documents;

   (c) cause or constitute a breach of any agreement or document to which it is a party or binding to it;

   (d) cause a breach of any condition of the grant and/or continuation of any license or approval issued to it; or

   (e) cause any license or approval issued to it to be suspended or revoked or subject to additional conditions.

3. Party B has the legal ownership of the shares it holds. Party B does not have any security interest in the abovesaid shares, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

4. Party C does not have any outstanding debts, except in the following cases:

(a) debts incurred in the ordinary course of its business, and

(b) debts disclosed to Party A and agreed in writing by Party A.

5. Party C complies with all applicable laws and regulations;

6. There are currently no ongoing, pending or potential litigation, arbitration or administrative proceedings in relation to Party C's equity, Party C's assets, or Party C.

Article 5 Effective Date and Term

This Agreement takes effect on the date of signing this Agreement. The term of this Agreement is ten (10) years, and it could be extended for another ten (10) years at Party A's sole discretion.

Article 6 Governing Law and Dispute Resolution

1. Governing Law

The execution, validity, interpretation and performance of this Agreement, as well as the settlement of disputes under this Agreement, shall be governed by the PRC laws.

2. Dispute Resolution

Any disputes arising from the interpretation and performance of this Agreement shall be settled by the parties to this Agreement first through friendly negotiation. If the dispute remains unresolved within thirty (30) days after one party has given a written notice to the other party requesting a negotiation, either party may submit the dispute to the China International Economic and Trade Arbitration Commission, and the dispute shall be settled by arbitration in accordance with its then-effective arbitration rules. The place of arbitration shall be Beijing. The arbitral award is final and binding on the parties.

Article 7 Taxes and Fees

Each party shall be responsible for any and all taxes and fees incurred by or levied on the party in accordance with the laws of PRC in connection with the preparation and execution of this Agreement and each Transfer Agreement and the completion of the transactions contemplated by this Agreement and each

Transfer Agreement.

Article 8 Notification

Notices under this Agreement shall be delivered by personal delivery or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in written within two (2) days from such change. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending off shall be the date of delivery:

Article 9 Confidentiality

1. The parties acknowledge and confirm that any oral or written information exchanged with each other in relation to this Agreement is confidential. Each party shall keep all such information confidential and shall not disclose any such information to any third party without the written consent of the other party, except in the following cases:

   (a) the information is or will be known to the public (but is not or will not be disclosed to the public by the party receiving the information without authorization);

   (b) information required to be disclosed by applicable laws or regulations; or

   (c) information disclosed by either party to its legal or financial advisor in connection with the transaction described in this Agreement and such legal or financial advisor shall also be subject to an obligation of confidentiality similar to this Article.

2. If any party's staff or agency leaks the information, it will be regarded as the leakage by such party, and it shall be liable for breach of this Agreement in accordance with this Agreement. Regardless of the termination of this Agreement for any reason, this Article shall remain in effect.

Article 10 Further Assurance

The parties agree to promptly execute the documents which are reasonably necessary for or beneficial to carry out the provisions and purposes of this Agreement, and to take further actions reasonably necessary or beneficial to carry out the provisions and purposes of this Agreement.

Article 11 Termination of Agreement, Liability for Breach of Agreement and Indemnification

1. If either party to this Agreement breaches the obligations stipulated in this Agreement ("**Breaching Party**"), the other party ("**Non-breaching Party**") may send a written notice to the Breaching Party requesting the Breaching Party to correct its breach of Agreement. The Breaching Party shall cease its breach of Agreement within thirty (30) days from the date of receipt of the above notice, and indemnify the Non-breaching Party for all losses thus incurred; if the Breaching Party continues to breach its obligations after receipt of the above notice within thirty (30) days, any Non-breaching Party has the right to unilaterally terminate this Agreement, and at the same time has the right to request the Breaching Party to indemnify the Non-breaching Party for all losses suffered thereto.

2. Any relieve, grace or delay of exercising its rights provided by the laws or provisions of this Agreement given by the Non-breaching Party to any breach of the Agreement by the Non-breaching Party shall not be deemed a waiver of its rights by the Non-breaching Party.

3. For any disputes or lawsuits brought by a third party over the Purchased Shares due to Party B or Party C's breach of any statutory or contractual warranties, representations or other terms under this Agreement or before the transfer of the Purchased Shares, and cause Party A, its officers, managers, directors, shareholders, members, representatives, agents and employees (“**Indemnified Persons**”) to suffer any and all claims, damages, liabilities, expenses and fees, including but not limited to reasonable attorneys' fees, in any actions or legal proceedings between the indemnifying person and the Indemnified Person, or between the Indemnified Person and any third parties, both Party B and Party C shall indemnify, defend and hold harmless Party A, unless such liability arises from the willful misconduct or gross negligent by the Indemnified Person.

Article 12 Miscellaneous

1. Acting in Concert of Party A

   Each right of Party A under this Agreement, shall be enjoyed and exercised together by Blue Buck Network and Blue Ocean Whale Riding, meaning that if Blue Buck Network or Blue Ocean Whale Riding desires to exercise Party A’s rights, they shall negotiate and reach a consensus to exercise together, and any party shall not exercise Party A’s rights alone under this

Agreement.

2. Modifications, Amendments and Supplements

Modifications, amendments and supplements to this Agreement must be in writing and become effective after being duly signed and sealed by all the parties.

3. Compliance with Laws and Regulations

Each party shall comply with and shall ensure that each party operates in full compliance with all the laws and regulations officially promulgated by and publicly available in the PRC.

4. Entire Agreement

Except for any written amendments, supplements or modifications made after the signing of this Agreement, this Agreement constitutes the entire agreement between the parties to this Agreement with respect to the subject matter of this Agreement and supersedes all prior oral agreements with respect to the subject matter of this Agreement, or written negotiations, representations and agreements.

5. Headings

The headings of this Agreement are for convenience only and should not be used to interpret, illustrate or otherwise affect the meaning of the provisions of this Agreement.

6. Language

This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

7. Severability

If any one or more provisions of this Agreement are ruled to be invalid, illegal or unenforceable in any respect under any laws or regulations, the validity, legality or enforceability of the other provisions of this Agreement shall not be affected or damaged in any way. The parties shall negotiate in good faith to seek to replace those invalid, illegal or unenforceable provisions with effective provisions, and the economic effects of such

effective provisions shall be as similar as possible to those invalid, illegal or unenforceable provisions.

8. Successor

This Agreement shall be binding on each party's respective successors and assignees permitted by each party.

9. Continuation

(a) Any obligations arising out of or becoming due of this Agreement prior to the expiry or early termination of this Agreement shall survive after the expiry or early termination of this Agreement.

(b) The terms of Articles 6, 9, 11 and paragraph 8 of Article 12 of this Agreement shall continue to be effective after the termination of this Agreement.

10. Waiver

Either party may waive the terms and conditions of this Agreement, but it must be in writing and signed by all parties to become effective. A waiver by a party with respect to a breach by other party in certain instance shall not be deemed to be a waiver by such party of a similar breach by other party in other instances.

[No text below]

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Blue Buck Network Technology (Beijing) Co., Ltd. (seal)

/seal/ Blue Buck Network Technology (Beijing) Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Zhou Yuan

/s/ Zhou Yuan

Beijing Cengcengceng Information Technology Co., Ltd. (seal)

/seal/ Beijing Cengcengceng Information Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Signature Page to the Exclusive Option Agreement

Exhibit 4.104

English translation

This **Equity Interest Pledge Agreement** (the "**Agreement**") is signed by the following parties on February 18, 2022:

A **Blue Buck Network Technology (Beijing) Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 418, 4th Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Blue Buck Network**");

B **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Blue Ocean Whale Riding",** together with Blue Buck Network, referred to as the "**Pledgee**")

C **Zhou Yuan**, a citizen of the People's Republic of China, with its identity number *** (hereinafter referred to as the "**Pledgor**" or "**Party B**");

D **Beijing Cengcengceng Information Technology Co., Ltd.,** a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 302, 3rd Floor, Building 13 Taiyang Yuan, Dazhongsi East Road, Haidian District, Beijing (hereinafter referred to as "**Cengceng Information**" or "**Party C**").

In this Agreement, the Pledgee, the Pledgor and Cengceng Information are collectively referred to as the "**Parties**", and each is referred to as a "**Party**".

Recitals:

1 Party B owns a total of 100 % equity of shares of Party C.

2 The Pledgee and Cengceng Information signed an exclusive technology development, consulting and service agreement on February 18, 2022 (the "**Service Agreement**").

3 To ensure that the Pledgee can properly receive technology development and consulting service fees from Cengceng Information in accordance with the Service Agreement, the pledger provides a pledge for the technology development and consulting service fees under the Service Agreement with all of its equity of shares in Cengceng Information.

After friendly negotiation, all parties reached an agreement on the equity interest pledge matter. To clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Definition and Interpretation

Unless otherwise specified in this Agreement, the following terms shall have the meanings:

1. Pledge: means all the contents as set forth in Article 2 of this Agreement.
2. Pledged Shares: means all the shares legally held by the Pledgor of Cengceng Information, in the aggregate of 100% shares of Cengceng Information.
3. Pledge Period: means the period specified in Article 3 of this Agreement.
4. Event of Default: means any circumstance as set forth in Article 7 of this Agreement.
5. Notice of Default: means the notice of Event of Default sent by the Pledgee in accordance with this Agreement.

Article 2 Pledge

1. The Pledgor pledges all of the shares held by it in Cengceng Information to the Pledgee (specifically, 50% of the shares of Cengceng Infromation held by the Pledgor are pledged to Blue Buck Network, and the remaining 50% of the shares of Cengceng Infromation are pledged to Blue Ocean Whale Riding), as a guarantee to the receipt of technology development, consulting service fees by the Pledgee under the Service Agreement.
2. The Pledge means the right of the Pledgee to be paid preferentially with the proceeds from auction or sale of the shares pledged to the Pledgee.

Article 3 Pledge Period

1. This Agreement takes effect from the date of signing. The Pledge under this Agreement is effective from the date of completion of shares pledge registration of the shares recorded on the register of shareholders of Cengceng Information with relevant market supervision and administrative department, and the validity period of the Pledge is the same as that of the Service Agreement.
2. During the Pledge Period, if Cengceng Information fails to pay the technical development and consulting service fees as stipulated in the Service Agreement,

the Pledgee has the right to dispose of the pledge in accordance with the provisions of this Agreement and relevant PRC laws and regulations.

3. For avoidance of doubt, as for the exercise of the Pledge by the Pledgee, it shall be exercised together by Blue Buck Network and the Blue Ocean Whale Riding after they reach an agreement.

Article 4 Keeping of Pledge Certificate

1. During the Pledge Period stipulated in this Agreement, Cengceng Information shall and the Pledgor shall sign or procure Cengceng Information to sign the certificate of capital contribution and the register of shareholders as exhibits to this Agreement, and deliver the above duly signed documents to the Pledgee, and the Pledgee shall keep the above documents within the Pledge Period stipulated in this Agreement.

2. The Pledgee has the right to receive all cash income such as dividends and distributions and all non-cash income generated from the Pledged Shares since the execution of this Agreement.

