
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (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, 2018

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

Commission file number: 001-37871

Gridsum Holding 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)

South Wing, High Technology Building
No. 229 North 4th Ring Road
Haidian District, Beijing 100083
People's Republic of China
(Address of principal executive offices)

Michael Peng Zhang, Co-Chief Financial Officer
South Wing, High Technology Building
No. 229 North 4th Ring Road
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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

American Depositary Shares, each representing one
Class B Ordinary Share, par value US\$0.001 per share
Class B Ordinary Shares, par value US\$0.001 per share*

Name of each exchange on which registered

The Nasdaq Stock Market LLC
The Nasdaq Stock Market LLC

* Not for trading, but only in connection with the listing of the American Depositary Shares on The Nasdaq Stock Market.

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

None

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

None

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.

As of December 31, 2018, there were 30,833,390 ordinary shares outstanding, par value \$0.001 per share, being the sum of 4,543,461 Class A ordinary shares and 26,289,929 Class B ordinary shares.

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

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.

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

† 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.

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DEFINED TERMS

Except where the context otherwise requires and for purposes of this annual report only:

- “ADSs” refers to our American depository shares, and each ADS represents one Class B ordinary share;
- “China” and “PRC” refer to the People’s Republic of China, excluding Taiwan, Hong Kong and Macau;
- “RMB” and “Renminbi” refer to the legal currency of the People’s Republic of China;
- “shares” and “ordinary shares” refer to our Class A and Class B ordinary shares, US\$0.001 par value per share;
- “US\$” and “U.S. Dollar” refer to the legal currency of the United States of America; and
- “we,” “us,” and “our company” refer to Gridsum Holding Inc., a Cayman Islands company, and its predecessor Cayman Islands entity, subsidiaries and consolidated affiliated entities.

We use RMB as our reporting currency in our financial statements and in this annual report. This annual report contains translations of RMB amounts into U.S. Dollars at specific rates solely for the convenience of the readers. Unless otherwise noted, any RMB amounts are translated into U.S. Dollars at the exchange rate set forth in the H.10 statistical release of the Federal Reserve Board on December 31, 2018, which was RMB6.8755 to US\$1.00. We make no representation that any RMB or U.S. Dollar amounts could have been, or could be, converted into U.S. Dollars or RMB, as the case may be, at any particular rate, at the rate stated above, or at all. The exchange rate set forth in the H.10 statistical release of the Federal Reserve Board on April 19, 2019 was RMB6.7032 to US\$1.00.

FORWARD-LOOKING STATEMENTS

Certain statements contained in this annual report on Form 20-F, including those statements contained under the captions “Item 4. Information on the Company” and “Item 5. Operating and Financial Review and Prospects” that are not statements of historical fact, are “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, and within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements can be generally identified by the use of terms such as “may,” “will,” “expect,” “anticipate,” “aim,” “estimate,” “intend,” “plan,” “believe,” “likely to” or other similar expressions. In addition to the statements contained in this annual report, we (or our directors or executive officers authorized to speak on our behalf) from time to time may make forward-looking statements, orally or in writing, regarding us (including our subsidiaries and consolidated affiliated entities) and our business, including in press releases, oral presentations, filings under the Securities Act, the Exchange Act or securities laws of other countries, and filings with The Nasdaq Stock Market, or other stock exchanges. These forward-looking statements include, but are not limited to, statements about:

- our goals and strategies;
- our future business development, financial condition and results of operations;
- expected changes in our revenues, costs or expenditures;
- the growth of social media, internet and mobile users and internet and mobile advertising in China;
- competition in our industry;
- fluctuations in general economic and business conditions in China; and
- PRC governmental regulations and policies relating to media, software, big data, the internet and online advertising.

You should not rely upon our forward-looking statements as predictors of future events. Such forward-looking statements represent our judgment or expectations regarding the future, and are subject to risks and uncertainties that may cause actual events and our future results to be materially different than is indicated by such statements. See the information under “Item 3. Key Information—D. Risk Factors” and elsewhere in this annual report for a discussion of these risks, assumptions and uncertainties. These risks, assumptions and uncertainties are not necessarily all of the important factors that could cause actual results to differ materially from those expressed in any of our forward-looking statements. We operate in an evolving environment and new risk factors and uncertainties emerge from time to time and it is not possible for us to predict all risk factors and uncertainties. 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 undertake no obligation, and specifically decline any obligation, to update publicly or revise any forward-looking statements, whether as a result of new information, future events or otherwise. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this annual report might not occur. We qualify all of our forward-looking statements by these cautionary statements.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

The following selected consolidated statement of operations data for the years ended December 31, 2016, 2017 and 2018, and selected consolidated balance sheet data as of December 31, 2017 and 2018, have been derived from our audited consolidated financial statements included elsewhere in this annual report. The following selected consolidated statement of operations data for the years ended December 31, 2014 and 2015, and selected consolidated balance sheet data as of December 31, 2014, 2015 and 2016, have been derived from our audited consolidated financial statements not included in this annual report. The selected consolidated financial data should be read together with our consolidated financial statements and the related notes and “Item 5. Operating and Financial Review and Prospects” included elsewhere in this annual report. Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP). Our historical results are not necessarily indicative of results for future periods.

	For the Year Ended December 31,					US\$
	2014 RMB	2015 RMB	2016 RMB	2017 RMB	2018 RMB	
(in thousands, except for share, per share and per ADS data)						
Consolidated Statements of Operations Data:						
Revenues:						
Enterprise	104,891	208,385	311,106	377,013	387,574	56,370
e-Government and other	21,340	26,904	60,772	102,216	53,117	7,726
Less: Business tax and surcharges	(1,711)	(3,092)	(8,055)	(9,696)	(9,444)	(1,374)
Net revenues	124,520	232,197	363,823	469,533	431,247	62,722
Cost of revenues ⁽¹⁾	(21,143)	(33,392)	(55,707)	(94,640)	(100,867)	(14,670)
Gross profit	103,377	198,805	308,116	374,893	330,380	48,052
Operating expenses:						
Sales and marketing expenses ⁽¹⁾	(46,880)	(88,364)	(139,781)	(192,413)	(166,176)	(24,169)
Research and development expenses ⁽¹⁾	(38,137)	(97,553)	(160,387)	(257,921)	(533,586)	(77,607)
General and administrative expenses ⁽¹⁾	(54,931)	(60,820)	(88,108)	(143,743)	(182,289)	(26,513)
Total operating expenses	(139,948)	(246,737)	(388,276)	(594,077)	(882,051)	(128,289)
Loss from operations	(36,571)	(47,932)	(80,160)	(219,184)	(551,671)	(80,237)
Other income/(expense):						
Foreign currency exchange gain/(loss)	(766)	1,339	(1,600)	(8,552)	(9,719)	(1,414)
Interest income/(expense), net	180	80	(614)	(5,430)	(9,878)	(1,437)
Other income/(expense), net	373	111	(1,452)	(1,683)	1,005	146
Amortization of debt discount	—	—	—	—	(25,337)	(3,685)
Gain on change in fair value of derivative liabilities	—	—	—	—	57,890	8,420
Loss before income tax	(36,784)	(46,402)	(83,826)	(234,849)	(537,710)	(78,207)
Income tax expense	(476)	(15,371)	(14,801)	(4,275)	15,165	2,206
Net loss	(37,260)	(61,773)	(98,627)	(239,124)	(522,545)	(76,001)
Less: Net loss attributable to non-controlling interests	—	(16)	(53)	(128)	(1,220)	(177)

	For the Year Ended December 31,					
	2014	2015	2016	2017	2018	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands, except for share, per share and per ADS data)					
Consolidated Statements of Operations Data:						
Net loss attributable to Gridsum Holding Inc.	(37,260)	(61,757)	(98,574)	(238,996)	(521,325)	(75,824)
Accretion to preferred shares redemption value	(9,480)	(19,707)	(16,725)	—	—	—
Cumulative dividend to preferred shareholders	(16,327)	(16,642)	(12,990)	—	—	—
Net loss attributable to Gridsum's ordinary shareholders	<u>(63,067)</u>	<u>(98,106)</u>	<u>(128,289)</u>	<u>(238,996)</u>	<u>(521,325)</u>	<u>(75,824)</u>
Net loss	(37,260)	(61,773)	(98,627)	(239,124)	(522,545)	(76,001)
Foreign currency translation adjustment, net of tax	(2,006)	(19,330)	8,923	(20,452)	(4,957)	(721)
Comprehensive loss	<u>(39,266)</u>	<u>(81,103)</u>	<u>(89,704)</u>	<u>(259,576)</u>	<u>(527,502)</u>	<u>(76,722)</u>
Less: Comprehensive loss attributable to non-controlling interests	—	(16)	(53)	(128)	(1,220)	(177)
Comprehensive loss attributable to Gridsum Holding Inc.	<u>(39,266)</u>	<u>(81,087)</u>	<u>(89,651)</u>	<u>(259,448)</u>	<u>(526,282)</u>	<u>(76,545)</u>
Net loss per ordinary share:						
Basic and diluted	(6.31)	(9.81)	(8.52)	(7.90)	(16.91)	(2.46)
Net loss per ADS: ⁽²⁾						
Basic and diluted	(6.31)	(9.81)	(8.52)	(7.90)	(16.91)	(2.46)
Weighted average number of ordinary shares used in per share calculations:						
Basic and diluted	10,000,000	10,000,000	15,054,865	30,243,250	30,827,600	30,827,600
Non-GAAP Financial Data: ⁽³⁾						
Non-GAAP net loss attributable to Gridsum's ordinary shareholders	(59,185)	(89,300)	(117,659)	(216,069)	(482,299)	(70,148)
Non-GAAP net loss per ordinary share attributable to Gridsum's ordinary shareholders:						
Basic and diluted	(5.92)	(8.93)	(7.82)	(7.14)	(15.65)	(2.28)
Non-GAAP net loss per ADS attributable to Gridsum's ordinary shareholders:						
Basic and diluted	(5.92)	(8.93)	(7.82)	(7.14)	(15.65)	(2.28)
EBITDA	(29,927)	(33,382)	(59,319)	(197,945)	(493,131)	(71,723)
Adjusted EBITDA	<u>(26,045)</u>	<u>(24,576)</u>	<u>(48,689)</u>	<u>(175,018)</u>	<u>(454,105)</u>	<u>(66,047)</u>

(1) Share-based compensation expenses were allocated in cost of revenues and operating expenses as follows:

	For the Year Ended December 31,					
	2014	2015	2016	2017	2018	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands)					
Cost of revenues	71	335	319	501	801	117
Sales and marketing expenses	370	1,651	2,252	4,739	6,810	990
Research and development expenses	449	3,347	3,955	8,641	16,310	2,372
General and administrative expenses	<u>2,992</u>	<u>3,473</u>	<u>4,104</u>	<u>9,046</u>	<u>15,105</u>	<u>2,197</u>
Total	<u>3,882</u>	<u>8,806</u>	<u>10,630</u>	<u>22,927</u>	<u>39,026</u>	<u>5,676</u>

(2) Each ADS represents one Class B ordinary share.

(3) See "—Non-GAAP Financial Measures."