Article 5 Representations and Warranties of the Pledgor and Cengceng Information

The Pledgor and Cengceng Information hereby severally warrants to the Pledgee:

1. The Pledgor has full power and authority to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

2. Cengceng Information has full corporate power and authorization to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

3. The signing, delivery and performance of this Agreement and any related agreements by the Pledgor and Cengceng Information will not violate the followings due to the limitation of time and/or the occurrence of any act or event or any other reason:

   (a) any incorporation documents of the Pledgor and Cengceng Information;

   (b) any laws to which the Pledgor and Cengceng Information are subject; or

(c) any terms stipulated and obligations assumed in any written or oral documents such as any contracts, agreements, memorandums, etc. that have been signed and entered into force by the Pledgor and Cengceng Information.

4. The Pledgor is the legal owner of the Pledged Shares.

5. At any time, once the Pledgee exercises the rights of the Pledgee under this Agreement, there should be no interference from any other party.

6. The Pledgee has the right to dispose of and transfer the pledge in the manner specified in this Agreement.

7. Except for the Pledge set to the Pledgee in accordance with this Agreement, the Pledgor has not set any other pledge rights or any third-party rights on the shares.

Article 6 Covenants of the Pledgor

1. During the term of this Agreement, the Pledgor undertakes to the Pledgee that the Pledgor:

(a) except for the transfer of the shares to the Pledgee or persons designated by the Pledgee according to the Exclusive Option Agreement signed by the Pledgor, the Pledgee and Cengceng Information on February 18, 2022, without the prior written consent of the Pledgee, shall not transfer the shares directly or indirectly in any forms, and shall not establish or allow any existence of any pledge or other forms of security that may affect the rights and interests of the Pledgee;

(b) shall comply with and implement all laws and regulations related to pledge of rights, and upon receipt of notices, instructions or suggestions from relevant competent authorities on the Pledge, shall provide the above notices, instructions or suggestions to the Pledgee within five (5) days, and shall comply with the above notices, instructions or recommendations, or make objections and representations on the above matters at the reasonable request of the Pledgee or with the consent of the Pledgee;

(c) shall notify the Pledgee of any event or notice received that may cause an impact on the rights of the Pledgor's shares or any part of the rights thereof, and any event or notice received that may alter any warranties or obligations of the Pledgor under this Agreement, or may affect any performance of obligations under this Agreement by the Pledgor.

2. The Pledgor agrees that the exercise of the Pledgee's rights to the Pledge by the Pledgee in accordance with the terms of this Agreement shall not be interrupted or impaired by any legal proceeding taken by the Pledgor, the Pledgor's successors, spouse (if applicable), the Pledgor's principal or any other person.

3. The Pledgor warrants to the Pledgee that, in order to protect or improve the guarantee of this Agreement to the reimbursement of the technical development and consulting service fees under the Service Agreement, the Pledgor will duly sign, and procure other interested parties to sign, all the rights certificates, deeds, and/or will perform and procure other interested parties to perform actions required by the Pledgee, and will facilitate the exercise of the rights and authorizations granted to the Pledgee by this Agreement, and will sign all the change documents related to the share certificate with the Pledgee or its designated person (natural person/legal entity), and provide the Pledgee with all the notices, orders and decisions related to the Pledge that the Pledgee deems necessary within a reasonable period.

4. The Pledgor warrants to the Pledgee that, for the benefit of the Pledgee, the Pledgor will abide by and perform all warranties, covenants, agreements, representations and conditions. If the Pledgor fails to perform or does not fully perform its warranties, covenants, agreements, representations and conditions, the Pledgor shall compensate the Pledgee for all losses suffered thereby.

5. The Pledgor warrants to the Pledgee that on the date hereof, the Pledgor and Cengceng Information shall register the Pledge under this Agreement in the register of shareholders of Cengceng Information; and within forty-five (45) business days from the date hereof, the Pledgor shall, and the Pledgor shall procure Cengceng Information to, complete the registration of equity interest pledge at the corresponding market supervision and administration bureau.

Article 7 Event of Default

1. The following events are considered as Event of Default:

   (a) Cengceng Information fails to pay the technical development and consulting service fees payable under the Service Agreement in full and on time;

   (b) Any representations or warranties made by the Pledgor and Cengceng Information in Article 5 of this Agreement are materially misleading or mistaken, and/or the Pledgor and Cengceng Information breach the representations and warranties of Article 5 of this Agreement;

   (c) The Pledgor breaches the covenants in Article 6 of this Agreement;

(d) The Pledgor breaches any terms of this Agreement;

(e) Except as stipulated in Article 6, paragraph 1 (a) of this Agreement, the Pledgor loses the pledged shares for any reason, or transfers the pledged shares without the written consent of the Pledgee;

(f) Any external loan, guarantee, indemnification, covenants or other debts repayment obligation of the Pledgor itself (1) is required to be repaid or performed in advance due to breach of agreement; or (2) has expired but cannot be repaid or performed on time, causing the Pledgee to believe that the Pledgor's ability to perform its obligations under this Agreement has been affected;

(g) The Pledgor cannot repay general debts or other debts, so that the Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected;

(h) Due to the promulgation of relevant laws, this Agreement is illegal or the Pledgor cannot continue to perform its obligations under this Agreement;

(i) If all governmental consents, permits, approvals or authorizations necessary to enforce this Agreement or to make it legal or effective are withdrawn, suspended, voided or substantially modified;

(j) The Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected due to adverse changes in the financial assets owned by the Pledgor;

(k) The successors or custodians of Cengceng Information can only partially or refuse to perform the payment obligations under the Service Agreement;

(l) Other situations where the Pledgee cannot exercise or dispose of the Pledge according to relevant laws.

2. The Pledgor shall immediately notify the Pledgee in writing if it becomes aware of or discovers that any matter referred to in paragraph 1 of this Article or an event that may give rise to the above matter has occurred. The Pledgee has the right to require the Pledgor to correct the breach of Agreement within a limited period.

3. Unless the Event of Default listed in paragraph 1 of this Article has been perfectly resolved to the satisfaction of the Pledgee, the Pledgee may, at the time of or at any time after the occurrence of the Event of Default by the Pledgor, send a notice of

default to the Pledgor in writing form, requiring the Pledgor to immediately pay all the arrears and other payables under the Service Agreement or dispose of the Pledge in accordance with the provisions of Article 8 of this Agreement.

Article 8 Exercise of Pledge

1. Before the full payment of technical development and consulting service fees mentioned in the Service Agreement, without the written consent of the Pledgee,

   (a) The Pledgor shall not transfer the equity of Cengceng Information held by it for any reason or by any means;

   (b) Shall not transfer or assign the Pledge.

2. The Pledgee shall issue a notice of default to the Pledgor when exercising the Pledge.

3. Subject to the provisions of paragraph 3 of Article 7, the Pledgee may exercise the right to dispose of the Pledge at the same time as the notice of default is issued in accordance with paragraph 3 of Article 7 or at any time after the notice of default is issued.

4. The Pledgee has the right to discount all or part of the equity under this Agreement in accordance with legal procedures, or to receive priority compensation from the price of auction or sale of the equity, until the unpaid technology development, consulting service fees and all other payables have been paid off.

5. When the Pledgee disposes of the Pledge in accordance with this Agreement, the Pledgor shall not set up obstacles and shall provide necessary assistance to enable the Pledgee to realize its Pledge.

Article 9 Assignment

1. The Pledgor has no right to gift or transfer its rights and obligations under this Agreement unless the Pledgee consents in advance.

2. This Agreement is binding on the Pledgor and its successors and is effective on the Pledgor and each of its successors and assigns.

3. The Pledgee may at any time assign all or any of its rights and obligations under the Service Agreement to the person designated by it (natural person/legal entity), in which case the assignee shall enjoy and undertake the rights and obligations under this Agreement as those they should have enjoyed and undertaken as a party

to this Agreement. When the Pledgee assigns the rights and obligations under the Service Agreement, at the request of the Pledgee, the Pledgor shall sign relevant agreements and/or documents regarding such assignment.

4. After the change of the Pledgee due to assignment, the new parties of the Pledge shall enter into a new pledge agreement.

Article 10 Termination

This Agreement shall be terminated after the technology development, consulting and service fees under the Service Agreement have been paid and Cengceng Information no longer undertakes any obligations under the Service Agreement. The Pledgee shall, within a reasonable and practicable time, terminate this Agreement and assist the Pledgor to cancel the registration of the equity interest pledge.

Article 11 Fees

1. All fees and actual expenses related to this Agreement, including but not limited to legal fees, cost of production, stamp duty and any other taxes, fees, etc. shall be borne by Cengceng Information. If the laws stipulate that the Pledgee shall pay the relevant taxes, Cengceng Information shall fully compensate the Pledgee for the taxes and fees paid by the Pledgee.

2. If Cengceng Information fails to pay any taxes or fees payable by it in accordance with the provisions of this Agreement, or for other reasons, making the Pledgee takes any methods or means to be indemnified, Cengceng Information shall bear all expenses (including but not limited to various taxes, handling fees, management fees, litigation fees, attorney fees and various insurance fees for handling the Pledge) arising therefrom.

Article 12 Acting in Concert of Party A

Each right of Party A under this Agreement, shall be enjoyed and exercised together by Blue Buck Network and Blue Ocean Whale Riding, meaning that if Blue Buck Network or Blue Ocean Whale Riding desires to exercise Party A’s rights, they shall negotiate and reach a consensus to exercise together, and any party shall not exercise Party A’s rights alone under this Agreement.

Article 13 Force Majeure

1. When the performance of this Agreement is delayed or hindered by any Force Majeure Event, the party affected by the force majeure shall not bear any

responsibility under this Agreement only for this part of the delayed or hindered performance.

2. "Force Majeure Event" means any event beyond the reasonable control of a party and unavoidable with the reasonable care of the affected party, including, but not limited to, government action, natural forces, fire, explosion, geographical change, storm, flood, earthquake, tide, lightning or war. However, lack of credit, funds or financing shall not be deemed to be an event beyond the reasonable control of a party.

3. One party affected by a Force Majeure Event seeking to waive its responsibility of performance under this Agreement or any provision of this Agreement shall notify the other party of such waiver as soon as possible and inform it of the steps to be taken to complete the performance.

4. The party affected by force majeure shall not be liable for failure to perform its obligations under this Agreement, but the affected party shall try its best to reduce the losses caused to the other party, and the unfulfilled obligations are only limited to those unfulfilled due to force majeure. After the Force Majeure Event ends, the parties agree to use their best efforts to resume the performance of their obligations under this Agreement.

Article 14 Disputes Resolution

1. This Agreement shall be governed by and construed in accordance with the PRC laws.

2. In the event of a dispute between the parties to this Agreement regarding the interpretation and performance of the terms under this Agreement, the parties shall resolve the dispute through negotiation in good faith. If within thirty (30) days after one party has given the other party a written notice requesting a negotiated settlement, the parties have not reached an agreement to resolve the dispute, either party may refer the dispute to the China International Economic and Trade Arbitration Commission in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on the parties.

Article 15 Notification

Notices under this Agreement shall be delivered by hand or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in written within two (2) days from such change. If the notice is sent by registered

mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending the notice shall be the date of delivery.

Article 16 Appendix

The annexes listed in this Agreement are an integral part of this Agreement.

Article 17 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 18 Effectiveness

1. This Agreement and any amendments, supplements or revisions must be in writing and become effective after being signed and/or sealed by all parties.