	As of December 31,					
	2014	2015	2016	2017	2018	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands)					
Consolidated Balance Sheet Data:						
Cash and cash equivalents	61,830	198,523	520,452	166,690	92,684	13,480
Total assets	227,597	618,246	1,208,500	1,403,097	915,390	133,136
Total liabilities	182,192	357,652	431,251	859,406	860,580	125,164
Total mezzanine equity	176,941	476,018	—	—	—	—
Ordinary shares	68	—	—	—	—	—
Class A ordinary shares	—	31	31	31	31	5
Class B ordinary shares	—	37	168	176	177	26
Additional paid-in capital	2,436	—	1,090,991	1,107,201	1,146,253	166,715
Statutory reserve	—	—	6,662	6,730	12,903	1,877
Accumulated deficit	(134,360)	(196,866)	(310,847)	(549,911)	(1,077,409)	(156,703)
Total Gridsum's shareholders' (deficit)/equity	(131,536)	(215,808)	776,918	533,688	46,459	6,757
Non-controlling interests	—	384	331	10,003	8,351	1,215
Total shareholders' (deficit)/equity	(131,536)	(215,424)	777,249	543,691	54,810	7,972
Number of outstanding ordinary shares	10,000,000	10,000,000	15,054,865	30,243,250	30,827,600	30,827,600

Non-GAAP Financial Measures

In evaluating our business, we consider and use the following non-GAAP financial measures as supplemental measures to review and assess our operating performance: non-GAAP net loss attributable to Gridsum's ordinary shareholders, non-GAAP net loss per share attributable to Gridsum's ordinary shareholders, non-GAAP net loss per ADS attributable to Gridsum's ordinary shareholders, EBITDA and adjusted EBITDA. The presentation of these non-GAAP financial measures is not intended to be considered in isolation or as a substitute for the financial information prepared in accordance with U.S. GAAP. We define (i) non-GAAP net loss attributable to Gridsum's ordinary shareholders as net loss attributable to Gridsum's ordinary shareholders before share-based compensation, (ii) non-GAAP net loss per share attributable to Gridsum's ordinary shareholders as its per share equivalent and (iii) non-GAAP net loss per ADS attributable to Gridsum's ordinary shareholders as its per ADS equivalent. We define EBITDA as net loss before interest income and expenses, income tax expenses and depreciation expenses, and adjusted EBITDA as EBITDA before share-based compensation.

We present these non-GAAP financial measures because they are used by our management to evaluate our operating performance and formulate our business plans. These non-GAAP financial measures enable our management to assess our operating results without considering the impact of non-cash charges, including depreciation expenses and share-based compensation, and without considering the impact of non-operating items such as interest income and expenses and income tax expenses. We also believe that the use of these non-GAAP measures facilitates investors' assessment of our operating performance.

These non-GAAP financial measures are not defined under U.S. GAAP and are not presented in accordance with U.S. GAAP. These non-GAAP financial measures have limitations as analytical tools. One of the key limitations of using these non-GAAP financial measures is that they do not reflect all items of income and expense that affect our operations. Interest income and expenses, income tax expenses, depreciation expenses and share-based compensation have been and may continue to be incurred in our business and are not reflected in the presentation of adjusted EBITDA. Further, these non-GAAP financial measures may differ from the non-GAAP financial measures used by other companies, including our peer companies, so their utility for comparison purposes may be limited.

We compensate for these limitations by reconciling our non-GAAP financial measures to the most directly comparable U.S. GAAP financial measures, which should be considered when evaluating our performance. We encourage you to review our financial information in its entirety and not rely on a single financial measure.

The following tables reconcile our non-GAAP net loss attributable to Gridsum's ordinary shareholders, EBITDA and adjusted EBITDA in 2014, 2015, 2016, 2017 and 2018 to the most directly comparable financial measures calculated in accordance with U.S. GAAP, which are net loss attributable to Gridsum's ordinary shareholders and net loss, respectively:

	For the Year Ended December 31,					
	2014 RMB	2015 RMB	2016 RMB	2017 RMB	2018 RMB US\$	
(in thousands, except for share, per share and per ADS data)						
Reconciliation of Net Loss Attributable to Gridsum's Ordinary Shareholders to Non-GAAP Net Loss Attributable to Gridsum's Ordinary Shareholders:						
Net loss attributable to Gridsum's ordinary shareholders	(63,067)	(98,106)	(128,289)	(238,996)	(521,325)	(75,824)
Share-based compensation	3,882	8,806	10,630	22,927	39,026	5,676
Non-GAAP net loss attributable to Gridsum's ordinary shareholders	(59,185)	(89,300)	(117,659)	(216,069)	(482,299)	(70,148)
Weighted average number of ordinary shares used in net loss per share attributable to Gridsum's ordinary shareholders and non-GAAP net loss per share attributable to Gridsum's ordinary shareholders calculations: Basic and diluted	10,000,000	10,000,000	15,054,865	30,243,250	30,827,600	30,827,600
Net loss per ordinary share attributable to Gridsum's ordinary shareholders: Basic and diluted	(6.31)	(9.81)	(8.52)	(7.90)	(16.91)	(2.46)
Net loss per ADS attributable to Gridsum's ordinary shareholders: Basic and diluted ⁽¹⁾	(6.31)	(9.81)	(8.52)	(7.90)	(16.91)	(2.46)
Non-GAAP net loss per ordinary share attributable to Gridsum's ordinary shareholders: Basic and diluted	(5.92)	(8.93)	(7.82)	(7.14)	(15.65)	(2.28)
Non-GAAP net loss per ADS attributable to Gridsum's ordinary shareholders: Basic and diluted	(5.92)	(8.93)	(7.82)	(7.14)	(15.65)	(2.28)

(1) Each ADS represents one Class B ordinary share.

	For the Year Ended December 31,					
	2014 RMB	2015 RMB	2016 RMB	2017 RMB	2018 RMB US\$	
(in thousands)						
Reconciliation of Net Loss to EBITDA and Adjusted EBITDA :						
Net loss		(37,260)	(61,773)	(98,627)	(239,124)	(522,545) (76,001)
Interest expense/(income), net		(180)	(80)	614	5,430	9,878 1,437
Income tax expenses		476	15,371	14,801	4,275	(15,165) (2,206)
Depreciation and amortization expenses		7,037	13,100	23,893	31,474	34,701 5,047
EBITDA		(29,927)	(33,382)	(59,319)	(197,945)	(493,131) (71,723)
Share-based compensation		3,882	8,806	10,630	22,927	39,026 5,676
Adjusted EBITDA		(26,045)	(24,576)	(48,689)	(175,018)	(454,105) (66,047)

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

The following risk factors, and other risks that may be described in other reports we submit to or file with the SEC, could affect our actual results and cause those results to differ materially from what is expressed in forward-looking statements we make from time to time. If any of these risks actually occurs, our business, financial condition and results of operations could be materially adversely affected, the trading price of our ADSs could decline, and you could lose all or part of your investment.

Risks Relating to Our Business

We have a history of losses and we may not achieve or sustain profitability.

We have incurred net losses in each year since our inception in 2005, including net losses of RMB98.6 million, RMB239.1 million and RMB522.5 million (US\$76.0 million) in 2016, 2017 and 2018, respectively. As of December 31, 2018, we had an accumulated deficit of RMB1.1 billion (US\$156.7 million). We expect to continue to expend substantial financial and other resources on, among other things:

- investments in our research and development team and in the development of new solutions and enhancements of our existing solutions;
- sales and marketing, including expanding our sales force, increasing our customer base, increasing market awareness of our solutions and enhancing our brand;
- expanding our operations and infrastructure;
- hiring additional employees; and
- hiring general and administrative employees and executives, including administrative, legal, human resources, information technology, finance and accounting employees and executives.

These efforts may prove more expensive than we currently anticipate and may not result in increased revenues or profitability of our business. In 2018 we experienced a decline in the level of our business activity and related revenues. We may not be able to generate sufficient revenues to offset higher costs and achieve or sustain profitability. If we fail to achieve or sustain profitability, our business and operating results, and the price of our ADSs, will be adversely affected.

Our limited operating history makes it difficult to evaluate our current business and future prospects, and increases the risk of your investment.

We launched our first data analytics solution in 2009, and introduced our other solutions to the market more recently. This limited operating history and the dynamic nature of the market in which we operate limit our ability to forecast future operating results and subject us to many uncertainties, including our ability to plan for and anticipate future growth. Our revenue growth in earlier periods did not continue in 2018, and should not be considered indicative of our future performance. We encounter risks and uncertainties frequently experienced by growing companies in rapidly changing industries, such as determining appropriate investments of our limited resources, market reception of our existing and future solutions, competition from other companies, attracting and retaining customers, hiring, integrating, training and retaining skilled personnel, developing new solutions, determining prices for our solutions and unforeseen expenses. If our assumptions regarding these risks and uncertainties, which we use to plan our business, are incorrect or change, or if we do not address these risks successfully, our operating and financial results and our business could be adversely affected.

We identified material weaknesses in our internal controls as of December 31, 2016, 2017 and 2018, and if we fail to address them and to establish and maintain effective internal controls in the future, our ability to report our financial results accurately or to prevent fraud may be adversely affected, along with investor confidence in us and the market price of the ADSs.

A material weakness is a deficiency, or combination of deficiencies, in internal controls, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. In the course of auditing our consolidated financial statements, we and our then independent registered public accounting firm identified two material weaknesses in our internal control over financial reporting as of December 31, 2016, 2017 and 2018. As of December 31, 2018, the material weaknesses related to: (1) our lack of sufficient financial reporting and accounting personnel with appropriate knowledge of U.S. GAAP and the SEC reporting requirements to properly address complex accounting issues and prepare and review our financial statements and related disclosures in accordance with U.S. GAAP and SEC financial reporting requirements; and (2) the lack of written policies and procedures sufficient to timely record revenues and expenses in our financial statements.

Following the identification of these material weaknesses, we have taken measures to remedy them and to remedy other control deficiencies. These measures may not fully address the material weaknesses and other control deficiencies. Any such failure to correct control deficiencies, or any failure to discover and address any other control deficiencies could result in inaccurate financial statements and impair our ability to comply with applicable financial reporting requirements. As a result, our business, and the trading price of our ADSs, may be materially adversely affected.

Persistent serious control deficiencies could cause investors to lose confidence in our reported financial information, limiting our access to capital markets, adversely affecting our operating results and leading to declines in the trading price of the ADSs. Ineffective internal controls could also expose us to increased risk of fraud or misuse of corporate assets and subject us to potential delisting of the ADSs from the stock exchange on which they trade, or to other regulatory investigations and civil or criminal sanctions. Weaknesses in our internal controls may have contributed for the need, in conjunction with the preparation of our 2017 financial statements, to restate our 2015 and 2016 financial statements.

Our net revenues declined in 2018, and there can be no assurance that we can avoid further decline in the future.

In 2018 we experienced a decline in the level of our business activity and related revenue. Our net revenues decreased from RMB469.5 million in 2017 to RMB431.2 million (US\$62.7 million) in 2018, representing a decline of 8%. The decline was due to China's general economic conditions, some customer attrition, and prolonged contract renewal processes associated with delayed filing of our periodic reports with the SEC, among other factors. Many of these factors are beyond our control, and they may continue to have negative impact on our financial and operating performance in future periods. We cannot assure you that we will be able to avoid further revenue decline in the future, and we cannot assure you what level of customer demand and revenue may be associated with new solutions that we have developed recently. Even if revenue growth resumes, we are unlikely to experience the same rate of growth as we did in earlier periods. Therefore, investors should not rely on our results of operations in any earlier periods as an indication of our future performance

The expansion of our business in recent periods has placed demands on our management and operational and financial infrastructure.