2. This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

[No text below]

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Blue Buck Network Technology (Beijing) Co., Ltd. (seal)

/seal/ Blue Buck Network Technology (Beijing) Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Zhou Yuan

/s/ Zhou Yuan

Beijing Cengcengceng Information Technology Co., Ltd. (seal)

/seal/ Beijing Cengcengceng Information Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Exhibit 4.105

English translation

Power of Attorney

I, Zhou Yuan, a citizen of the People's Republic of China, with the identity number is: ***, holding the 100% of the equity shares (the "**Personal Shares**") of Beijing Cengcengceng Information Technology Co., Ltd. (the "**Cengceng Information**"), on February 18, 2022, with respect to the Personal Shares hereby irrevocably authorizes Blue Buck Network Technology (Beijing) Co., Ltd. and Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (collectively the "**WFOE**") to exercise the following rights during the term of this Power of Attorney:

Authorize WFOE together to act as the sole and exclusive agent of me, to exercise rights including but not limited to the following rights in the name of me on the matters of the Personal Shares: (1) participate in the shareholders' meeting of Cengceng Information and sign the relevant resolutions of the shareholders' meeting representing me; (2) exercise all the shareholder's rights entitled to me in accordance with the law and the articles of association of Cengceng Information, including but not limited to shareholder voting rights, rights of sale or transfer or pledge or disposition of all or any part of the Personal Shares; and (3) to elect, designate and appoint the legal representative, chairman, director, supervisor, general manager and other senior management personnel of Cengceng Information as the authorized representative of me.

WFOE will have the right to sign the transfer contract as stipulated in the exclusive option agreement (I being a party to the contract upon request) on behalf of me within the scope of authorization, and shall perform as scheduled the equity pledge agreement and the exclusive option agreement which are signed on the same day as this power of attorney signed by me as a party to, the exercise of which will not limit this authorization in any way.

Unless otherwise provided in this Power of Attorney, WFOE has the right to transfer, use or otherwise dispose of cash dividends and other non-cash income generated from the Personal Shares, according to oral or written instructions from me.

Unless otherwise provided in this Power of Attorney, all actions of WFOE with respect to the Personal Shares can be made according to WFOE's own discretion without any oral or written instructions from me.

All actions of WFOE with respect to the Personal Shares are regarded as the actions of me, and all documents signed are deemed to be signed by me, which will be ratified by me.

WFOE has the right to delegate, which it can delegate to other individuals or units to handle the above matters and exercise the Personal Shares without having to notify me in advance or obtain my consent.

During the period when I am a shareholder of Cengceng Information, this power of attorney is irrevocable and continues to be valid, starting from the date of signing this power of attorney.

During the term of this power of attorney, I hereby waive all rights related to the Personal Shares that have been authorized to WFOE through this power of attorney, and will no longer exercise such rights by myself.

[No text below]

[The following is the signature page]

Principal:

Zhou Yuan

/s/ Zhou Yuan

Exhibit 4.106

English translation

This **Exclusive Technology Development, Consulting and Service Agreement** (the "**Agreement**") is signed by the following parties on April 15, 2021:

A **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Party A**");

B **Guangzhou Blue Whale Weaving Garment Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 202, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Party B**").

In this Agreement, Party A and Party B are collectively referred to as the "Parties" and each is referred to as a "Party".

Recitals:

1. Party A is a wholly foreign-owned enterprise established in the People's Republic of China (the "**PRC**") with resources and qualifications for technology development, consulting and services;

2. Party A agrees to provide Party B with technical development, consulting and related services, and Party B agrees to accept the technical development, consulting and related services provided by Party A.

After friendly negotiation, the parties reached a consensus on providing technical consultation and related services. To clarify the rights and obligations of the parties, the parties enter into this agreement for mutual compliance.

Article 1 Technology Development, Consulting and Services; Sole and Exclusive Rights

1. During the term of this Agreement, Party A agrees to collectively provide Party B with relevant technology development, consultation and services as Party B's technology development, consultation and service provider according to the conditions of this Agreement (see the attachment for details).

2. Party B agrees to accept the technical development, consultation and services provided by Party A. Party B further agrees that, unless with the prior written consent of Party A, during the term of this Agreement, Party B shall not accept the same or similar technology development, consultation and services provided by any third party for the above-mentioned business.

3. For all rights and interests arising from the performance of this Agreement, including but not limited to ownership, intellectual property rights such as copyrights, patent rights, technical secrets, trade secrets and others, whether developed by Party A or Party B based on Party A's original intellectual property rights, Party A shall be entitled to sole and exclusive rights.

Article 2 Calculation and Payment of Fees

1. The parties agree that Party B shall pay Party A the technical development, consulting and service fees (the "**Consulting Service Fees**") under this Agreement on a quarterly basis, and the Consulting Service Fees shall be determined by the parties according to the actual service content. In principle, the Consulting Service Fees shall be the balance of Party B's total income deducting all expenses, but the parties may negotiate to determine the specific amounts otherwise. Party B shall notify Party A within thirty (30) days at the end of each quarter, provide Party B's management statements and operating data for such quarter, including Party B's net income for such quarter.

2. The amount of the Consulting Service Fees shall be determined based on the following factors:

   (a) The difficulty of technology development and the complexity of consulting and management services;

   (b) The time required for Party A to provide such technical development, consulting and management services; and

   (c) The specific content and business value of technology development, consulting and management services.

3. The Consulting Service Fees shall be the amounts as approved by Party A and the board of directors of Party A’s overseas ultimate controlling parent company, Bluebuck Technology Limited (the "**Overseas Company**”), which shall include the consent from investor directors of the Overseas Company (“**Investor Director**”). Any adjustment and change of Consulting Service Fees shall be approved by Party A and the board of directors of the Overseas Company (which should include the consent of the Investor Director).

4. Within thirty (30) days following the end of each year, Party B shall provide Party A with the financial statements and all operating records, business contracts and financial information of the year. If Party A questions the financial materials provided by Party B, it may appoint a reputable independent accountant to audit the relevant material, and Party B shall cooperate.

Article 3 Representations and Warranties

1. Each of Party A hereby represents and warrants as follows:

   (a) Party A is a company legally established and validly existing in accordance with the PRC laws.

   (b) Party A signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

   (c) This Agreement once executed, will constitute legal, valid, binding and

enforceable obligations on Party A in accordance with the terms of this Agreement.

2. Party B hereby represents and warrants as follows:

   (a) Party B is a company legally established and validly existing in accordance with the PRC laws.

   (b) Party B signs and performs this agreement within its corporate power and business scope; it has taken necessary corporate actions and proper authorization and obtained the consent and approval of third parties and government departments, which does not violate limitations by laws and contracts which are binding or affecting it.

   (c) This Agreement once executed, will constitute legal, valid, binding and enforceable obligations on Party B in accordance with the terms of this Agreement.

Article 4 Confidentiality

1. The parties acknowledge that any oral or written information they exchange in connection with this Agreement is confidential (the "**Confidential Information**"). Each party shall keep all such Confidential Information confidential and shall not disclose any Confidential Information to any third party without the written consent of the other party, except in the following cases: (a) the public know or will know such Confidential Information (but not disclosed to the public by the recipient); (b) Confidential Information required to be disclosed by applicable law or the rules or regulations of any stock exchange; or (c) Confidential Information needs to be disclosed to their legal or financial advisors of any party in connection with the transactions under this Agreement, and such legal advisors or financial advisors are also bound by obligations of confidentiality similar to those in this section. Disclosure of any Confidential Information by staff or agencies employed by any Party shall be deemed to be disclosure of such Confidential Information by such Party, and such Party shall be liable for any breach of this Agreement.

2. The parties agree that this clause will continue to be effective regardless of whether this Agreement is modified, cancelled or terminated.

Article 5 Indemnification

Party B shall indemnify Party A in full for any loss, damage, obligation and/or expense as required by Party A resulting from any lawsuits, claims or other requests arising from or incurred by the content of technology development, consultation and services requested by Party B, and hold Party A harmless from any damage and losses caused by Party B’s behaviors or any third party’s claims for Party B’s behaviors, except for the aforementioned lawsuits, claims or other requests caused by Party A's willful conduct or gross negligence.

Article 6 Effectiveness and Term

1. This Agreement is signed on the date indicated at the beginning of the text and takes effect at the same time. Unless it is terminated pursuant to the clauses of this

Agreement or other agreements as executed by the parties, the term of this Agreement is ten (10) years.

2. The term will be automatically extended for another ten (10) years when the term is due. Notwithstanding the terms above, Party A is always entitled to terminate this Agreement at any time by sending written notice to Party B with thirty (30) days in advance. Party B has no right to terminate this Agreement.

Article 7 Termination

1. Termination on Expiry Date

   This Agreement shall be terminated on the expiry date unless renewed in accordance with the relevant provisions of this Agreement.

2. Early Termination

   During the term of this Agreement, this Agreement shall not be terminated in advance unless each of Party A becomes bankrupt or legally dissolved or terminated; If Party B goes bankrupt or is legally dissolved and terminated before the expiration date of this Agreement, this Agreement shall be automatically terminated. Notwithstanding the terms above, Party A always has the right to terminate this Agreement at any time by giving Party B a written notice thirty (30) days in advance.

3. Terms after Termination

   After the termination of this Agreement, the rights and obligations of the parties under Articles 4, 5 and 8 will continue to be effective.

Article 8 Disputes Resolution

In the event of a dispute between the parties regarding the interpretation and performance of the clauses under this Agreement, the parties shall negotiate and resolve the dispute in good faith. If within thirty (30) days after one party sending other parties a written notice requesting a negotiated settlement, the parties fails to reach an agreement to resolve the dispute, either party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on all the parties.

Article 9. Force Majeure

1. The "Force Majeure Event" means any event beyond the reasonable control of the party and which is unavoidable with the reasonable care of the affected party, including but not limited to, government actions, natural forces, fires, explosions, storms, floods, earthquakes, tides, lightning or war. However, lack of credit, funds or financing shall not be deemed to be a matter beyond the reasonable control of the party. A party that is affected by a Force Majeure Event and seeking to be exempted for liabilities from performance under this Agreement shall notify the other party of such Force Majeure Event as soon as possible, and inform the other party of the steps to be taken to complete the performance.

2. When the performance of this Agreement is delayed or hindered by force majeure as defined above, the party affected by the force majeure shall not bear any liabilities under this Agreement to the extent that it is delayed or hindered. The party affected by force majeure shall take appropriate measures to reduce or eliminate the effects of force majeure, and shall endeavor to resume the performance of obligations delayed or hindered by force majeure. Once the Force Majeure Event is eliminated, the parties agree to use their best efforts to resume the performance of this Agreement.

Article 10 Notification

Notices under this Agreement shall be delivered by personal delivery or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in writing within two (2) days from such change. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending off shall be the date of delivery.

Article 11 Assignment

Party B shall not assign its rights and/or obligations under this Agreement to any third party unless having obtained Party A's prior written consent.

Article 12 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 13 Amendments and Supplements to the Agreement

The parties shall make amendments and supplements to this Agreement in a form of written agreement. Amendments and supplements to this Agreement signed by all the parties are an integral part of this Agreement and have the same legal effect as this Agreement.

Article 14 Governing Law

This Agreement shall be governed by, enforced and construed in accordance with the PRC laws.

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Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Guangzhou Blue Whale Weaving Garment Co., Ltd. (seal)

/seal/ Guangzhou Blue Whale Weaving Garment Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Exhibit 4.107

English translation

This **Exclusive Option Agreement** (this "**Agreement**") is signed by the following parties on April 15, 2021:

A **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Party A**");

B **Zhou Yuan**, a citizen of the People's Republic of China, with its identity number ***;

C **Fu Wei**, a citizen of the People's Republic of China, with its identity number *** (together with Zhou Yuan, collectively referred to as "**Party B**");

D **Guangzhou Blue Whale Weaving Garment Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 202, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Party C**").