The number of our customers grew rapidly in recent years, from 395 customers in 2016, to 505 customers in 2017 and 539 customers in 2018. The majority of our revenues in recent years were generated by sales to existing customers. That expansion has placed, and any further expansion will place, significant demands on our management and our operational and financial infrastructure. To manage any future expansion effectively, we must improve our operational, financial and management systems and processes by, among other things:

- attracting, training and integrating new employees, particularly for our sales and research and development teams;
- improving our operational infrastructure to support our business;
- developing our internal financial controls and disclosure controls to ensure timely and accurate reporting of our operational and financial results; and
- complying with applicable laws and regulations.

If we fail to manage our business, or if we fail to implement and maintain effective internal controls, our costs and expenses may increase more than we plan and our abilities to expand our customer base, enhance our existing solutions, develop new solutions, satisfy existing customers, attract new customers, respond to competitive pressures or otherwise execute our business plan may be diminished, and our operating results would be adversely affected.

For example, the filing of our 2017 Form 20-F was delayed in part due to inadequate internal control over financial reporting and changes of auditor. As a result, putative class action lawsuits were filed against us, the market price of our ADSs declined significantly, and our ability to secure new financing was adversely affected. Some customers reduced their level of business with us or did not renew their contracts, and our inability to obtain financing at favorable rates impacted our working capital and required us to cease doing business with some customers, which had an adverse effect on our financial results.

We expect to need additional financing, and if we are not able to secure it on favorable terms, or at all, we may have to delay, reduce or cease operations, and we may not be able to meet existing payment obligations.

We do not know when or if our business will generate sufficient cash to fund our ongoing operations, and we expect to need additional financing from time to time. In the future, we may require additional capital to conduct our business, including the need to develop new solutions or enhance existing solutions, improve our infrastructure or to acquire complementary businesses and technologies. We do not have any specific acquisition plans or targets at this time. We may require additional capital to respond to declines in demand for our products or other unforeseen circumstances. We may be unable to timely secure additional debt or equity financing on favorable terms, or at all. Any debt financing we obtain could involve restrictive covenants relating to financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. If we raise additional funds through issuances of equity, convertible debt or other securities convertible into equity, our existing shareholders could suffer significant dilution in their percentage ownership of our company, and any new equity securities we issue could have rights, preferences and privileges senior to those of holders of the Class B ordinary shares and ADSs.

As a result of the delayed filing of our periodic reports with the SEC, we will not be eligible to register the offer and sale of our securities using a registration statement on Form F-3 until we have timely filed all periodic reports required under the Securities Exchange Act of 1934 for twelve calendar months immediately prior to filing of the Form F-3. Should we wish to register the offer and sale of our securities to the public, our transaction costs would increase and the amount of time required to complete the transaction could increase, making it more difficult to execute any such transaction successfully and potentially harming our financial condition.

In March 2019, we issued and sold 3,461,902 Class B Ordinary Shares for an aggregate price of approximately US\$11.1 million, or a per share price of US\$3.20, in a private placement transaction. This private placement caused significant dilution to the interest of existing holders of our Class B ordinary shares and ADSs.

In May 2018, we issued and sold a convertible note in the principal amount of US\$40 million, or the FutureX Convertible Note, which is convertible in whole or in part at the holder's option into our Class B ordinary shares at an initial conversion price of US\$6.50, subject to customary adjustments in the case of share splits, share combinations, dividends, spin-offs, recapitalizations and certain other events. The note bears interest at 2.80% per annum. The principal amount of the note and all accrued and unpaid interest will become due on November 5, 2019, or earlier in the event of default or certain fundamental changes of our company. Any future conversion of the note may cause dilution to existing holders of our Class B ordinary shares and ADSs.

The note significantly increased our near-term payment obligations. Our business may not generate cash flow from operations to satisfy such payment obligations when they become due, and we may need to obtain new financing to repay it.

If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to support our business and to respond to business opportunities and challenges could be significantly limited, our business, operating results, financial condition and prospects could be adversely affected, and we may not be able to meet our payment obligations under our indebtedness.

Our efforts to further develop our technology through increased research and development activities and investment in our platform may not yield satisfactory results.

The software industry in China is rapidly evolving and highly competitive, requiring us to invest significant financial resources in research and development and our platform to keep pace with technological advances in the industry. We have expended and may continue to expend significant financial resources in research and development activities and investment in our platform and commercialization of new technologies and platforms to effectively compete in the future. Our research and development expenses were RMB160.4 million, RMB257.9 million, and RMB533.6 million (US\$77.6 million) in 2016, 2017 and 2018, respectively. Our net losses were RMB98.6 million, RMB239.1 million and RMB522.5million (US\$76.0 million) in 2016, 2017 and 2018, respectively. Research and development activities are inherently uncertain and may not generate revenues in a timely manner, or at all, and we may encounter practical difficulties in commercializing our research results and platform and technologies. Competitors' technologies could prove to be more cost-effective than ours, and our investment in platform and technologies may be rendered obsolete by the technological advances of others.

We have been named as a defendant in shareholder class action lawsuits that could have a material adverse impact on our business, financial condition, results of operation and cash flows, and our reputation.

We have been named as a defendant in shareholder class action lawsuits, which are described in “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal Proceedings,” and will have to defend against such suits, including any appeals of such suits should our initial defense be unsuccessful. We are currently unable to estimate the possible loss or possible range of loss, if any, associated with the resolution of these suits. If our initial defense of these suits is unsuccessful, there can be no assurance that we will prevail in any appeal.

We cannot predict the outcome of these lawsuits. The matters that led to our Audit Committee investigation and our financial restatement have exposed us to increased risks of litigation, regulatory proceedings and government enforcement actions. We and our current and former directors and officers may, in the future, be subject to additional litigation relating to such matters. Subject to certain limitations, we are obligated to indemnify our current and former directors and officers in connection with such lawsuits and any related litigation or settlements amounts. Regardless of the outcome, these lawsuits, and any other litigation that may be brought against us or our current or former directors and officers, could be time-consuming, result in significant expense and divert the attention and resources of our management and other key employees. An unfavorable outcome in any of these matters could exceed coverage provided under potentially applicable insurance policies, which is limited. Any such unfavorable outcome could have a material effect on our business, financial condition, results of operations and cash flows. Further, we could be required to pay damages or additional penalties or have other remedies imposed against us, or our current or former directors or officers, which could harm our reputation, business, financial condition, results of operations or cash flows.

Our solutions may become less useful, and our business may be harmed, if we fail to adapt and respond effectively to rapidly developing technology, evolving industry standards and practices, and changing customer needs, requirements or preferences.

The software industry in China is subject to rapid technological development, evolving industry standards and practices and changing customer needs, requirements and preferences. The success of our business will depend, in part, on our ability to adapt and respond effectively to these changes on a timely basis. If we are unable to develop and sell new solutions that satisfy our customers and provide enhancements and new features for our existing solutions that keep pace with rapid technological change and industry developments, our revenues and operating results could be adversely affected. If new technologies emerge that are able to deliver competitive solutions and applications at lower prices, more efficiently, more conveniently or more securely than our solutions, those technologies could adversely impact our ability to compete and adversely affect our operating results.

To grow our business, we must achieve a high level of customer satisfaction and contract renewals, extend our relationships with existing customers over time and sell our solutions to new customers.

We have no long-term customer contracts, and most of our customer contracts may be renewed on an annual basis. Our top 20 customers accounted for 55%, 44% and 39% of our total revenues during the years ended December 31, 2016, 2017 and 2018, respectively. For our business to succeed we must achieve a high level of customer satisfaction so that our customers will renew their contracts with us and increase their utilization of the solutions they purchase from us. This requires that our solutions perform up to customer expectations and customers achieve the return on investment that they expect. Even if our products perform to specifications, customers may choose not to renew or to cancel early. Our success also depends on our ability to extend our relationships with existing customers, both by growing their utilization of solutions they have purchased and by selling additional products in our solution suites. Finally, our ability to achieve significant revenue growth also depends on our ability to attract new customers.

Our ability to generate customer renewal, customer expansion and new customer sales depends on many factors, including customer satisfaction with the performance of our solutions, the prices of our solutions and competing solutions, mergers and acquisitions affecting our customer base, the effects of global economic conditions and reductions in customer spending levels generally. Our success with customers also depends on our ability to maintain a consistently high level of customer service and technical support to retain existing customers and attract new customers. If we are unable to hire and train sufficient support resources to provide adequate and timely support to our customers, our customers’ satisfaction with our solutions will be adversely affected. To the extent that our customers do not renew their contracts, terminate early or renew on less favorable terms or if our efforts to sell additional solutions to existing customers or new customers are not successful, our revenues may decline and our operating results could be adversely affected. The success of new solutions and enhancements of existing solutions depends on many factors, including timing, quality and market acceptance. Any new solutions that we develop may contain errors or defects or may not achieve the broad market acceptance necessary to generate sufficient revenues. If we are unable to successfully enhance our existing solutions to meet customer requirements, increase adoption and usage of our solutions or develop new solutions, our business and operating results will be adversely affected.

A significant portion of our revenues is generated from enterprise customers based on the volume of their keyword placements with a small number of premium search engines in China, using our marketing automation solutions. The loss of any of these customers or search engines, or the reduction in their activities, could materially adversely affect our business, results of operations and financial condition.

Our marketing automation solutions allow our enterprise customers to automate the bidding for and purchase of keywords on search engines. A small number of premium search engines, such as Baidu, Sogou and Qihoo 360, have historically accounted for a significant portion of the keyword inventory that these customers purchased through our solutions. A majority of the impressions placed by customers using our marketing automation solutions were placed on Baidu websites in 2016, 2017 and 2018. We expect that we will continue for the foreseeable future to depend upon a small number of premium search engines for our customers' purchases of search keywords. Because we have no long-term commitments from these search engines, they may reduce the inventory they sell to our customers. For example, if Baidu were to change its incentive programs for keyword placements by our marketing automation customers, or to cease doing business with us for any reason, our revenues and our financial results could be materially adversely affected.

Strategic relationships are an important part of our ability to grow our e-Government revenues, and if we do not maintain and strengthen those relationships, our results of operations and financial condition could be adversely affected.

In cooperation with the State Information Center of China, or the SIC, we have established a non-governmental entity and a dedicated company to serve the website and critical business application system needs of PRC local, municipal, provincial and central governmental agencies. A portion of our e-Government revenues were generated through our cooperation with the SIC, which is subject to many uncertainties. For example, the SIC may change its focus and reduce or terminate its support for the e-Government initiative, and PRC public sector agencies may face funding reductions or delays, reducing sales of our solutions. If any of these risks materialize, our e-Government revenues and results of operations could be materially adversely affected.

In 2016, we entered into a strategic cooperation agreement with the PRC Supreme People's Court Press, or People's Court Press, which established a framework for the application of our technology to legal information services. We have collaborated with the People's Court Press to develop new offerings such as the Chinese Legal Information Platform (or "Faxin" in Chinese), and, in cooperation with Tencent, a litigation service on WeChat's micro application platform (*Faxin Wei Su*). There can be no assurance that these new offerings will be successful.

Selling to public sector customers in China involves special risks. These sales often require significant upfront time and expense without any assurance that these efforts will generate any revenues. Governmental agencies may require us to comply with various regulations that are not applicable to sales to commercial enterprises, and may require us to put in place controls and procedures that may be costly to administer. Failure to comply with any such regulations could adversely affect our business, operating results and financial condition, and sales to public sector customers may prove to be unprofitable.

Our quarterly operating results may fluctuate significantly due to a wide range of factors, which makes future results difficult to predict.