Party A, Party B and Party C are collectively referred to as "Parties" and each is referred to as a "Party" in this Agreement.

Recitals

1 Party B holds 100% of the equity shares of Party C.

2 Party A and Party C have signed an Exclusive Technology Development, Consulting and Service Agreement dated April 15, 2021 (the "**Exclusive Technology Development, Consulting and Service Agreement**") and a series of agreements.

3 Party A, Party B and Party C have signed an Equity Interest Pledge Agreement dated April 15, 2021 (the “**Equity Pledge Agreement**”).

After friendly negotiation, all parties reached a consensus on the exclusive option. In order to clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Purchase and Sale of Shares

1. Grant of Rights

(a) Party B hereby irrevocably grants an irrevocable exclusive option to Party A, as permitted under the laws of PRC, to purchase all or part of the shares of Party C held by Party B from Party B or one or more persons designated by Party B (the "**Designated Person**") at any time in accordance with the exercise steps at the discretion of Party A and at the price stated in paragraph 3 of Article 1 of this Agreement (the "**Shares Purchase Option**"). Except for Party A and the Designated Person, no third party shall have the Shares Purchase Option. Party C hereby agrees that Party B grants Party A the Shares Purchase Option.

(b) "Person" as used in this paragraph and this Agreement means any individual, company, joint venture, partnership, enterprise, trust or unincorporated organization.

2. Exercise Steps

Party A's exercise of its Shares Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Shares Purchase Option, it shall send a written notice to Party B (the "**Shares Purchase Notice**"), and the Shares Purchase Notice shall specify the following matters:

(a) Party A's decision on exercising the Shares Purchase Option;

(b) The number of shares that Party A intends to purchase from Party B (the "**Purchased Shares**");

(c) Purchase date/shares transfer date.

3. Shares Purchase Price

Unless the evaluation is required by law, the purchase price of the Purchased Shares (the "**Shares Purchase Price**") shall be RMB 100 or the lowest price permitted by PRC laws and regulations. If Party A and Party B reach another agreement, then such agreement will prevail.

4. Transfer of Purchased Shares

Each time Party A exercises the Shares Purchase Option,

(a) Party B shall instruct Party C to convene a shareholders' meeting in a timely manner, at which a resolution to approve the transfer of the

Purchased Shares by Party B to Party A and/or the Designated Person shall be passed;

(b) Party B shall enter into a share transfer agreement with Party A (or, where applicable, the Designated Person) in accordance with the provisions of this Agreement and the Shares Purchase Notice;

(c) Relevant parties shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all necessary actions to transfer valid title of the Purchased Shares, free of any Security Interest, to Party A and/or Designated Person and make Party A and/or Designated Person the registered owner of the Purchased Shares.

(d) For the purposes of this paragraph and this Agreement, "**Security Interest**" includes a security, mortgage, right or interest of a third party, any stock option, right of acquisition, right of first refusal, right of set-off, retention of title or other security arrangement, etc., but for the avoidance of doubt, excludes any security interest incurred under this Agreement and the Equity Pledge Agreement, namely that Party B pledges all of its shares in Party C to Party A according to the Equity Pledge Agreement, in order to ensure that Party C's performance of its obligations under the Exclusive Technology Development, Consulting and Service Agreement.

Article 2 Covenants Related to Shares

1. Party C hereby covenants that:

(a) Without the prior written consent of Party A or Bluebuck Technology Limited, the overseas ultimate controlling parent company of Party A (the "**Party A's Parent Company**"), shall not supplement, change or amend the articles of association of Party C in any form, increase or decrease its registered capital, or otherwise change its registered capital structure;

(b) To keep its existence, to conduct its business and deal with its affairs prudently and validly in accordance with good financial and commercial standards and practices;

(c) Without the prior written consent of Party A or Party A's Parent Company, shall not sell, transfer, mortgage or otherwise dispose of

any assets, business, income or other legal rights and interests of Party C at any time from the date of execution of this Agreement, or allow creation of any other security interest thereon;

(d) Without the prior written consent of Party A or Party A's Parent Company, no liabilities shall be incurred, inherited, guaranteed or allowed to exist, except for the following:

 (i) Indebtedness incurred in the normal or ordinary course of business and not by way of borrowing; and

 (ii) Debts that have been disclosed to Party A and have been approved by Party A in writing.

(e) Keep operating all businesses in the ordinary course of business, maintain the value of Party C's assets, and refrain from any actions/omissions that may affect its operating conditions and asset value;

(f) Without the prior written consent of Party A or Party A's Parent Company, no material agreement shall be executed or terminated beyond the scope of ordinary operations. The aforementioned material agreement refers to an agreement with an Agreement value exceeding RMB 50,000;

(g) Not to provide loans or credits to anyone without the prior written consent of Party A or Party A's Parent Company;

(h) At the request of Party A, provide Party A with all materials on Party C's operations and financial conditions;

(i) Party C purchases and maintains insurance from an insurance company accepted by Party A, and the amount and type of insurance maintained shall be the same as those usually insured by companies operating similar businesses and possessing similar properties or assets in the same region;

(j) Without the prior written consent of Party A or Party A's Parent Company, it shall not merge or combine with any person, or acquire or invest in any person;

(k) Immediately notify Party A of any litigation, arbitration or administrative proceedings that have occurred or may occur in relation to Party C's assets, business and income;

(l) To protect Party C's ownership of all its assets, sign all necessary or appropriate documents, take all necessary or appropriate actions and file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(m) Without the prior written consent of Party A or Party A’s Parent Company, dividends shall not be distributed to its shareholders in any form, but upon Party A's request, all distributable profits shall be distributed immediately to their respective shareholders; and

(n) At the request of Party A, appoint any person designated by Party A to serve as the director of Party C.

2. Party B covenants that:

(a) Without the prior written consent of Party A or Party A's Parent Company, not to sell, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, at any time from the date of this Agreement, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(b) Without the prior written consent of Party A or Party A's Parent Company, it shall not procure the meeting of shareholders of Party C to approve the sale, transfer, mortgage or otherwise dispose of any equity interest, or allow any other security interest to be placed thereon, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

(c) Without the prior written consent of Party A or Party A’s Parent Company, it shall not procure the meeting of shareholders of Party C to approve Party C’s merger or combination with, or acquisition of, or investment in, any person;

(d) promptly notify Party A of any litigation, arbitration or administrative proceeding that has occurred or may occur in relation to its equity;

(e) Procure the meeting of shareholders of Party C to vote and approve the transfer of the Purchased Shares specified in this Agreement;

(f) To maintain its ownership of the shares, execute all necessary or appropriate documents, actively take all necessary or appropriate actions and/or file all necessary or appropriate charges or defend all claims as necessary and appropriate;

(g) At the request of Party A, appoint any person designated by Party A as the director of Party C;

(h) Upon Party A's request at any time, it shall unconditionally and immediately transfer its shares to Party A or its designated representative at any time, and waive its right of first refusal to other shareholders in respect of the abovesaid shares transfer; and

(i) Strictly abide by the provisions of this Agreement and other agreements jointly or separately signed by Party A, Party A's Parent Company, Party B and Party C, perform all obligations under such agreements, and do not take any acts or omissions that may affect the validity and enforceability of such agreements.

3. Party B and Party C shall not revoke the abovesaid covenants. Party B and Party C shall be jointly liable for the obligations under this Agreement.

Article 3 Assets Purchase Option

1. Definition

"Assets" refers to all assets of Party C, including but not limited to fixed assets, existing assets, intellectual property rights and interests under all the agreements signed by Party C. The aforementioned intellectual property rights include patents, patent application rights, trademark rights, trademark application rights, trade names, copyrights, trade secrets, inventions, technical secrets, designs, slogans, symbols, website design, layout design, and domain names. that Party C creates, owns, or is entitled to in the present and in the future.

2. Grant of Rights

To the extent permitted by the PRC laws, Party B and Party C hereby irrevocably grant Party A an exclusive right, that is, Party A follows the exercise steps at its own discretion and in accordance with the provisions of Article 3 paragraph 4 of this Agreement, purchase, or the Designated Person purchase, all or part of the assets held by Party C from Party C at

any time ("**Assets Purchase Option**"). Party B unanimously agrees that Party C shall grant Party A the Assets Purchase Option.

3. Exercise Steps

(a) Party A's exercise of its Assets Purchase Option is premised on compliance with laws and regulations of PRC. When Party A exercises the Assets Purchase Option, it shall send a written notice to Party B (the "**Assets Purchase Notice**"), and the Assets Purchase Notice shall specify the following matters:

(i) Party A's decision on exercising the Assets Purchase Option;

(ii) The assets that Party A intends to purchase from Party B (the "**Purchased Assets**");

(iii) Purchase date.

(b) After the Assets Purchase Notice sent, every time Party A exercises the Assets Purchase Right, Party C shall guarantee to perform the following matters, and Party B shall guarantee to urge Party C to perform the following matters:

(i) Enter into an assets transfer agreement with respect to the Purchased Assets in accordance with this Agreement and each Assets Purchase Notice; and

(ii) Shall execute all other necessary contracts, agreements or documents, obtain all required government approvals and consents, and take all required actions to transfer the valid title to the Purchased Assets to Party A and/or the Designated Person without any security interest attached, and complete the registration and filing procedures required for the transfer of intellectual property rights in accordance with relevant PRC laws and regulations, so that Party A and/or the Designated Person can become the registered owners of the Purchased Assets.

4. Assets Purchase Price

Unless otherwise provided by laws, the purchase price of the Purchased Assets (the "**Assets Purchase Price**") shall be RMB 100 or the maximum

price permitted under the PRC laws and regulations. If Party A and Party B reach another agreement, then such agreement will prevail. Party C shall bear all taxes and fees arising from the transfer of the Purchased Assets.

Article 4 Representations and Warranties of Party B and Party C

Party B and Party C hereby respectively represents and warrants to Party A on the date hereof and on each transfer date as follows:

1. It has the ability to enter into and deliver this Agreement and any shares transfer agreement to which it is a party and execute for each transfer of the Purchased Shares pursuant to this Agreement (respectively referred to as "**Transfer Agreement**"), and the powers and rights to perform its obligations under this Agreement and any Transfer Agreement. This Agreement and each Transfer Agreement signed by it as a party shall constitute its legal, valid and binding obligations from the date of execution and can be enforced in accordance with the terms of this Agreement or each Transfer Agreement;

2. Neither the execution and delivery of this Agreement or any Trasnfer Agreement nor the performance of its obligations under this Agreement or any Transfer Agreement will:

   (a) result in a violation of any relevant PRC laws;

   (b) conflict with Party C's articles of association or other organizational documents;

   (c) cause or constitute a breach of any agreement or document to which it is a party or binding to it;

   (d) cause a breach of any condition of the grant and/or continuation of any license or approval issued to it; or

   (e) cause any license or approval issued to it to be suspended or revoked or subject to additional conditions.

3. Party B has the legal ownership of the shares it holds. Party B does not have any security interest in the abovesaid shares, except for the pledge on Party B's shares according to the Equity Pledge Agreement;

4. Party C does not have any outstanding debts, except in the following cases:

(a) debts incurred in the ordinary course of its business, and

(b) debts disclosed to Party A and agreed in writing by Party A.

5. Party C complies with all applicable laws and regulations;

6. There are currently no ongoing, pending or potential litigation, arbitration or administrative proceedings in relation to Party C's equity, Party C's assets, or Party C.

Article 5 Effective Date and Term

This Agreement takes effect on the date of signing this Agreement. The term of this Agreement is ten (10) years, and it will be automatically extended for another ten (10) years when the term is due. Notwithstanding the terms above, Party A is always entitled to terminate this Agreement at any time by sending written notice to Party B with thirty (30) days in advance. Party B has no right to terminate this Agreement.

Article 6 Governing Law and Dispute Resolution

1. Governing Law

   The execution, validity, interpretation and performance of this Agreement, as well as the settlement of disputes under this Agreement, shall be governed by the PRC laws.

2. Dispute Resolution

   Any disputes arising from the interpretation and performance of this Agreement shall be settled by the parties to this Agreement first through friendly negotiation. If the dispute remains unresolved within thirty (30) days after one party has given a written notice to the other party requesting a negotiation, either party may submit the dispute to the China International Economic and Trade Arbitration Commission, and the dispute shall be settled by arbitration in accordance with its then-effective arbitration rules. The place of arbitration shall be Beijing. The arbitral award is final and binding on the parties.

Article 7 Taxes and Fees

Each party shall be responsible for any and all taxes and fees incurred by or levied

on the party in accordance with the laws of PRC in connection with the preparation and execution of this Agreement and each Transfer Agreement and the completion of the transactions contemplated by this Agreement and each Transfer Agreement.

Article 8 Notification

Notices under this Agreement shall be delivered by personal delivery or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in written within two (2) days from such change. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending off shall be the date of delivery:

Article 9 Confidentiality

1. The parties acknowledge and confirm that any oral or written information exchanged with each other in relation to this Agreement is confidential. Each party shall keep all such information confidential and shall not disclose any such information to any third party without the written consent of the other party, except in the following cases:

   (a) the information is or will be known to the public (but is not or will not be disclosed to the public by the party receiving the information without authorization);

   (b) information required to be disclosed by applicable laws or regulations; or

   (c) information disclosed by either party to its legal or financial advisor in connection with the transaction described in this Agreement and such legal or financial advisor shall also be subject to an obligation of confidentiality similar to this Article.

2. If any party's staff or agency leaks the information, it will be regarded as the leakage by such party, and it shall be liable for breach of this Agreement in accordance with this Agreement. Regardless of the termination of this Agreement for any reason, this Article shall remain in effect.

Article 10 Further Assurance

The parties agree to promptly execute the documents which are reasonably

necessary for or beneficial to carry out the provisions and purposes of this Agreement, and to take further actions reasonably necessary or beneficial to carry out the provisions and purposes of this Agreement.

Article 11 Termination of Agreement, Liability for Breach of Agreement and Indemnification

1. If either party to this Agreement breaches the obligations stipulated in this Agreement ("**Breaching Party**"), the other party ("**Non-breaching Party**") may send a written notice to the Breaching Party requesting the Breaching Party to correct its breach of Agreement. The Breaching Party shall cease its breach of Agreement within thirty (30) days from the date of receipt of the above notice, and indemnify the Non-breaching Party for all losses thus incurred; if the Breaching Party continues to breach its obligations after receipt of the above notice within thirty (30) days, any Non-breaching Party has the right to unilaterally terminate this Agreement, and at the same time has the right to request the Breaching Party to indemnify the Non-breaching Party for all losses suffered thereto.

2. Any relieve, grace or delay of exercising its rights provided by the laws or provisions of this Agreement given by the Non-breaching Party to any breach of the Agreement by the Non-breaching Party shall not be deemed a waiver of its rights by the Non-breaching Party.

3. For any disputes or lawsuits brought by a third party over the Purchased Shares due to Party B or Party C's breach of any statutory or contractual warranties, representations or other terms under this Agreement or before the transfer of the Purchased Shares, and cause Party A, its officers, managers, directors, shareholders, members, representatives, agents and employees (“**Indemnified Persons**”) to suffer any and all claims, damages, liabilities, expenses and fees, including but not limited to reasonable attorneys' fees, in any actions or legal proceedings between the indemnifying person and the Indemnified Person, or between the Indemnified Person and any third parties, both Party B and Party C shall indemnify, defend and hold harmless Party A, unless such liability arises from the willful misconduct or gross negligent by the Indemnified Person.

Article 12 Miscellaneous

1. Modifications, Amendments and Supplements

Modifications, amendments and supplements to this Agreement must be in writing and become effective after being duly signed and sealed by all the parties.

2. Compliance with Laws and Regulations

Each party shall comply with and shall ensure that each party operates in full compliance with all the laws and regulations officially promulgated by and publicly available in the PRC.

3. Entire Agreement

Except for any written amendments, supplements or modifications made after the signing of this Agreement, this Agreement constitutes the entire agreement between the parties to this Agreement with respect to the subject matter of this Agreement and supersedes all prior oral agreements with respect to the subject matter of this Agreement, or written negotiations, representations and agreements.

4. Headings

The headings of this Agreement are for convenience only and should not be used to interpret, illustrate or otherwise affect the meaning of the provisions of this Agreement.

5. Language

This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

6. Severability

If any one or more provisions of this Agreement are ruled to be invalid, illegal or unenforceable in any respect under any laws or regulations, the validity, legality or enforceability of the other provisions of this Agreement shall not be affected or damaged in any way. The parties shall negotiate in good faith to seek to replace those invalid, illegal or unenforceable provisions with effective provisions, and the economic effects of such effective provisions shall be as similar as possible to those invalid, illegal or unenforceable provisions.

7. Successor

This Agreement shall be binding on each party's respective successors and assignees permitted by each party.

8. Continuation

(a) Any obligations arising out of or becoming due of this Agreement prior to the expiry or early termination of this Agreement shall survive after the expiry or early termination of this Agreement.

(b) The terms of Articles 6, 9, 11 and paragraph 8 of Article 12 of this Agreement shall continue to be effective after the termination of this Agreement.

9. Waiver

Either party may waive the terms and conditions of this Agreement, but it must be in writing and signed by all parties to become effective. A waiver by a party with respect to a breach by other party in certain instance shall not be deemed to be a waiver by such party of a similar breach by other party in other instances.

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Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Zhou Yuan

/s/ Zhou Yuan

Fu Wei

/s/ Fu Wei

Guangzhou Blue Whale Weaving Garment Co., Ltd. (seal)

/seal/ Guangzhou Blue Whale Weaving Garment Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Exhibit 4.108

English translation

This **Equity Interest Pledge Agreement** (the "**Agreement**") is signed by the following parties on April 15, 2021:

A **Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 201, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as the "**Pledgee**");

B **Zhou Yuan**, a citizen of the People's Republic of China, with its identity number ***;

C **Fu Wei**, a citizen of the People's Republic of China, with its identity number *** (together with Zhou Yuan, collectively referred to as the "**Pledgor**" or "**Party B**");

D **Guangzhou Blue Whale Weaving Garment Co., Ltd.**, a limited liability company legally established and existing under the laws of the People's Republic of China, with its registered address: Room 202, No. 57 Xiadu Street, Haizhu District, Guangzhou (hereinafter referred to as "**Blue Whale Weaving**" or "**Party C**").

In this Agreement, the Pledgee, the Pledgor and Blue Whale Weaving are collectively referred to as the "**Parties**", and each is referred to as a "**Party**".

Recitals:

1 Party B together owns a total of 100 % equity of shares of Party C.

2 The Pledgee and Blue Whale Weaving signed an exclusive technology development, consulting and service agreement on April 15, 2021 (the "**Service Agreement**").

3 To ensure that the Pledgee can properly receive technology development and consulting service fees from Blue Whale Weaving in accordance with the Service Agreement, the pledger provides a pledge for the technology development and consulting service fees under the Service Agreement with all of its equity of shares in Blue Whale Weaving.

After friendly negotiation, all parties reached an agreement on the equity interest pledge matter. To clarify the rights and obligations of all parties, this Agreement is concluded for mutual compliance.

Article 1 Definition and Interpretation

Unless otherwise specified in this Agreement, the following terms shall have the meanings:

1. Pledge: means all the contents as set forth in Article 2 of this Agreement.
2. Pledged Shares: means all the shares legally held by the Pledgor of Blue Whale Weaving, in the aggregate of 100% shares of Blue Whale Weaving.
3. Pledge Period: means the period specified in Article 3 of this Agreement.
4. Event of Default: means any circumstance as set forth in Article 7 of this Agreement.
5. Notice of Default: means the notice of Event of Default sent by the Pledgee in accordance with this Agreement.

Article 2 Pledge

1. The Pledgor pledges all of the shares held by it in Blue Whale Weaving to the Pledgee, as a guarantee to the receipt of technology development, consulting service fees by the Pledgee under the Service Agreement.
2. The Pledge means the right of the Pledgee to be paid preferentially with the proceeds from auction or sale of the shares pledged to the Pledgee.

Article 3 Pledge Period

1. This Agreement takes effect from the date of signing. The Pledge under this Agreement is effective from the date of record on the register of shareholders of Blue Whale Weaving, and the validity period of the Pledge is the same as that of the Service Agreement.
2. During the Pledge Period, if Blue Whale Weaving fails to pay the technical development and consulting service fees as stipulated in the Service Agreement, the Pledgee has the right to dispose of the pledge in accordance with the provisions of this Agreement and relevant PRC laws and regulations.

Article 4 Keeping of Pledge Certificate

1. During the Pledge Period stipulated in this Agreement, Blue Whale Weaving shall and the Pledgor shall sign or procure Blue Whale Weaving to sign the certificate of capital contribution and the register of shareholders as exhibits to this Agreement, and deliver the above duly signed documents to the Pledgee, and the Pledgee shall keep the above documents within the Pledge Period stipulated in this Agreement.
2. The Pledgee has the right to receive all cash income such as dividends and

distributions and all non-cash income generated from the Pledged Shares since the execution of this Agreement.

Article 5 Representations and Warranties of the Pledgor and Blue Whale Weaving

The Pledgor and Blue Whale Weaving hereby severally warrants to the Pledgee:

1. The Pledgor has full power and authority to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

2. Blue Whale Weaving has full corporate power and authorization to sign this Agreement and perform its obligations under this Agreement, and the terms of this Agreement constitute legal, valid and binding obligations to it.

3. The signing, delivery and performance of this Agreement and any related agreements by the Pledgor and Blue Whale Weaving will not violate the followings due to the limitation of time and/or the occurrence of any act or event or any other reason:

   (a) any incorporation documents of the Pledgor and Blue Whale Weaving;

   (b) any laws to which the Pledgor and Blue Whale Weaving are subject; or

   (c) any terms stipulated and obligations assumed in any written or oral documents such as any contracts, agreements, memorandums, etc. that have been signed and entered into force by the Pledgor and Blue Whale Weaving.

4. The Pledgor is the legal owner of the Pledged Shares.

5. At any time, once the Pledgee exercises the rights of the Pledgee under this Agreement, there should be no interference from any other party.

6. The Pledgee has the right to dispose of and transfer the pledge in the manner specified in this Agreement.

7. Except for the Pledge set to the Pledgee in accordance with this Agreement, the Pledgor has not set any other pledge rights or any third-party rights on the shares.