Our revenues and operating results could vary significantly from quarter to quarter, due to many factors that are outside of our control, including:

- changes in the size or composition of our customer base;
- timing and size of customer renewals and sales of additional solutions to existing customers;
- timing and size of sales to new customers, including penetration into the judicial and IIoT sectors;
- timing of our business expenses, such as unexpected business expenses or significant new employee hiring;
- changes in pricing, and introduction of solutions and enhancements by competitors;

- changes in customer budgets;
- seasonal business fluctuations, as reflected in revenues that have generally been highest in the fourth quarter of a calendar year and lowest in the first quarter;
- our ability to control costs and expenses;
- the timing of satisfaction of revenue recognition criteria, particularly for large transactions;
- our ability to provide software solutions on-demand, without network outages or security breaches;
- fluctuations in our effective tax rate; and
- general economic and political conditions, domestically and internationally, as well as economic conditions affecting the specific industries in which our customers operate.

Any of these factors could cause our revenues and operating results to fluctuate, so quarter-to-quarter comparisons of our revenues, operating results and cash flows may not necessarily be indicative of our future performance.

We believe that quarter-to-quarter comparisons of our revenues, operating results and cash flows may not be meaningful and should not be relied upon as an indication of future performance. If our revenues or operating results fall below the expectations of investors or securities analysts in a particular quarter, or below any guidance we may provide, the price of the ADSs could decline.

If the market for our cloud-based SaaS offerings develops more slowly than we expect, our operating results would be adversely affected.

The market for business software that is delivered as cloud-based software-as-a-service, or SaaS, offerings is less mature than traditional on-premises software applications, and the adoption rate of SaaS business software may be slower among customers in industries with heightened data security concerns or business practices requiring highly customizable application software. Our success will depend to a substantial extent on the widespread adoption of SaaS business software in general, but we cannot be certain that the trend of adoption of SaaS solutions will continue in the future. In particular, many organizations have invested substantial personnel and financial resources in integrating legacy software into their businesses over time, and some have been reluctant or unwilling to migrate to SaaS. It is difficult to predict customer adoption rates and demand for our solutions, the future growth rate and size of the SaaS business software market or the entry of competitive applications. The expansion of the SaaS business software market depends on a number of factors, including the cost, performance and perceived value associated with SaaS, as well as the ability of SaaS providers to address data security and privacy concerns. If SaaS business software does not continue to achieve market acceptance, or there is a reduction in demand for SaaS business software caused by a lack of customer acceptance, technological challenges, weakening economic conditions, data security or privacy concerns, governmental regulation, competing technologies and solutions or decreases in information technology spending, it would result in decreased revenues and our business would be adversely affected.

We may continue to conduct acquisitions and enter into joint ventures, investments or other strategic alliances that may be unsuccessful.

We may continue to invest in or acquire other companies, or enter into joint ventures and other strategic alliances when appropriate opportunities arise. Such acquisitions, joint ventures and strategic alliances may expose us to operational, regulatory and market risks as well as risks associated with additional capital requirements and diversion of management attention. In particular, strategic alliances may expose us to unforeseen risks relating to our business partner's business that we did not discover prior to our investment, or failure to generate anticipated revenue or other benefits from the acquisition, joint venture or alliance. Any of these risks could have a material adverse effect on our business, financial condition and results of operations.

Our success depends on being able to expand our direct sales force and customer service and technical support team successfully.

Our ability to sell more of our solutions and achieve broad market acceptance of our solutions depends, to a significant extent, on our ability to expand our marketing and sales operations. To date, most of our growth has been attributable to the efforts of our direct sales force, which consists of a limited number of quota-carrying sales personnel and a limited number of customer service consultants. We intend to increase the number of our direct sales personnel and customer service consultants. We believe there is significant competition for personnel with the skills and technical knowledge that we require, and from time to time we have experienced and expect to continue to experience significant turnover within our sales force. To the extent we experience unusual levels of turnover within our sales force or lose particularly valuable contributors, it may limit our ability to grow revenues and may harm our sales force productivity, which could lead to revenue declines. Our ability to achieve significant revenue growth will depend, in large part, on our success in recruiting, training and retaining sufficient numbers of sales personnel and customer service consultants to support our growth. New hires require significant training and may take significant time before they achieve full productivity. Newly hired personnel may not become productive as quickly as we expect, and we may be unable to hire or retain sufficient numbers of qualified individuals in the markets where we do business or plan to do business. In addition, as we continue to grow our sales force and develop new solutions, a large percentage of our sales force will be new to our company and our solutions, which may make it more difficult to train our sales force effectively and may adversely affect our sales. If we are unable to hire and train sufficient numbers of effective sales personnel and customer service consultants or if our sales force is not successful in obtaining new customers or increasing sales to our existing customer base, our business will be adversely affected.

Our accounts receivable have increased, as has our allowance for doubtful accounts, and our business and results of operations may be adversely affected if we fail to collect amounts owed to us.

Our business depends on our ability to collect our accounts receivable from our customers. Failure to collect these accounts receivable in a timely manner may adversely affect our cash flows and results of operations. Our accounts receivable (net of allowance for doubtful accounts) were RMB599.3 million as of December 31, 2017, and declined to RMB398.0 million (US\$57.9 million) as of December 31, 2018, representing 42.7% and 43.5% of our total assets, respectively. Our allowance for doubtful accounts increased from RMB45.4 million (US\$7.0 million), or 7.1% of total accounts receivable before allowance for doubtful accounts as of December 31, 2017, to RMB62.0 million (US\$9.0 million), or 13.5% of total accounts receivable before allowance for doubtful accounts, as of December 31, 2018. Increases in our allowance for doubtful accounts may suggest that our collection of accounts receivable may be less likely than we anticipated, and that our business and results of operations may be adversely affected.

Failure to protect our customers' proprietary data could expose us to risks of liability, loss of business and reputational damage.

Our business depends upon the proper storage, transmission and processing of our customers' proprietary data, including some personally identifiable information. Security breaches, computer malware and computer hacking attacks could expose us to risks of loss of important customer information, which could result in loss of business, reputational damage, regulatory investigations and orders, litigation, indemnity obligations, damages for contract breach, penalties for violation of applicable laws or regulations and significant costs for remediation and incentives to customers or other business partners in an effort to maintain business relationships after a breach.

Cyberattacks and other malicious internet-based activity continue to increase generally. If our security measures are perceived as weak or are compromised as a result of third-party action, employee or customer error, malfeasance, stolen or fraudulently obtained log-in credentials or otherwise, our customers may curtail or stop using our solutions, our reputation could be damaged, our business could be adversely affected, and we could incur significant liability. We may be unable to anticipate or prevent techniques used to obtain unauthorized access or to sabotage systems because they change frequently and generally are not detected until after an incident has occurred. As we increase our customer base and our brand becomes more widely known and recognized, we may become more of a target for third parties seeking to compromise our security systems or gain unauthorized access to our customers' data.

Many of our contracts do not have limitation of liability provisions for a security lapse or breach, and we cannot assure you that any contractual limitations of liability provisions would be enforceable or would otherwise protect us from any liabilities or damages with respect to any particular claim. We do not have insurance to cover such liabilities and damages, and cannot be sure that insurance coverage will be available on acceptable terms, will be available in sufficient amounts to cover one or more large claims related to a security breach, or that the insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, including expansion rates, financial condition, operating results and reputation.

Our business collects and processes a large amount of data, and the improper use or disclosure of such data could harm our reputation as well as have a material adverse effect on our business and prospects.

In the course of performing data analysis for our customers, we collect and process a large quantity of personal, transactional, demographic and behavioral data. Although we do not store any personally identifiable information, we nevertheless face risks inherent in handling large volumes of data and in protecting the security of such data. In particular, we face a number of challenges relating to data about internet users who visit our customers' websites:

- 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, disclosure or security of personal information, including any requests from regulatory and government authorities relating to such data.

Any systems failure or security breach or lapse on our part that results in the release of user data could harm our reputation and brand and, consequently, our business, in addition to exposing us to potential legal liability.

Substantial uncertainties exist with respect to China's Cyber Security Law as well as any impact it may have on our business operations.

China's Cyber Security Law aims to establish stringent requirements for network operators in China, and applies to the construction, operation, maintenance and use of networks as well as the supervision and administration of cyber security. Under the Cyber Security Law, network operators, who are broadly defined as "owners and administrators of networks and network service providers," are required to take necessary actions to prevent security attacks and data loss, including data classification, backup and encryption. Furthermore, the Cyber Security Law specifies requirements on user information protection applicable to network operators, who are prohibited from disclosing without permission or selling individual information with limited exceptions. When network operators become aware of any information that is prohibited by laws and administrative regulations, they are required to immediately cease transmission of such information, and take measures such as deletion of relevant information to prevent its dissemination. Network operators are also required to maintain a record of these incidents when they occur and report them to the relevant authorities. Where any information that comes from outside the territory of China is prohibited by law or regulation, the authorities may request relevant institutions to take measures to stop the flow of such prohibited information. The Cyber Security Law also emphasizes the protection of key information infrastructure in important industries and fields, such as e-Government, and operators of such key information infrastructure will be subject to stricter security obligations. For example, an operator of key information infrastructures is generally required to store in the PRC personal information and important business data collected and generated during its business operations within the PRC, and to assess its network security and identify potential risks at least once a year.

We may be deemed a "network operator" and thus subject to the various requirements applicable to network operators under the Cyber Security Law. Furthermore, as a provider of e-Government solutions, we may be deemed an operator of key information infrastructure and subject to stricter security obligations. Compliance with the Cyber Security Law, as well as additional laws and regulations that PRC regulatory agencies may enact from time to time, may result in additional expenses to us, subject us to negative publicity which could harm our reputation with users and negatively affect the trading price of our ADSs. There are also uncertainties with respect to how the Cyber Security Law will be implemented in practice. PRC regulators have been increasingly focused on regulation in the areas of data security and data protection. We expect that these areas will receive greater attention and focus from regulators, 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. For example, in response to the heightened data security requirements from our e-Government customers, particularly in the judicial system, we have outsourced some of our software optimization and data security enhancement work to two China-based specialist companies. 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 adversely affected.

If we lose key members of our management team or are unable to attract and retain executives and employees we need to support our operations and growth, our business could be adversely affected.

Our success and future growth depend largely upon the continued services of our executive officers and other key employees in the areas of research and development, marketing, sales, services and general administrative functions. From time to time, there may be changes in our executive management team or other key employees resulting from the hiring or departure of these personnel. The loss of one or more of our executive officers, particularly our chief executive officer and chairman, Guosheng Qi, or the failure of our executive team to work with our employees and lead our company effectively, could adversely affect our business.

In addition, we must attract and retain highly qualified personnel to execute our growth plan. Competition for these personnel in Beijing, where our headquarters and the majority of our research and development personnel are located, and in other locations where we maintain offices is intense, especially for engineers experienced in designing and developing data analysis and digital intelligence solutions software and experienced sales professionals. We have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications. Many of the companies with which we compete for experienced personnel are larger and have greater resources than we have. If we hire employees from competitors or other companies, their former employers may attempt to assert that these employees have breached their legal obligations, resulting in a diversion of our time and resources. In addition, prospective and existing employees often consider the value of the equity awards they receive in connection with their employment. If the perceived value of our equity awards declines or experiences significant volatility, it may be more difficult for us to recruit and retain key employees. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be adversely affected.

The market in which we participate is intensely competitive, and if we do not compete effectively, our operating results could be adversely affected.