Article 6 Covenants of the Pledgor

1. During the term of this Agreement, the Pledgor undertakes to the Pledgee that the

Pledgor:

(a) except for the transfer of the shares to the Pledgee or persons designated by the Pledgee according to the Exclusive Option Agreement signed by the Pledgor, the Pledgee and Blue Whale Weaving on April 15, 2021, without the prior written consent of the Pledgee, shall not transfer the shares directly or indirectly in any forms, and shall not establish or allow any existence of any pledge or other forms of security that may affect the rights and interests of the Pledgee;

(b) shall comply with and implement all laws and regulations related to pledge of rights, and upon receipt of notices, instructions or suggestions from relevant competent authorities on the Pledge, shall provide the above notices, instructions or suggestions to the Pledgee within five (5) days, and shall comply with the above notices, instructions or recommendations, or make objections and representations on the above matters at the reasonable request of the Pledgee or with the consent of the Pledgee;

(c) shall notify the Pledgee of any event or notice received that may cause an impact on the rights of the Pledgor's shares or any part of the rights thereof, and any event or notice received that may alter any warranties or obligations of the Pledgor under this Agreement, or may affect any performance of obligations under this Agreement by the Pledgor.

2. The Pledgor agrees that the exercise of the Pledgee's rights to the Pledge by the Pledgee in accordance with the terms of this Agreement shall not be interrupted or impaired by any legal proceeding taken by the Pledgor, the Pledgor's successors, spouse (if applicable), the Pledgor's principal or any other person.

3. The Pledgor warrants to the Pledgee that, in order to protect or improve the guarantee of this Agreement to the reimbursement of the technical development and consulting service fees under the Service Agreement, the Pledgor will duly sign, and procure other interested parties to sign, all the rights certificates, deeds, and/or will perform and procure other interested parties to perform actions required by the Pledgee, and will facilitate the exercise of the rights and authorizations granted to the Pledgee by this Agreement, and will sign all the change documents related to the share certificate with the Pledgee or its designated person (natural person/legal entity), and provide the Pledgee with all the notices, orders and decisions related to the Pledge that the Pledgee deems necessary within a reasonable period.

4. The Pledgor warrants to the Pledgee that, for the benefit of the Pledgee, the Pledgor will abide by and perform all warranties, covenants, agreements, representations

and conditions. If the Pledgor fails to perform or does not fully perform its warranties, covenants, agreements, representations and conditions, the Pledgor shall compensate the Pledgee for all losses suffered thereby.

5. The Pledgor warrants to the Pledgee that on the date hereof, the Pledgor and Blue Whale Weaving shall register the Pledge under this Agreement in the register of shareholders of Blue Whale Weaving; and within one month from the date hereof, the Pledgor shall, and the Pledgor shall procure Blue Whale Weaving to, complete the registration of equity interest pledge at the Guangzhou Haizhu district market supervision and administration bureau.

Article 7 Event of Default

1. The following events are considered as Event of Default:

   (a) Blue Whale Weaving fails to pay the technical development and consulting service fees payable under the Service Agreement in full and on time;

   (b) Any representations or warranties made by the Pledgor and Blue Whale Weaving in Article 5 of this Agreement are materially misleading or mistaken, and/or the Pledgor and Blue Whale Weaving breach the representations and warranties of Article 5 of this Agreement;

   (c) The Pledgor breaches the covenants in Article 6 of this Agreement;

   (d) The Pledgor breaches any terms of this Agreement;

   (e) Except as stipulated in Article 6, paragraph 1 (a) of this Agreement, the Pledgor loses the pledged shares for any reason, or transfers the pledged shares without the written consent of the Pledgee;

   (f) Any external loan, guarantee, indemnification, covenants or other debts repayment obligation of the Pledgor itself (1) is required to be repaid or performed in advance due to breach of agreement; or (2) has expired but cannot be repaid or performed on time, causing the Pledgee to believe that the Pledgor's ability to perform its obligations under this Agreement has been affected;

   (g) The Pledgor cannot repay general debts or other debts, so that the Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected;

(h) Due to the promulgation of relevant laws, this Agreement is illegal or the Pledgor cannot continue to perform its obligations under this Agreement;

(i) If all governmental consents, permits, approvals or authorizations necessary to enforce this Agreement or to make it legal or effective are withdrawn, suspended, voided or substantially modified;

(j) The Pledgee believes that the Pledgor's ability to perform its obligations under this Agreement has been affected due to adverse changes in the financial assets owned by the Pledgor;

(k) The successors or custodians of Blue Whale Weaving can only partially or refuse to perform the payment obligations under the Service Agreement;

(l) Other situations where the Pledgee cannot exercise or dispose of the Pledge according to relevant laws.

2. The Pledgor shall immediately notify the Pledgee in writing if it becomes aware of or discovers that any matter referred to in paragraph 1 of this Article or an event that may give rise to the above matter has occurred. The Pledgee has the right to require the Pledgor to correct the breach of Agreement within a limited period.

3. Unless the Event of Default listed in paragraph 1 of this Article has been perfectly resolved to the satisfaction of the Pledgee, the Pledgee may, at the time of or at any time after the occurrence of the Event of Default by the Pledgor, send a notice of default to the Pledgor in writing form, requiring the Pledgor to immediately pay all the arrears and other payables under the Service Agreement or dispose of the Pledge in accordance with the provisions of Article 8 of this Agreement.

Article 8 Exercise of Pledge

1. Before the full payment of technical development and consulting service fees mentioned in the Service Agreement, without the written consent of the Pledgee,

   (a) The Pledgor shall not transfer the equity of Blue Whale Weaving held by it for any reason or by any means;

   (b) Shall not transfer or assign the Pledge.

2. The Pledgee shall issue a notice of default to the Pledgor when exercising the Pledge.

3. Subject to the provisions of paragraph 3 of Article 7, the Pledgee may exercise the

right to dispose of the Pledge at the same time as the notice of default is issued in accordance with paragraph 3 of Article 7 or at any time after the notice of default is issued.

4. The Pledgee has the right to discount all or part of the equity under this Agreement in accordance with legal procedures, or to receive priority compensation from the price of auction or sale of the equity, until the unpaid technology development, consulting service fees and all other payables have been paid off.

5. When the Pledgee disposes of the Pledge in accordance with this Agreement, the Pledgor shall not set up obstacles and shall provide necessary assistance to enable the Pledgee to realize its Pledge.

Article 9 Assignment

1. The Pledgor has no right to gift or transfer its rights and obligations under this Agreement unless the Pledgee consents in advance.

2. This Agreement is binding on the Pledgor and its successors and is effective on the Pledgor and each of its successors and assigns.

3. The Pledgee may at any time assign all or any of its rights and obligations under the Service Agreement to the person designated by it (natural person/legal entity), in which case the assignee shall enjoy and undertake the rights and obligations under this Agreement as those they should have enjoyed and undertaken as a party to this Agreement. When the Pledgee assigns the rights and obligations under the Service Agreement, at the request of the Pledgee, the Pledgor shall sign relevant agreements and/or documents regarding such assignment.

4. After the change of the Pledgee due to assignment, the new parties of the Pledge shall enter into a new pledge agreement.

Article 10 Termination

This Agreement shall be terminated after the technology development, consulting and service fees under the Service Agreement have been paid and Blue Whale Weaving no longer undertakes any obligations under the Service Agreement. The Pledgee shall, within a reasonable and practicable time, terminate this Agreement and assist the Pledgor to cancel the registration of the equity interest pledge.

Article 11 Fees

1. All fees and actual expenses related to this Agreement, including but not limited to legal fees, cost of production, stamp duty and any other taxes, fees, etc. shall be borne by Blue Whale Weaving. If the laws stipulate that the Pledgee shall pay the relevant taxes, Blue Whale Weaving shall fully compensate the Pledgee for the taxes and fees paid by the Pledgee.

2. If Blue Whale Weaving fails to pay any taxes or fees payable by it in accordance with the provisions of this Agreement, or for other reasons, making the Pledgee takes any methods or means to be indemnified, Blue Whale Weaving shall bear all expenses (including but not limited to various taxes, handling fees, management fees, litigation fees, attorney fees and various insurance fees for handling the Pledge) arising therefrom.

Article 12 Force Majeure

1. When the performance of this Agreement is delayed or hindered by any Force Majeure Event, the party affected by the force majeure shall not bear any responsibility under this Agreement only for this part of the delayed or hindered performance.

2. "Force Majeure Event" means any event beyond the reasonable control of a party and unavoidable with the reasonable care of the affected party, including, but not limited to, government action, natural forces, fire, explosion, geographical change, storm, flood, earthquake, tide, lightning or war. However, lack of credit, funds or financing shall not be deemed to be an event beyond the reasonable control of a party.

3. One party affected by a Force Majeure Event seeking to waive its responsibility of performance under this Agreement or any provision of this Agreement shall notify the other party of such waiver as soon as possible and inform it of the steps to be taken to complete the performance.

4. The party affected by force majeure shall not be liable for failure to perform its obligations under this Agreement, but the affected party shall try its best to reduce the losses caused to the other party, and the unfulfilled obligations are only limited to those unfulfilled due to force majeure. After the Force Majeure Event ends, the parties agree to use their best efforts to resume the performance of their obligations under this Agreement.

Article 13 Disputes Resolution

1. This Agreement shall be governed by and construed in accordance with the PRC

laws.

2. In the event of a dispute between the parties to this Agreement regarding the interpretation and performance of the terms under this Agreement, the parties shall resolve the dispute through negotiation in good faith. If within thirty (30) days after one party has given the other party a written notice requesting a negotiated settlement, the parties have not reached an agreement to resolve the dispute, either party may refer the dispute to the China International Economic and Trade Arbitration Commission in accordance with its then-effective arbitration rules. The place of arbitration is Beijing; the language of arbitration shall be Chinese. The arbitral award shall be final and binding on the parties.

Article 14 Notification

Notices under this Agreement shall be delivered by hand or by registered mail to the address provided by the Parties. If such address is changed, such Party shall notify other Parties in written within two (2) days from such change. If the notice is sent by registered mail, the date of receipt recorded on the return receipt of the registered mail shall be the date of delivery; if it is sent by personal delivery, the date of sending the notice shall be the date of delivery.

Article 15 Appendix

The annexes listed in this Agreement are an integral part of this Agreement.

Article 16 Severability

If any provision under this Agreement is invalid or unenforceable due to its inconsistency with relevant laws, such provision shall be invalid or unenforceable only within the relevant jurisdiction and shall not affect the legal validity of other provisions of this Agreement.

Article 17 Effectiveness

1. This Agreement and any amendments, supplements or revisions must be in writing and become effective after being signed and/or sealed by all parties.

2. This Agreement is written in Chinese. The original can be made into one or more copies as required, and each Agreement has the same legal effect.

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Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (seal)

/seal/ Guangzhou Blue Ocean Whale Riding Technology Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Zhou Yuan

/s/ Zhou Yuan

Fu Wei

/s/ Fu Wei

Guangzhou Blue Whale Weaving Garment Co., Ltd. (seal)

/seal/ Guangzhou Blue Whale Weaving Garment Co., Ltd.
/s/ Zhou Yuan
Name: Zhou Yuan
Title: Legal Representative

Exhibit 4.109

English translation

Power of Attorney

I, Fu Wei, a citizen of the People’s Republic of China, with the identity number is: ***, holding 5.00% of the equity shares (the "**Personal Shares**") of Guangzhou Blue Whale Weaving Garment Co., Ltd. (the "**Blue Whale Weaving**”), on April 15, 2021, with respect to the Personal Shares hereby irrevocably authorizes Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (the “**WFOE**”) to exercise the following rights during the term of this Power of Attorney:

Authorize WFOE together to act as the sole and exclusive agent of me, to exercise rights including but not limited to the following rights in the name of me on the matters of the Personal Shares: (1) participate in the shareholders' meeting of Blue Whale Weaving and sign the relevant resolutions of the shareholders' meeting representing me; (2) exercise all the shareholder's rights entitled to me in accordance with the law and the articles of association of Blue Whale Weaving, including but not limited to shareholder voting rights, rights of sale or transfer or pledge or disposition of all or any part of the Personal Shares; and (3) to elect, designate and appoint the legal representative, chairman, director, supervisor, general manager and other senior management personnel of Blue Whale Weaving as the authorized representative of me.