The market for digital intelligence solutions is rapidly evolving, fragmented and highly competitive, with relatively low barriers to entry in some segments. Our competitors fall into three primary categories:

- diversified technology companies such as Google, IBM, Microsoft and Oracle;
- bid management companies such as adSage, CubeAd, MediaV and Adobe Media Optimizer; and
- web analytics companies such as Adobe Omniture, WebTrends, Miaozen Systems, AdMaster and Sensordata.

Each of IBM, Oracle and Salesforce.com offer “marketing cloud” solutions to customers, and we believe these companies and Adobe are our primary competitors in the market for marketing automation solutions. Still in its infancy, China’s legal technology and IIoT markets are fast growing, highly fragmented and intensely competitive. We face competition from startups and other companies, such as Beijing Thunisoft and Lawyee, in the legal market, and General Electric and Siemens have developed their respective IIoT solutions.

Many of our competitors and potential competitors are larger and have greater name recognition, longer operating histories, more established customer relationships, larger budgets, significantly greater resources and more operating flexibility to bundle competing solutions and services with other software offerings at little or no perceived incremental cost, including offering them at a lower price as part of a larger sale. As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In addition, some competitors may offer solutions or services that address one or a limited number of functions at lower prices or with greater depth than our solutions. Our current and potential competitors may develop and market new technologies with comparable functionality to our solutions, and this could lead to us having to decrease prices in order to remain competitive.

With the introduction of new technologies and new market entrants, we expect competition to intensify. As we expand the scope of our solutions, we may face additional competition. Additionally, some existing and potential customers, particularly large enterprises, may elect to develop their own internal solutions. If one or more of our competitors were to merge or partner with another of our competitors, the change in the competitive landscape could also adversely affect our ability to compete effectively. If we are unable to maintain our current pricing due to the competitive pressures, our margins will be reduced and our operating results will be adversely affected. Pricing pressures and increased competition generally could result in reduced sales and margins, losses or the failure of our solutions to achieve or maintain more widespread market acceptance, any of which could adversely affect our business.

Interruptions or performance problems associated with our technology and infrastructure may adversely affect our business and operating results.

Our success depends in part on reliable customer access to our solutions and reliably high performance by our solutions. We may experience disruptions, outages and other performance problems due to a variety of factors, including downtime at leased data center facilities, infrastructure changes, introductions of new functionality, human or software errors, capacity constraints due to an overwhelming number of users accessing our solutions simultaneously, denial of service attacks or other security related incidents. In addition, the availability and performance of our solutions are important to our customers, but it may become more difficult over time to maintain and improve our performance levels, especially during peak usage times, and as our solutions become more complex and our usage volume increases. If our solutions are unavailable to customers when needed or our solutions do not perform up to expected levels for any reason, our business will be adversely affected. Addressing these problems will require us to address capacity constraints, continually upgrade our systems and continually develop our technology and network architecture, which will increase our costs and may adversely affect our operating results.

Software errors, defects or disruptions in our solutions could diminish demand for our solutions, adversely affect our financial results and subject us to liability.

Our customers depend on our solutions for important aspects of their businesses, and any errors, defects or disruptions to our solutions or other performance problems may damage our customers' businesses and could hurt our brand and reputation. We provide regular updates, which may contain undetected errors when first introduced or released. In the past, we have discovered software errors, failures, vulnerabilities and bugs in our solutions after they have been released, and additional errors in our existing solutions may be detected in the future. Real or perceived errors, failures or bugs in our solutions could result in negative publicity, loss of or delay in market acceptance of our solutions, loss of competitive position, delay of payment to us, lower renewal rates or claims by customers for losses sustained by them. In such an event, we may be required, or may choose for customer relations reasons or otherwise, to expend additional resources in order to help correct the problem. As a result, we could lose future sales and our reputation and our brand could be adversely affected. In addition, we currently do not and may not in the future carry insurance sufficient to compensate us for any losses that may result from claims arising from defects or disruptions in our solutions.

Any failure to protect our intellectual property rights could impair our ability to protect our proprietary technology.

Our success depends to a significant degree on our ability to protect our proprietary technology. We will not be able to protect our intellectual property if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property. If we fail to protect our intellectual property rights adequately, our competitors may gain access to our technology and our business could be adversely affected.

We rely on a combination of patents, trademarks, trade secrets, copyrights, service marks, contractual restrictions and other intellectual property laws and confidentiality procedures to establish and protect our proprietary rights. However, the steps we take to protect our intellectual property may be inadequate. We may be unable to obtain any patent protection for our technology subject to the pending patent applications. Any patents, trademarks or other intellectual property rights that we obtain may be challenged by others or invalidated through administrative process or litigation. We enter into confidentiality and invention assignment agreements with our employees and consultants and enter into confidentiality agreements with other parties. There is no assurance that these agreements will be effective in controlling access to and distribution of our proprietary information.

Furthermore, legal standards relating to the validity, enforceability and scope of protection of intellectual property rights are uncertain. The laws of the PRC are not as protective of intellectual property rights as those in the United States, and legal procedures for enforcement of intellectual property rights may be inadequate in China. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our intellectual property.

We may be required to spend significant resources in monitoring and protecting our intellectual property rights. We may be required to pursue litigation to protect our intellectual property rights and to protect our trade secrets. Litigation brought to protect and enforce our intellectual property rights could be costly, time-consuming and distracting to management, and it could also 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. Our failure 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 solutions, impair the functionality of our solutions, delay introductions of new solutions, result in our substituting less effective or more costly technologies into our solutions or injure our reputation.

We may be sued by third parties for alleged infringement of their proprietary rights.

There are considerable patent, copyright, trademark, trade secret and other intellectual property development activities in our industry. Our success depends in part on not infringing on the intellectual property rights of others. From time to time, our competitors or other third parties may claim that we are infringing upon their intellectual property rights, and we may be found to be infringing upon such rights. Any claims or litigation, regardless of merit, could cause us to incur significant expenses and, if successfully asserted against us, could require that we pay substantial damages or ongoing royalty payments, prevent us from offering our solutions or require that we comply with other unfavorable terms.

Even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources spent in resolving them, could divert the resources of our management and adversely affect our business and operating results. We expect that the occurrence of infringement claims is likely to grow as the market for digital intelligence solutions grows. Accordingly, our exposure to damages resulting from infringement claims could increase and this could further divert our financial and management resources.

Our use of open source software could negatively affect our ability to sell our solutions and subject us to possible litigation.

We use open source software in our solutions and expect to continue to use open source software in the future. We may face claims from others claiming ownership of, or seeking to enforce the terms of, an open source license, including by demanding release of the open source software, derivative works or our proprietary source code that was developed using such software. These claims could also result in litigation, require us to purchase a costly license or require us to devote additional research and development resources to change our technologies, any of which would have a negative effect on our business and operating results. In addition, if the license terms for the open source software we utilize change, we may be forced to reengineer or discontinue our solutions or incur additional costs. We cannot be certain that we have incorporated open source software in our solutions in a manner that is consistent with our policies.

Natural disasters and other events beyond our control could adversely affect our business.

Natural disasters or other catastrophic events may cause damage or disruption to our operations, international commerce and the global economy, and thus could have a strong negative effect on us. Our business operations are subject to interruption by natural disasters, fire, power shortages, pandemics and other events beyond our control. We rely on our network and third-party data center infrastructure, customers' internal technology systems and our website for our development, marketing, operational support, hosted solutions and sales activities. Although we maintain crisis management and disaster response plans, in the event of a major earthquake, hurricane or other catastrophic event such as fire, power loss, telecommunications failure, cyber-attack, war or terrorism, we may be unable to continue operations without interruption and may suffer lost revenues, delays in developing important software, reputational harm, breaches of data security and loss of critical data, all of which could have an adverse effect on our results of operations.

Risks Relating to Our Corporate Structure

We conduct our businesses in China by means of contractual arrangements through a variable interest entity and its subsidiaries. If the PRC government determines that such arrangements do not comply with applicable laws and regulations, our business could be materially adversely affected.

PRC law restricts foreign ownership of companies that engage in internet, market survey and other related businesses. Foreign ownership of an internet content provider may not exceed 50% and the primary foreign investor of such provider must have a record of good performance and operating experience in managing internet content service.

We are a company registered in the Cayman Islands and Dissector (Beijing) Technology Co., Ltd., our wholly-owned PRC subsidiary that we refer to as the WFOE, is considered a foreign-invested enterprise. We conduct our business in China through Gridsum Holding (Beijing) Co., Ltd., or Gridsum PRC Holding, which is our variable interest entity, or VIE, and its subsidiaries, based on a series of contractual arrangements among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding. The shareholders of Gridsum PRC Holding are our founders, Guosheng Qi and Guofa Yu, and a company owned by Guosheng Qi and other key employees. As a result, we control Gridsum PRC Holding and its subsidiaries, and we consolidate their operating results in our financial statements under U.S. GAAP. The subsidiaries of Gridsum PRC Holding hold licenses and key assets that are essential for our business operations

There are substantial uncertainties regarding the interpretation and application of PRC laws and regulations. If the contractual arrangements among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding are determined to be illegal or invalid, the relevant governmental authorities would have broad discretion in dealing with such violation, including revoking our business and operating licenses, requiring us to discontinue or restrict operations, restricting our rights to collect revenues, confiscating our income, requiring us to restructure our ownership structure or operations, imposing additional conditions or requirements with which we may not be able to comply or levying fines. These actions could cause significant disruption to our business operations and may materially adversely affect our business, financial condition and operating results.

We rely on contractual arrangements with Gridsum PRC Holding and its shareholders for our operations in China, which may not be as effective in providing operational control as direct ownership.

We rely on contractual arrangements with Gridsum PRC Holding, in which we have no ownership interest, and the shareholders of Gridsum PRC Holding to conduct our business. These contractual arrangements are intended to provide us with effective control over Gridsum PRC Holding and its subsidiaries and allow us to obtain economic benefits from them, but may not be as effective as direct ownership. If Gridsum PRC Holding or its shareholders fail to perform their respective obligations under the contractual arrangements, we may incur substantial costs and expend substantial resources to enforce our rights.

These contractual arrangements are governed by and interpreted in accordance with PRC law, and disputes will be resolved through arbitration in China. There are very few precedents and little official guidance as to how contractual arrangements in the context of a variable interest entity should be interpreted or enforced under PRC law. There remain significant uncertainties regarding the ultimate outcome of arbitration should legal action become necessary. The relevant PRC arbitration panel may conclude that our contractual arrangements violate PRC law or are otherwise unenforceable. In addition, arbitration awards are final and can only be enforced in PRC courts through arbitration award recognition proceedings, which could cause additional expenses and delays. In the event that we are unable to enforce these contractual arrangements or we experience significant delays or other obstacles in the process of enforcing these contractual arrangements, we may not be able to exert effective control over Gridsum PRC Holding, and may lose control over the assets owned by it and its subsidiaries. As a result, we may be unable to consolidate Gridsum PRC Holding and its subsidiaries in our consolidated financial statements, our ability to conduct our business may be adversely affected, and our business operations could be severely disrupted.

Some of our executive officers and directors are substantial shareholders of the Company, and they may encounter conflicts of interest in such roles.

Substantial shareholders of the Company include some of our executive officers and members of our board of directors, who may encounter conflicts of interest between that beneficial ownership and their roles as executive officers and members of our board of directors. We rely on these individuals to abide by the laws of the Cayman Islands, which provide that directors and officers owe a fiduciary duty to our company to act in good faith and in the best interest of our company and not to use their positions for personal gain. Processes designed to avert or protect against such conflicts may be cumbersome, time-consuming and disruptive to our operations.

Contractual arrangements with our consolidated affiliated entities may cause adverse tax consequences for us.