WFOE will have the right to sign the transfer contract as stipulated in the exclusive option agreement (I being a party to the contract upon request) on behalf of me within the scope of authorization, and shall perform as scheduled the equity pledge agreement and the exclusive option agreement which are signed on the same day as this power of attorney signed by me as a party to, the exercise of which will not limit this authorization in any way.

Unless otherwise provided in this Power of Attorney, WFOE has the right to transfer, use or otherwise dispose of cash dividends and other non-cash income generated from the Personal Shares, according to oral or written instructions from me.

Unless otherwise provided in this Power of Attorney, all actions of WFOE with respect to the Personal Shares can be made according to WFOE's own discretion without any oral or written instructions from me.

All actions of WFOE with respect to the Personal Shares are regarded as the actions of me, and all documents signed are deemed to be signed by me, which will be ratified by me.

WFOE has the right to delegate, which it can delegate to other individuals or units to handle the above matters and exercise the Personal Shares without having to notify me in advance or obtain my consent.

During the period when I am a shareholder of Blue Whale Weaving, this power of attorney is irrevocable and continues to be valid, starting from the date of signing this power of attorney. If and only if WFOE notifies the company in writing to terminate this power of attorney in whole or in part or to replace the agent, the company will immediately withdraw the authorization and delegation hereof, and immediately sign a power of attorney in the same form as this power of attorney, making the same authorization and delegation as the content of this power of attorney to other agent as designated by WFOE at that time; except for the abovementioned, the company will not revoke the authorization and delegation made to WFOE.

During the term of this power of attorney, I hereby waive all rights related to the Personal Shares that have been authorized to WFOE through this power of attorney, and will no longer exercise such rights by myself.

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Principal:

Fu Wei

/s/ Fu Wei

Power of Attorney

I, Zhou Yuan, a citizen of the People’s Republic of China, with the identity number is:***, holding 95% of the equity shares (the "**Personal Shares**") of Guangzhou Blue Whale Weaving Garment Co., Ltd. (the "**Blue Whale Weaving**”), on April 15, 2021, with respect to the Personal Shares hereby irrevocably authorizes Guangzhou Blue Ocean Whale Riding Technology Co., Ltd. (the “**WFOE**”) to exercise the following rights during the term of this Power of Attorney:

Authorize WFOE together to act as the sole and exclusive agent of me, to exercise rights including but not limited to the following rights in the name of me on the matters of the Personal Shares: (1) participate in the shareholders' meeting of Blue Whale Weaving and sign the relevant resolutions of the shareholders' meeting representing me; (2) exercise all the shareholder's rights entitled to me in accordance with the law and the articles of association of Blue Whale Weaving, including but not limited to shareholder voting rights, rights of sale or transfer or pledge or disposition of all or any part of the Personal Shares; and (3) to elect, designate and appoint the legal representative, chairman, director, supervisor, general manager and other senior management personnel of Blue Whale Weaving as the authorized representative of me.

WFOE will have the right to sign the transfer contract as stipulated in the exclusive option agreement (I being a party to the contract upon request) on behalf of me within the scope of authorization, and shall perform as scheduled the equity pledge agreement and the exclusive option agreement which are signed on the same day as this power of attorney signed by me as a party to, the exercise of which will not limit this authorization in any way.

Unless otherwise provided in this Power of Attorney, WFOE has the right to transfer, use or otherwise dispose of cash dividends and other non-cash income generated from the Personal Shares, according to oral or written instructions from me.

Unless otherwise provided in this Power of Attorney, all actions of WFOE with respect to the Personal Shares can be made according to WFOE's own discretion without any oral or written instructions from me.

All actions of WFOE with respect to the Personal Shares are regarded as the actions of me, and all documents signed are deemed to be signed by me, which will be ratified by me.

WFOE has the right to delegate, which it can delegate to other individuals or units to handle the above matters and exercise the Personal Shares without having to notify me in advance or obtain my consent.

During the period when I am a shareholder of Blue Whale Weaving, this power of attorney is irrevocable and continues to be valid, starting from the date of signing this

power of attorney. If and only if WFOE notifies the company in writing to terminate this power of attorney in whole or in part or to replace the agent, the company will immediately withdraw the authorization and delegation hereof, and immediately sign a power of attorney in the same form as this power of attorney, making the same authorization and delegation as the content of this power of attorney to other agent as designated by WFOE at that time; except for the abovementioned, the company will not revoke the authorization and delegation made to WFOE.

During the term of this power of attorney, I hereby waive all rights related to the Personal Shares that have been authorized to WFOE through this power of attorney, and will no longer exercise such rights by myself.

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[The following is the signature page]

Principal:

Zhou Yuan

/s/ Zhou Yuan

Exhibit 4.110
English translation

English Summary of

Contract for State-owned Construction Land

Use Right Assignment

Assignor: Foshan Natural Resources Bureau

Assignee: Foshan Tusheng Network Technology Co., Ltd.

General Provisions

1. In accordance with the Property Law of the People's Republic of China, Contract Law of the People's Republic of China, Land Administration Law of People's Republic of China, the Urban Real Estate Administration Law of the People's Republic of China, relevant administrative regulations and rules on land supply policies, the two parties enter into the contract based on the principles of equality, voluntariness, with compensation and in good faith.

2. The ownership of the assigned land belongs to the People's Republic of China. The Assignor assigns the state-owned construction land use right in accordance with authorization by the laws. The resources and objects buried under shall not be in the scope of assignment of state-owned construction land use right.

3. The Assignee has the right to possess, use, make profit and dispose of the state-owned construction land within the period of assignment, and shall be entitled to the construction of buildings, fixtures and any auxiliary facilities by making use of the land hereof.

Delivery of the Assigned Land and Payment of the Assignment Charge

4. The Registered No. of the land parcel under the contract is TD2021(NH)WG0001, with the total area of 77,716.68 square meters. Of which, the assigned land area of the land parcel is 77,716.68 square meters.

   The assigned land parcel under the contract is located at NH-A-03-06-02-10 and NH-A-03-06-03-02 parcel, Sanshan New Town, Guicheng, Nanhai District, Foshan.

5. The use purpose of the assigned land is for business and finance, retail commerce, food/beverage, hotel, entertainment, and other commercial services.

6. The Assignor agrees to deliver the assigned land to the Assignee prior to the date of February 26, 2021. The Assignor agrees that the assigned land shall meet the following conditions upon delivering the land:

   Surrounding infrastructure meets “three access”, namely access to road, access to electricity for infrastructure, and access to water for infrastructure, reaching the outside range of parcel red line.

7. The period of assignment of the state-owned construction land use right under this contract is forty (40) years, starting from the date of delivery of the assigned land.

8. The assignment charge for the state-owned construction land use right under the contract is RMB705,280,000, with RMB9,075 per square meter.

9. The deposit for the assigned land is RMB141,060,000. The deposit shall be regarded as part of the payment of assignment charge.

10. The assignment charge for the state-owned construction land use right shall be paid in full within 30 days from the date of execution of this contract.

11. After all the assignment charge of the land is paid up in accordance with this contract, the Assignee may apply for the registration of State-owned Construction Land Use Right Assignment by presenting this contract, payment receipt of the assignment charge and other relevant materials.

Development, Construction and Utilization of the Assigned Land

12. The Assignee covenants that total amounts of development and investment with respect to the land under this contract shall not be less than RMB1,600,000,000. The total amounts of development and investment with respect to the land under this contract include investments to buildings, fixtures and their auxiliary facilities, equipment, but exclude the assignment charge.

13. The new buildings, fixtures and their auxiliary facilities established on the assigned land under the contract shall be satisfied with the planning requirement for the assigned land regulated by the municipal (county) planning administrations.

14. The Assignee agrees to commence the construction on the assigned land before February 26, 2022 and complete before February 26, 2025.

    In case the commencement of construction needs to be deferred, the Assignee shall submit the application for deferral to the Assignor 30 days in advance. After the deferral of commencement is approved by the Assignor, the completion date shall also be deferred accordingly. However, the deferral should not exceed one year.

15. The Assignee should utilize the assigned land according to the purpose and floor area ratio provided under this contract. Any alteration of such is prohibited. When the land use purpose needs to be changed, both parties agree that the construction land use right shall be withdrawn by the Assignor with compensation.

Transfer, Lease and Mortgage of the State-Owned Construction Land Use Right

16. After the Assignee has made full payment of the assignment fee and received the Certificate for the Use of State-owned Land, the Assignee shall not transfer the state-owned construction land use right under the contract before completion of the development and construction of the land.

Expiration of the Term

17. Upon expiration of the term of the land use right under the contract, the land user may apply for a renewal of the land use right no less than one year prior to the expiration of the term of use if continued use of the land is needed. The Assignor shall approve the renewal unless the assigned land under the contract shall be withdrawn for public interests.

18. In case application to renew is made by the land user but failed due to the needs of public interests upon expiration of the term of land assignment, the land user shall return the Certificate of Use of State-owned Land and the Assignor shall recover the land use right on behalf of the State without compensation and cancel the registration of the land use right in accordance with related regulations. The Assignor shall recover the above-ground buildings, fixtures and their affiliated facilities on the assigned land, and compensate the land user based on the residual value of these buildings, fixtures and their affiliated facilities at the time of recovery.

Liability for Breach of Contract

19. The Assignee must make payment of the assignment fee on time as agreed in the contract. In case of failure to pay the assignment fee on time, the Assignee

shall pay the Assignor an overdue fine which is 0.1% of the delayed amount on a daily basis as of the due date of payment. In case the delay in payment exceeds 60 days and the Assignee cannot pay the assignment fee after urged by Assignor, the Assignor shall be entitled to terminate the contract. The Assignee is not entitled to claim back the down payment, whereas the Assignor may demand compensation from the Assignee for other losses due to the breach of the contract.

20. In case the Assignee ceases to invest in and construct the project due to its own reasons, thus requesting termination of the contract and return of the land to the Assignor, the Assignor shall obtain approval from the People's Government that formerly approved the land assignment scheme, then return, in accordance with the agreements hereinafter where applicable, partially or fully the assignment fee except the down payment agreed in the contract (and excluding interests) and recover the land use right at no consideration for the buildings and structure already constructed within the land parcel. The Assignor may also require the Assignee to remove the existing buildings and structures to restore the surface of the land.

    (1) In case the application is made by the Assignee to the Assignor no less than 60 days before the date of one year from the date of construction commencement agreed in the contract, the Assignor shall, after withholding the down payment, return 70% of the assignment fee already paid by the Assignee;

    (2) In case the application is made by the Assignee to the Assignor after one year but no less than 60 days before the date of two years from the date of construction commencement as agreed in the contract, the Assignor shall, after withholding the down payment and imposing the idle land fee, return 70% of the remaining assignment fee that has been paid to the Assignee.

21. In case the Assignee causes the land for construction to become idle, and the term of idleness reaches one year but is less than two years, an idle land fee shall be imposed; if the term of idleness reaches two years and construction is yet to commence, the Assignor is entitled to recover the State-owned construction land use right without compensation.

22. In case the Assignee fails to commence construction at the date agreed in the contract, or a date for delayed construction otherwise agreed, the Assignee shall pay the Assignor a penal sum that equals 0.03% of the total assignment fee for each day that is delayed. The Assignor is entitled to request the Assignee to continue performance of obligations.