Under applicable PRC tax laws and regulations, arrangements and transactions among related parties may be subject to audit or scrutiny by the PRC tax authorities. We could face adverse tax consequences if the PRC tax authorities determine that the contractual arrangements among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding are not on an arm's length basis and therefore constitute favorable transfer pricing. Such a finding could require Gridsum PRC Holding to adjust its taxable income upward without necessarily reducing the tax expenses of the WFOE, and subject it to fees and penalties for under-payment of taxes. As a result, our consolidated operating results could be adversely affected.

We may lose the ability to use assets held by Gridsum PRC Holding or its subsidiaries that are important to the operation of our business if any of them goes bankrupt or becomes subject to a dissolution or liquidation proceeding.

Gridsum PRC Holding and its subsidiaries hold assets and perform functions that are important to the operation of our business. In particular, Gridsum PRC Holding and its subsidiaries hold almost all patents for our proprietary technology, domain names, trademarks, copyrights and other intellectual property rights. If Gridsum PRC Holding or any of its subsidiaries enters into bankruptcy or undergoes a voluntary or involuntary liquidation proceeding, all or part of its assets will become subject to liens or rights of third-party creditors. As a result, we may be unable to continue some or all of our business operations, which could materially adversely affect our business, financial condition and operating results.

Substantial uncertainty exists with respect to the interpretation and implementation of the PRC 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 National People's Congress approved the Foreign Investment Law of the People's Republic of China, or the Foreign Investment Law, which will come into effect on January 1, 2020, and replace 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-Owned Enterprise Law, together with their implementation rules and ancillary regulations.

The Foreign Investment Law seeks to rationalize the PRC's regulation of foreign investment in line with international practice. However, since it is relatively new, uncertainties exist in relation to its interpretation and implementation. For instance, under the Foreign Investment Law, "foreign investment" refers to the investment activities directly or indirectly conducted by foreign individuals, enterprises or other entities in China. Like many PRC-based companies, we have adopted the VIE structure to obtain necessary licenses and permits in the industries that are currently subject to foreign investment restrictions in China. Though the Foreign Investment Law does not explicitly classify contractual arrangements as a form of foreign investment, there is no assurance that foreign investment via contractual arrangement would not be interpreted as a type of indirect foreign investment activities under the definition in the future. In addition, the definition contains a catch-all provision that includes investments made by foreign investors through means stipulated in laws or administrative regulations or other methods prescribed by the State Council. Therefore, it still leaves leeway for future laws, administrative regulations or provisions promulgated by the State Council to provide for contractual arrangements as a form of foreign investment. In any of these cases, it will be uncertain whether our contractual arrangements with our consolidated affiliated entities will be deemed to be in violation of the market access requirements for foreign investment under the PRC laws and regulations. Furthermore, if future laws, administrative regulations or provisions prescribed by the State Council mandate further actions to be taken by companies with respect to existing contractual arrangements, we may face substantial uncertainties as to whether we can complete such actions in a timely manner, or at all.

The Foreign Investment Law also specifies that foreign investments shall be conducted in line with the "negative list" to be issued or approved by the State Council, which restricts or prohibits a foreign-invested enterprise's (such as the WFOE) operations of business in industries to be specified from time to time. It is uncertain whether the business our consolidated affiliated entities operate, such as the Gridsum Big Data Platform and value-added telecommunication services, will be subject to the foreign investment restrictions or prohibitions under the "negative list."

There is no guarantee that our contractual arrangements with our consolidated affiliated entities, or the business they operate, will be in compliance with the Foreign Investment Law or any future laws, administrative regulations or provisions prescribed by the State Council. If we fail to comply with any such laws, regulations or provisions, our corporate structure and business operations may be materially and adversely affected.

Risks Relating to Doing Business in China

Adverse changes in economic and political policies of the PRC government could have a material adverse effect on overall economic growth in China, which could materially adversely affect our business.

Substantially all of our operations are conducted in China and substantially all of our revenues are generated in China. Accordingly, our operating results, financial condition and prospects are influenced by the economic, political and legal conditions and developments in China. China's economy differs from the economies of most developed countries in many respects, including the amount of government involvement in the economy, the general level of economic development, growth rates, foreign exchange control and allocation of resources. The PRC government exercises significant control over China's economic growth through strategically allocating resources, controlling the payment of foreign currency-denominated obligations, setting monetary policies and providing preferential treatment to particular industries or enterprises. Any adverse changes in the policies of the Chinese government or in PRC laws and regulations could have a material adverse effect on the overall economic growth of China, result in decreased demand for our solutions and adversely affect our business and operating results. In addition, our revenues are dependent on the number of our customers and the scope of the solutions used by our customers. Historically, during economic downturns there have been reductions in spending on digital intelligence as well as pressure for extended billing terms and other financial concessions. These conditions affect the level of information technology spending and could adversely affect our customers' ability or willingness to purchase our solutions, delay prospective customers' purchasing decisions, reduce the value or duration of their contracts or affect renewal rates, all of which could adversely affect our operating results.

Uncertainties in the interpretation and enforcement of PRC laws and regulations could limit the legal protections available to our shareholders and us.

The PRC legal system is a civil law system based on written statutes. Unlike the common law system, prior court decisions may be cited for reference but have limited precedential value. In 1979, the PRC government began to promulgate a comprehensive system of laws and regulations governing economic matters. Since then, the legislation has enhanced the protections of foreign investments in China. However, China has not developed a fully integrated legal system, and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. The interpretation and enforcement of these laws and regulations involve uncertainties. Since the PRC administrative authorities and courts have significant discretion in interpreting and implementing statutory and contractual terms, it may be difficult to evaluate the outcome of administrative and court proceedings and the level of legal protection available to our shareholders and us.

Furthermore, the PRC legal system is partly based on government policies and internal rules, some of which are not published in a timely manner or at all, and some of which may have retroactive effects. As a result, we may not be aware of our violation of any of these policies or rules until sometime after the violation. Such uncertainties, including the uncertainty over the scope and effect of our contractual, property (including intellectual property) and procedural rights could materially adversely affect our business and impede our ability to continue our operations.

The PRC regulations on offshore holding companies providing loans to and making direct investments in PRC entities may delay or prevent us from making capital contributions or loans to our PRC subsidiary.

From time to time, we may need to finance and transfer funds to the WFOE by means of shareholder loans or capital contributions to fund our business operations in the PRC. According to a notice issued by the People's Bank of China regarding foreign debt on January 12, 2017, the maximum amount of foreign debt that the WFOE is allowed to borrow is two times of its net assets. Pursuant to this notice and other PRC laws and regulations regarding foreign debt, within a one-year grace period starting from January 12, 2017, the statutory limit for the total amount of foreign debt of a foreign-invested company, which is subject to its own election, is either the difference between the amount of total investment and the amount of registered capital, or two times of their respective net assets. Although the one-year grace period has expired, the abovementioned statutory limit is still applicable to foreign-invested company in practice. Any loans we make to the WFOE cannot exceed statutory limits, and must be registered with the State Administration of Foreign Exchange, or SAFE, or its local counterparts. Any capital contributions we make to the WFOE must be approved by appropriate governmental agencies. We may not be able to obtain these approvals on a timely basis, if at all. If we fail to obtain such approvals, our ability to provide capital contributions or loans to the WFOE in a timely manner may be adversely affected, which could materially adversely affect our liquidity and our ability to fund and expand our business.

Moreover, the registered capital of the WFOE settled in RMB converted from foreign currencies may only be used within the business scope registered with the applicable governmental authority and may not be used to grant loans through entrustment arrangements with a bank, repay inter-company loans or repay bank loans that have been transferred to a third party. This may significantly limit our ability to fund our business operations in China.

The failure of our PRC-resident beneficial owners to comply with PRC foreign exchange regulations may subject the WFOE to liability or penalties, limit our ability to inject capital into the WFOE or limit the WFOE's ability to distribute profits.

On July 4, 2014, SAFE promulgated the Circular on Relevant Issues Concerning Foreign Exchange Control on Domestic Residents' Outbound Investment and Financing and Roundtrip Investment through Special Purpose Vehicles, or SAFE Circular 37. SAFE Circular 37 requires a PRC resident to make SAFE registration prior to contributing assets or interests to an overseas special purpose vehicle, or SPV, that is directly established or indirectly controlled by such PRC resident for the purpose of conducting investment or financing. SAFE Circular 37 further requires the PRC resident to make amendment registrations in the event of any major changes or events with respect to the SPV, such as increase or decrease of capital contributed by PRC individuals, share transfer or exchange, merger or division. In the event that a PRC-resident shareholder holding interests in a SPV fails to complete the required SAFE Circular 37 registration, the PRC subsidiary of the SPV may be prohibited from making profit distributions to its offshore parent and from carrying out subsequent cross-border foreign exchange activities, and the SPV may be restricted in its ability to contribute additional capital into its PRC subsidiary. Moreover, failure to comply with the various SAFE registration requirements could result in liability under the PRC law for evading foreign exchange controls.

The beneficial owners of Generation Gospel Limited, Garden Enterprises Ltd. and Fairy Spirit Limited who are PRC residents have completed initial registrations under SAFE Circular 37 with the local counterparts of SAFE relating to their investments in us. However, we may not be aware of the identities of all of our beneficial owners who are PRC residents. We do not have control over our beneficial owners and cannot assure you that all of our PRC-resident beneficial owners have complied and will comply with SAFE Circular 37 and subsequent implementation rules. The failure of our existing or future beneficial owners who are PRC residents to comply with the registration requirements and procedures set forth in SAFE Circular 37 and subsequent implementation rules may subject the WFOE to fines and legal sanctions, limit our ability to contribute additional capital to the WFOE and limit the WFOE's ability to distribute dividends or make other distributions to our company, which could adversely affect our business and prospects.

We and our Hong Kong subsidiary may be classified as a “PRC resident enterprise” for PRC enterprise income tax purposes, which would likely result in unfavorable tax consequences to us and our non-PRC shareholders.

The PRC Enterprise Income Tax Law, or the EIT Law, as most recently amended on December 29, 2018, provides that an enterprise established outside China whose “de facto management body” is located in China is considered a “PRC resident enterprise” and will generally be subject to the uniform 25% PRC enterprise income tax on its global income. Under the implementation rules of the EIT Law, “de facto management body” is defined as the organizational body which effectively manages and controls the production and business operation, personnel, accounting, properties and other aspects of operations of an enterprise.

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 Enterprises on the Basis of De Facto Management Bodies, or Circular 82, which further interprets the application of the EIT Law and its implementation on non-PRC enterprise or group controlled by a PRC enterprise or a PRC enterprise group. According to Circular 82, an overseas incorporated enterprise controlled by PRC enterprises or PRC enterprise groups is considered a PRC resident enterprise if all of the following conditions are met: (i) the senior management and core management departments in charge of daily operations are located mainly in the PRC; (ii) financial and human resources decisions are subject to determination or approval by persons or bodies in the PRC; (iii) major assets, accounting books, company seals and minutes and files of board and shareholders' meetings are located or kept in the PRC; and (iv) at least half of the enterprise's directors or senior management with voting rights habitually reside in the PRC. Although these standards only apply to offshore enterprises that are controlled by PRC enterprises or PRC enterprise groups, such standards may reflect the general view of the SAT in determining the tax residence of overseas incorporated enterprises.

If the PRC tax authorities determine that our company or any of our non-PRC subsidiaries is a PRC resident enterprise for PRC enterprise income tax purposes, we or any such non-PRC subsidiary could be subject to PRC enterprise income tax at a rate of 25% on our or its global income, which could materially reduce our net income. In addition, we will also be subject to PRC enterprise income tax reporting obligations. Furthermore, if the PRC tax authorities determine that our company is a PRC resident enterprise, dividends paid by us and gains realized on the sale or other disposition of the ADSs or our ordinary shares may be subject to PRC tax, at a rate of 10% if the shareholder is a non-PRC resident enterprise or 20% in the case of a non-PRC individual shareholder (in each case, subject to the provisions of any applicable tax treaty). Such tax may materially reduce the value of the ADSs.

Any limitation on the ability of the WFOE to make distributions to us, or the tax implications thereof, could have a material adverse effect on our business or financial condition.

We are a holding company, and we rely principally on dividends and other distributions from the WFOE for our cash needs, including the funds necessary to pay dividends to our shareholders or to service any debt we may incur. Current PRC regulations permit the WFOE to pay dividends only out of its accumulated profits, if any, determined in accordance with PRC accounting standards and regulations. In addition, the WFOE is required to set aside at least 10% of its after tax profits each year, if any, to fund statutory reserve funds until the aggregate amount of such reserve funds reaches 50% of its registered capital. Apart from these reserves, the WFOE may allocate a discretionary portion of its after-tax profits to staff welfare and bonus funds at its discretion. These reserves and funds are not distributable as cash dividends. We cannot assure you that the WFOE will generate sufficient earnings and cash flows in the near future to pay dividends or otherwise distribute sufficient funds to enable us to meet our obligations, pay interest and expenses or declare dividends.

Since 2016, PRC governmental authorities began imposing more stringent restrictions on outbound capital flows, including through regulations that tightened the authentication and compliance verification of cross-border transactions and cross-border capital flow, such as by requiring banks to verify board resolutions, tax filing forms and audited financial statements before wiring foreign invested company's foreign exchange dividend distribution of over US\$50,000. See "Item 4. Information on the Company—B. Business Overview—Regulation—Regulations on Foreign Exchange." Any restrictions on outbound capital flows may limit our ability to utilize revenue generated in the PRC to pay dividends in foreign currencies to our shareholders, including holders of our ADSs, or to fund our business activities or service any debt we may incur outside of the PRC.

Distributions made by a PRC company to its offshore parent are generally subject to a 10% withholding tax under the EIT Law. Pursuant to the EIT Law and the Arrangement Between the PRC and the Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion With Respect to Taxes on Income, the withholding tax rate on dividends paid by the WFOE to Gridsum HK would generally be reduced to 5%, provided that Gridsum HK is the beneficial owner of the income sourced from China. However, on February 3, 2018, SAT promulgated the Announcement Regarding the Beneficial Owners in Tax Treaties, which provides that a comprehensive analysis should be carried out in the determination of a beneficial owner, and certain factors would put Gridsum HK in an unfavorable position in such determination, including but not limited to its non-engagement in substantive business activities. If Gridsum HK is not regarded as a beneficial owner, it will not be entitled to the 5% withholding tax rate with respect to any dividends or distributions made by the WFOE, which would be subject to 10% withholding tax and would reduce our ability to make distributions or dividends to holders of ADSs.

Governmental control of currency conversion may limit our ability to pay dividends and other obligations and affect the value of your investment.

The PRC government imposes controls on the convertibility of the RMB into foreign currencies and the remittance of currency out of China. We receive substantially all of our revenues in RMB, and substantially all of our cash inflows and outflows are denominated in RMB. We primarily rely on dividend payments from the WFOE to fund any cash and financing requirements we may have.

Under existing PRC foreign exchange regulations, payments of current account items, including profit distributions, interest payments, and trade and service-related foreign exchange transactions, can be made in foreign currencies without prior SAFE approval as long as routine procedural requirements are fulfilled. Therefore, the WFOE is allowed to pay dividends in foreign currency to us without pre-approval from SAFE. However, approval from or registration with competent government authorities is required where the RMB is to be converted into foreign currency and remitted out of China to pay capital account items such as the repayment of loans denominated in foreign currencies. Also, the PRC government may at its discretion restrict access to foreign currencies for current account items in the future. If the foreign exchange control system in China prevents us from obtaining sufficient foreign currencies to satisfy our foreign currency demands, we may not be able to pay dividends in foreign currencies to our shareholders, including holders of the ADSs.

Failure to comply with PRC regulations regarding the registration requirements for share option plans may subject PRC plan participants or us to fines and other legal or administrative sanctions.

Our employees and directors who are PRC residents and who participate in our equity incentive plans are required to register with SAFE and complete other procedures through a domestic qualified agent, and to retain an overseas entrusted institution to handle matters in connection with their exercise or sale of share options. In addition, the PRC agent is required to make amendment registrations with respect to the share incentive plan if there is any material change to the share incentive plan, the PRC agent or the overseas entrusted institution or other material changes. Failure to comply with such requirements will subject us or our PRC resident option holders to fines and other legal or administrative sanctions. To date, we have completed the SAFE foreign exchange registration with respect to our share incentive plans, but there can be no assurance that we will be able to continue to do so in the future, which would make it more difficult for us to incentivize our employees.

Furthermore, our employees working in the PRC who exercise share options, or whose restricted shares or restricted share units, or RSUs, vest, will be subject to PRC individual income tax. Our PRC subsidiary and controlled affiliated entities are required to file documents related to employee share options, restricted shares or RSUs with the relevant tax authorities and to withhold individual income taxes of those employees related to their share options, restricted shares or RSUs. If the employees fail to pay, and our PRC subsidiary and controlled affiliated entities fail to withhold, such PRC individual income taxes, our PRC subsidiary and controlled affiliated entities may face sanctions imposed by the PRC tax authorities.

Fluctuation in the value of the RMB may have a material adverse effect on the value of your investment.

The value of the RMB against the U.S. Dollar and other currencies is affected by changes in China's political and economic conditions and China's foreign exchange policies. In 2017, the value of the RMB appreciated against the U.S. Dollar by approximately 6.7%. From the end of 2017 through the end of 2018, the value of the RMB depreciated by approximately 5.4% against the U.S. Dollar. There is no guarantee that the value of the RMB against the U.S. Dollar will not fluctuate significantly in the future.

Substantially all of our revenues and costs are denominated in RMB, and substantially all of our financial assets are also denominated in RMB. Any significant depreciation of the RMB may materially adversely affect the value of, and any dividends payable on, our ADSs in U.S. Dollars. To the extent that we need to convert U.S. Dollars into RMB, appreciation of the RMB against the U.S. Dollar would reduce the RMB amount we would receive from the conversion. Conversely, if we decide to convert RMB into U.S. Dollars, appreciation of the U.S. Dollar against the RMB would reduce the U.S. Dollar amount available to us.

Any change in the preferential tax treatment we enjoy in the PRC may materially adversely impact our net income.

Some of our consolidated affiliated entities have been granted the status of "high and new technology enterprise" by PRC government agencies. As a result, the income tax rate of these entities is reduced to a preferential rate of 15% for three-year terms that expire starting in 2019. The government agencies may decide not to renew the "high and new technology enterprise" status of these entities after the term expires, and therefore we cannot assure you that the preferential tax treatment will continue. The discontinuation of such preferential tax treatment could increase our tax expenses and adversely affect our net income.

We may have to register our encryption software with Chinese regulatory authorities, and if they request that we change our encryption software, our business operations could be disrupted as we develop or license replacement software.

Foreign and domestic companies operating in China are required to seek state approval for the commercial encryption products they use. Companies operating in China are allowed to use only commercial cipher code products approved by this authority and are prohibited from using self-developed or imported cipher code products without approval. In addition, all cipher code products shall be produced by those producers appointed and approved by this authority. Because applicable regulations do not specify what constitutes a cipher code product, we are unsure as to whether or how they apply to us and the encryption software we utilize. We may be required to register or apply for permits for our current or future encryption software. If PRC authorities request that we register our encryption software or change our current encryption software to an approved cipher code product produced by an appointed producer, it could disrupt our business operations.

Risks Relating to Our Ordinary Shares and ADSs

Uncertainty concerning the status of a previously-announced proposed going private transaction may adversely affect our business and the market price of the ADSs.

In May 2018, our board of directors received a preliminary non-binding proposal letter, from FutureX Capital Limited, or FutureX, to acquire all of our outstanding ordinary shares not already owned by it in a going private transaction. Our board of directors formed a special committee consisting of independent directors to evaluate the proposal and any other alternative transactions.

In order for the proposed going private transaction to be consummated, we must first enter into a definitive merger agreement that is approved by our board of directors and later by our shareholders. If the going private transaction is consummated, it would cause us to be delisted from The Nasdaq Stock Market and become a private company, in which event our shareholders and holders of the ADSs, other than those in the approved buyer group, would not be able to participate in our future growth, if any. If the proposed going private transaction is withdrawn, is not approved by either our board of directors or our shareholders, or is for any other reason not consummated, it could adversely affect the market price of our ADSs. There can be no assurance that the proposed going private transaction will continue to be pursued, approved or consummated.

Whether consummated or not, the proposed going private transaction risks diverting management focus, employee attention and other resources from strategic opportunities and from operational matters. Also, as the going private transaction develops, certain events such as the execution of any merger agreement, completion of the merger or an amendment to or termination of any merger agreement, may increase the volatility of the trading price of the ADSs. Furthermore, we could be subject to potential lawsuits in connection with the proposed going private transaction.

Provisions of the FutureX Convertible Note could discourage an acquisition of us by a third party.

Provisions of the FutureX Convertible Note could make it more difficult, or more expensive, for us to be acquired by a third party. For example, holders of the FutureX Convertible Note have the right to require us to repurchase for cash the entire FutureX Convertible Note at a repurchase price equal to 100% of the principal amount plus accrued and unpaid interest upon the occurrence of certain fundamental changes of our company, including an acquisition. Such “fundamental changes” include, among other things, (1) any person or group gaining control of our company, (2) our company merging with or into another company or disposing of substantially all of our assets, (3) any recapitalization, reclassification or change of our ordinary shares or the ADSs as a result of which these securities would be converted into, or exchanged for, stock, other securities, property or assets, or (4) adoption of a plan to dissolve or liquidate our company or any of our significant subsidiaries.

The market price for our ADSs is volatile, which could result in substantial losses to our shareholders.

The trading price of our ADSs has been and is likely to continue to be volatile, fluctuating 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 with business operations located mainly in China that have listed their securities in the United States. 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. The trading performances of other Chinese companies’ securities after their initial public offerings may affect the attitudes of investors toward Chinese companies listed in the United States, which consequently may impact the trading performance of the ADSs, regardless of our actual operating performance. In addition, any negative news or perceptions about inadequate corporate governance practices or fraudulent accounting, corporate structure or matters of other Chinese companies may also negatively affect the attitudes of investors towards Chinese companies in general, including us, regardless of whether we have conducted any inappropriate activities. In addition, securities markets may from time to time experience significant price and volume fluctuations that are not related to our operating performance, which may have a material adverse effect on the market price of our ADSs.

If securities or industry analysts do not publish research or reports about our business, or if they publish inaccurate or unfavorable research about us, the market price and trading volume of our ADSs could decline.

The trading market for our ADSs depends in part on the research and reports that securities analysts publish about our business. If analysts do not establish and maintain adequate research coverage, or if analysts downgrade our ADSs or publish inaccurate or unfavorable research about our business, the market price for our ADSs would likely decline. In 2018, a number of securities analysts terminated or suspended coverage of our company, causing us to lose visibility among investors in the financial markets.