In case the Assignee fails to complete construction at the date agreed in the contract, or a date for delayed completion otherwise agreed, the Assignee shall pay the Assignor a penal sum of 0.03% of the total assignment fee for each day that is delayed.

23. In case the total investment in fixed assets, investment frequency and total investing amount fail to meet the standards as agreed upon in the contract, the Assignor may, in accordance with the ratio of actual difference to the agreed total investment and investment frequency, impose a penal sum equal to the same ratio of the total assignment fee, and the Assignor may request the Assignee to continue performance of obligations.

24. In case any index of building volumetric fraction, building density and other index is lower than the minimum standard under the contract, the Assignor may, in accordance with the ratio of actual difference to the agreed minimum standard, impose a penal sum equal to the same ratio of the total assignment fee, and the Assignor may request the Assignee to continue performance of obligations. Where and if any index such as the building volumetric fraction, building density and other index is higher than the maximum standard, the Assignor is entitled to withdraw the portion in excess of the maximum standard, and in accordance with the ratio of actual difference to the agreed maximum standard, impose a penal sum equal to the same ratio of the total assignment fee.

25. Upon payment of the assignment fee by the Assignee, the Assignor shall deliver the assigned land as scheduled under the contract. Where the Assignor fails to deliver the assigned land as scheduled and causes a delay in the Assignee's use of land, the Assignor shall pay to the Assignee a penal sum of 0.1% of the assignment fee already paid by the Assignee, and the term of land use shall commence on the date of actual delivery. Where the delay in delivering the assigned land exceeds 60 days, and the Assignor fails to deliver the land upon the Assignee's urge, the Assignee shall be entitled to terminate the contract, and the Assignor shall refund to the Assignee double the amount of deposit and return the remaining portion of the assignment fee paid, the Assignee may recover damages from the Assignor.

26. In case the Assignor fails to deliver the land as scheduled or the delivered land fails to meet the conditions under the contract or unilaterally changes the conditions of use of the land, the Assignee is entitled to request performance of the Assignor's obligations under the contract, and to claim for damages arising out of delayed performance. The term of the land use shall commence on the date that the condition of the land meets the standards of the contract.

Applicable Laws and Dispute Resolution

27. The conclusion, validity, interpretation, performance and dispute resolution related to the contract shall be governed by the laws of People's Republic of China.

28. Disputes arising from the performance of the contract shall be resolved by both Parties through negotiation. Where negotiation fails, the dispute shall be submitted to the People's Court for litigation.

Miscellaneous

29. The scheme of land parcel assignment under the contract has been approved by the People's Government of the City of Foshan, the contract shall become effective as of the date of execution by both Parties.

Assignor: /seal/ **Foshan Natural Resources Bureau**

Signature: /s/ Authorized Signatory

Assignee: /seal/ **Foshan Tusheng Network Technology Co., Ltd.**

Signature: /s/ Authorized Signatory

Date: February 26, 2021

Exhibit 8.1

List of Principal Subsidiaries and Consolidated Affiliated Entities of JOYY Inc.

Subsidiaries	Name in Chinese	Place of Incorporation
Duowan Entertainment Corporation	N/A	BVI
NeoTasks Inc.	N/A	Cayman Islands
NeoTasks Limited	N/A	Hong Kong
Huanju Shidai Technology (Beijing) Co., Ltd.	欢聚时代科技(北京)有限公司	PRC
Guangzhou Huanju Shidai Information Technology Co., Ltd.	广州欢聚时代信息科技有限公司	PRC
Bigo Inc	N/A	Cayman Islands
Cube Technology Pte. Ltd.	N/A	Singapore
Bigo Technology Pte. Ltd.	N/A	Singapore
Likeme Pte. Ltd.	N/A	Singapore
Bigo (Hong Kong) Limited	N/A	Hong Kong
Guangzhou BaiGuoYuan Information Technology Co., Ltd.	广州市百果园信息技术有限公司	PRC
Bigo Internet Information Pte. Ltd.	N/A	Singapore
Guangzhou Wangxing Information Technology Co., Ltd.	广州市网星信息技术有限公司	PRC
Cloud Solution Inc	N/A	Cayman Islands
Cloud Internet Service Limited	N/A	United Kingdom
Singularity IM, Inc.	N/A	Delaware
PageBites, Inc.	N/A	Delaware
Funstage Technology Ltd	N/A	BVI
Topstage Technology Ltd	N/A	BVI
Runderfo Inc.*	N/A	Cayman Islands
Goldenage Technology Investment Group Limited*	N/A	Hong Kong
Guangzhou Xiling Technology Co., Ltd.*	广州熙凌科技有限公司	PRC
Guangzhou Fanggui Information Technology Co., Ltd.*	广州方硅信息技术有限公司	PRC

Consolidated Affiliated Entities and their Subsidiaries	Name in Chinese	Place of Incorporation
Beijing Tuda Science and Technology Co., Ltd.	北京途达科技有限责任公司	PRC
Guangzhou Huaduo Network Technology Co., Ltd.	广州华多网络科技有限公司	PRC
Guangzhou Huanju Electronic Commerce Co., Ltd.	广州欢聚电子商务有限公司	PRC
Guangzhou Shangying Network Technology Co., Ltd.	广州市尚颖网络科技有限公司	PRC
Guangzhou Fangu Network Technology Partnership (LP)	广州市梵谷网络科技合伙企业(有限合伙)	PRC
Guangzhou Wanyin Network Technology Partnership (LP)	广州市万引网络科技合伙企业(有限合伙)	PRC
Guangzhou Qianxun Network Technology Co., Ltd.	广州市千旬网络科技有限公司	PRC
Guangzhou BaiGuoYuan Network Technology Co., Ltd.	广州市百果园网络科技有限公司	PRC
Chengdu Yunbu Network Technology Co., Ltd.	成都市云布网络科技有限公司	PRC

Chengdu Luota Network Technology Co., Ltd.	成都市洛塔网络科技有限公司	PRC
Chengdu Jiyue Network Technology Co., Ltd.	成都市际月网络科技有限公司	PRC
Guangzhou Xuancheng Network Technology Co., Ltd.	广州市炫橙网络科技有限公司	PRC
Guangzhou Yueyi Network Technology Partnership(LP)	广州市悦翼网络科技合伙企业(有限合伙)	PRC
Guangzhou Xuanyi Network Technology Partnership(LP)	广州市炫翼网络科技合伙企业(有限合伙)	PRC
Guangzhou Ruicheng Network Technology Co., Ltd.	广州市锐橙网络科技有限公司	PRC
Guangzhou Tuyue Network Technology Co., Ltd.	广州途越网络科技有限公司	PRC
Guangzhou Yiling Network Technology Co., Ltd.*	广州奕凌网络科技有限公司	PRC
Guangzhou Jinhong Network Media Co., Ltd.*	广州津虹网络传媒有限公司	PRC

*On November 16, 2020, we entered into definitive agreements with Baidu, Inc., or Baidu, and made certain amendments to the share purchase agreement on February 7, 2021, pursuant to which Baidu agreed to acquire our PRC video-based entertainment live streaming business, or YY Live, including the YY mobile app, YY.com website, and PC YY, among others, for an aggregate purchase price of approximately US$3.6 billion in cash, subject to certain adjustments. The acquisition has been substantially completed, with certain customary matters remaining to be completed in the future.

Certification by the Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, David Xueling Li, certify that:

1. I have reviewed this annual report on Form 20-F of JOYY Inc. (the “Company”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the period covered by this annual report that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting; and

5. The Company’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of the Company’s board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Date: April 29, 2022

By: /s/ David Xueling Li
Name: David Xueling Li
Title: Chief Executive Officer

Certification by the Principal Accounting Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Fuyong Liu, certify that:

1. I have reviewed this annual report on Form 20-F of JOYY Inc. (the "Company");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by this annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and

5. The Company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 29, 2022

By: /s/ Fuyong Liu
Name: Fuyong Liu
Title: General Manager of Finance

Exhibit 13.1

Certification by the Principal Executive Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of JOYY Inc. (the "Company") on Form 20-F for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David Xueling Li, Chief Executive Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 29, 2022

By: /s/ David Xueling Li
Name: David Xueling Li
Title: Chief Executive Officer

Exhibit 13.2

Certification by the Principal Accounting Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of JOYY Inc. (the “Company”) on Form 20-F for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Fuyong Liu, General Manager of Finance of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 29, 2022

By: /s/ Fuyong Liu
Name: Fuyong Liu
Title: General Manager of Finance

Exhibit 15.1

Our ref RDS/741072-000001/23364395v2
Direct tel +852 2971 3046
E-mail richard.spooner@maples.com

JOYY Inc.
30 Pasir Panjang Road #15-31A Mapletree Business City,
Singapore 117440

29 April 2022

Dear Sir

JOYY Inc.

We have acted as legal advisors as to the laws of the Cayman Islands to JOYY Inc., an exempted company incorporated with limited liability under the laws of the Cayman Islands (the "**Company**"), in connection with the filing by the Company with the United States Securities and Exchange Commission (the "**SEC**") of an annual report on Form 20-F for the year ended 31 December 2021 (the "**Annual Report**"), which will be filed with the Securities and Exchange Commission in the month of April 2022.

We hereby consent to the reference of our name under the heading "Taxation" in the Annual Report, and further consent to the incorporation by reference into the Registration Statements on Form S-8 (File No. 333-187074, File No. 333-215742, File No. 333-229099 and File No. 333-234003) of the summary of our opinion under the headings "Item 5. Operating and Financial Review and Prospects—A. Operating Results—Discussion of Selected Statements of Operations Items—Taxation—Cayman Islands" and Item 10. Additional Information—E. Taxation—Cayman Islands Taxation". We also consent to the filing with the SEC of this consent letter as an exhibit to the Annual Report.

Yours faithfully

/s/ Maples and Calder (Hong Kong) LLP
Maples and Calder (Hong Kong) LLP

方達律師事務所
FANGDA PARTNERS

Shanghai●Beijing●Shenzhen●Hong Kong●Guangzhou

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24/F, HKRI Center Two, HKRI Taikoo Hui
288 Shi Men Yi Road
Shanghai 200041, PRC

To:

JOYY Inc.
30 Pasir Panjang Road #15-31A Mapletree Business City
Singapore 117440

April 29, 2022

Re: 2021 Annual Report on Form 20-F of JOYY Inc.

Dear Sirs,

We consent to the reference to our firm under the headings "Item 3. Key Information—D. Risk Factors," and "Item 4. Information on the Company—B. Business Overview—PRC Regulation," in JOYY Inc.'s Annual Report on Form 20-F for the year ended December 31, 2021 (the "**Annual Report**"), which will be filed with the Securities and Exchange Commission (the "SEC") in the month of April 2022, and further consent to the incorporation by reference of the summaries of our opinions under these captions into the Company's registration statements on Form S-8 (No. 333-187074, No. 333-215742, No. 333-229099 and No. 333-234003). We also consent to the filing with the SEC of this consent letter as an exhibit to the Annual Report on Form 20-F for the year ended December 31, 2021.

Yours sincerely,

/s/ Fangda Partners
Fangda Partners

Exhibit 15.3

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (File No. 333-187074, No. 333-215742, No. 333-229099 and No. 333-234003) of JOYY Inc. of our report dated April 29, 2022 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 20-F.

/s/ PricewaterhouseCoopers Zhong Tian LLP
Guangzhou, the People's Republic of China

April 29, 2022