Substantial future sales of our ADSs in the public market, or the perception that these sales could occur, could cause the price of our ADSs to decline.

As of March 31, 2019, we had 4,543,461 Class A ordinary shares and 29,759,249 Class B ordinary shares outstanding, including 17,953,700 ADSs that were freely transferable. The remaining 16,349,010 ordinary shares outstanding are available for re-sale subject to applicable restrictions under Rule 144 under the Securities Act.

Substantial future issuances and sales of our ordinary shares by us or re-sales of our ordinary shares and ADSs, or the perception that these sales could occur, could cause the market price of our ADSs to decline. Certain holders of our Class B ordinary shares, including the investors in our March 2019 private placement, have the right to require us to register under the Securities Act the re-sale of their shares. Additionally, in connection with our offer and sale of the FutureX Convertible Note, we agreed to register under the Securities Act the offer and sale of the Class B ordinary shares issuable upon conversion of the FutureX Convertible Note no later than August 2019, and granted customary piggyback registration rights. As of March 31, 2019, 6,153,846 Class B ordinary shares were issuable upon conversion of the FutureX Convertible Note. Registration of any of these ordinary shares under the Securities Act would result in ADSs representing these shares being freely tradable, which could cause the price of our ADSs to decline.

Our dual-class ordinary shares structure limits the ability of holders of our Class B ordinary shares and ADSs to influence corporate matters and could discourage others from pursuing change of control transactions that such holders may view as beneficial.

Our ordinary shares are divided into Class A and Class B ordinary shares. Holders of Class A ordinary shares are entitled to ten votes per share, and holders of Class B ordinary shares are entitled to one vote per share. Generation Gospel Limited, which is owned and controlled by our chief executive officer, held all 4,543,461 Class A ordinary shares issued and outstanding as of March 31, 2019.

Due to these disparate voting powers, our chief executive officer beneficially held an aggregate of 66.5% of the voting power of our outstanding ordinary shares as of March 31, 2019, and effectively controls or has considerable influence over matters requiring shareholder approval, including election of directors and significant corporate transactions, such as a merger or sale of our company or our assets. This concentrated control limits the ability of holds of our Class B ordinary shares and ADSs to influence corporate matters and could discourage other parties from pursuing any potential merger, takeover or other change of control transactions that such holders may view as beneficial.

Because we do not expect to pay dividends in the foreseeable future, investors are dependent on price appreciation of our ADSs for return on their investment.

We currently intend to retain most, if not all, of our available funds and any future earnings to fund the development and growth of our business. As a result, we do not expect to pay any cash dividends in the foreseeable future. Therefore, investors should not rely on an investment in our ADSs as a source for any future dividend income. Our Board of Directors has complete discretion as to whether to distribute dividends. Even if our Board decides to declare and pay dividends, the timing, amount and form of future dividends, if any, will depend on, among other things, our future operating results and cash flow, our capital requirements and surplus, the amount of distributions, if any, received by us from our subsidiaries, our financial condition, contractual restrictions and other factors deemed relevant by our Board. Accordingly, the return on investment in our ADSs, if any, will likely depend entirely upon any future price appreciation of the ADSs. There is no guarantee that our ADSs will appreciate in value or even maintain the price at which the holders of our ADSs purchased the ADSs. The holders of our ADSs may not realize a return on their investment in our ADSs and the holders of our ADSs may even lose their entire investment in the ADSs.

Holders of our ADSs may not receive dividends or other distributions on our ADSs and the holders of our ADSs may not receive any value for them, if it is illegal or impractical to make them available to the holders of our ADSs.

The depository of our ADSs has agreed to pay to holders of our ADSs the cash dividends or other distributions it or the custodian receives on Class B ordinary shares or other deposited securities underlying the ADSs, after deducting its fees and expenses. The holders of our ADSs will receive these distributions in proportion to the number of Class B ordinary shares our ADSs represent. However, the depository 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 depository 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 depository may determine not to distribute such property. We have no obligation to register under U.S. securities laws any ADSs, ordinary 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, ordinary shares, rights or anything else to holders of ADSs. This means that the holders of our ADSs may not receive distributions we make on our ordinary shares or any value for them if it is illegal or impractical for us to make them available to the holders of our ADSs. These restrictions may cause a material decline in the value of the ADSs.

Holders of our ADSs may experience dilution of their holdings due to inability to participate in rights offerings.

We may, from time to time, distribute rights to our shareholders, including rights to acquire securities. Under the deposit agreement, the depository will not distribute rights to holders of our ADSs unless the distribution and sale of rights and the securities to which these rights relate are either exempt from registration under the Securities Act with respect to all holders of our ADSs or are registered under the provisions of the Securities Act. The depository may, but is not required to, attempt to sell these undistributed rights to third parties and may allow the rights to lapse. We may be unable to establish an exemption from registration under the Securities Act, and we are under no obligation to file a registration statement with respect to these rights or underlying securities or to endeavor to have a registration statement declared effective. Accordingly, holders of our ADSs may be unable to participate in our rights offerings and may experience dilution of their holdings as a result.

Holders of our ADSs may be subject to limitations on transfer of the ADSs.

Our 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, on weekends and on 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, at any time if we or the depositary thinks 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.

Holders of our ADSs may have fewer rights than holders of our ordinary shares and must act through the depositary to exercise those rights.

Holders of our ADSs do not have the same rights of our shareholders and may only exercise the voting rights with respect to the underlying Class B ordinary shares in accordance with the provisions of the deposit agreement. Under our current memorandum and articles of association, the minimum notice period required to convene a general meeting is 14 days. When a general meeting is convened, the holders of our ADSs may not receive sufficient notice of a shareholders' meeting to permit them to withdraw their Class B ordinary shares to allow them to cast their vote with respect to any specific matter. In addition, the depositary and its agents may not be able to send voting instructions to them or carry out their voting instructions in a timely manner. We will make all reasonable efforts to cause the depositary to extend voting rights to them in a timely manner, but we cannot assure the holders of our ADSs that they will receive the voting materials in time to ensure that they can instruct the depositary to vote the ADSs. Furthermore, the depositary and its agents will not be responsible for any failure to carry out any instructions to vote, for the manner in which any vote is cast or for the effect of any such vote. As a result, the holders of our ADSs may not be able to exercise their right to vote and they may lack recourse if our ADSs are not voted as they requested. In addition, in their capacity as an ADS holder, they will not be able to call a shareholders' meeting.

The depositary for our ADSs will give us a discretionary proxy to vote the Class B ordinary shares underlying their ADSs if the holders of our ADSs do not vote at shareholders' meetings, except in limited circumstances, which could adversely affect their interests.

Under the deposit agreement for the ADSs, if the holders of our ADSs do not vote, the depositary will give us a discretionary proxy to vote the Class B ordinary shares underlying their 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 the holders of our ADSs do not vote at shareholders' meetings, they cannot prevent the Class B ordinary shares underlying their 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 ordinary shares are not subject to this discretionary proxy.

Holders of our ADSs may face difficulties in protecting their interests, and their ability to protect their rights through the U.S. federal courts may be limited because we are incorporated under Cayman Islands law, we conduct substantially all of our operations in China and substantially all of our directors and officers reside outside the United States.

We are incorporated in the Cayman Islands and conduct substantially all of our operations in China through our PRC subsidiary and consolidated affiliated entities. Substantially all of our directors and officers reside outside the United States and a substantial portion of their assets are located outside of the United States. As a result, it may be difficult or impossible for the holders of our ADSs to bring an action against us or against these individuals in the United States in the event that they believe that their rights have been infringed under the U.S. securities laws or otherwise. Even if they are successful in bringing an action of this kind, the laws of the Cayman Islands and of China may render them 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 judgments of courts of the United States based on certain civil liability provisions of U.S. securities laws; and
- impose liabilities against us, 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 in certain circumstances recognize and enforce a non-penal judgment of a foreign court of competent jurisdiction without retrial on the merits.

Our corporate affairs are governed by our memorandum and articles of association, as amended and restated from time to time, and by the Companies Law (2018 Revision) and common law of the Cayman Islands. The rights of shareholders to take legal action against us and our 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 English common law, which provides persuasive, but not binding, authority in 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 precedents in the United States. In particular, the Cayman Islands has a less developed body of securities laws than the United States and provides significantly less protection to investors. In addition, shareholders in Cayman Islands companies may not have standing to initiate a shareholder derivative action in U.S. federal courts.

As a result, our public shareholders may have more difficulty in protecting their interests through actions against us, our management, our directors or our major shareholders than would shareholders of a corporation incorporated in the United States.

We may be classified as a passive foreign investment company, or PFIC, under U.S. federal income tax law, which could result in material adverse U.S. federal income tax consequences to U.S. holders of the ADSs.

Depending upon the value of our assets, which is generally determined based on the market value of the ADSs, and the nature of our assets and income over time, we could be classified as a PFIC for U.S. federal income tax purposes. Based on our current income and assets and the value of the ADSs, we do not believe we were a PFIC for the 2018 taxable year or for prior years, and we do not expect to be classified as a PFIC for the current taxable year or in the foreseeable future. While we do not anticipate becoming a PFIC for the current taxable year, fluctuations in the market price of our ADSs or changes in the composition of our income or assets may cause us to become a PFIC for the current or any subsequent taxable year.

We will be classified as a PFIC for any taxable year if either (i) 75% or more of our gross income for the taxable year is passive income or (ii) 50% or more of the value of our assets (determined on the basis of a quarterly average) is attributable to assets that produce or are held for the production of passive income. Although the law in this regard is unclear, we intend to treat Gridsum PRC Holding as being owned by us for U.S. federal income tax purposes, not only because we exercise effective control over the operation of this entity but also because we are entitled to substantially all of its economic benefits and burdens, and, as a result, we consolidate its operating results in our consolidated U.S. GAAP financial statements. If it were determined, however, that we are not the owner of Gridsum PRC Holding for U.S. federal income tax purposes, the PFIC tests would apply differently and we could be treated as a PFIC for our current taxable year and any subsequent taxable year. Because of the uncertainties in the application of the relevant rules in respect of our VIE structure and because PFIC status is a factual determination made annually after the close of each taxable year on the basis of the composition of our income and the value of our active versus passive assets, there can be no assurance that we will not be a PFIC for the current taxable year or any future taxable year.

If we were to be or become classified as a PFIC, a U.S. holder of our ADSs or Class B ordinary shares generally would be taxed at ordinary income rates on any sale of our ADSs or Class B ordinary shares and on any dividends treated as an “excess distribution” under the U.S. federal income tax rules. An interest charge also generally would apply if U.S. tax were deferred during the U.S. holder’s holding period. Further, if we were a PFIC for any year during which a U.S. holder held our ADSs or ordinary shares, we generally would continue to be treated as a PFIC for all succeeding years during which such U.S. holder held our ADSs or ordinary shares. You are urged to consult your tax advisor concerning the U.S. federal income tax consequences of acquiring, holding and disposing of ADSs or ordinary shares if we are or become classified as a PFIC. For more information see “Item 10. Additional Information—E. Taxation—Material United States Federal Income Tax Considerations—Passive Foreign Investment Company Rules.”

Changes in our United States federal income tax classification, or that of our subsidiaries, could result in adverse tax consequences to our 10% or greater U.S. shareholders.

The U.S. tax reform act of December 2017 (the “2017 Act”) may have changed the consequences to U.S. shareholders that own, or are considered to own as a result of certain stock ownership attribution rules, 10% or more of the voting power or value of the stock of a non-U.S. corporation (a “10% U.S. Shareholder”) under the U.S. Federal income tax law applicable to owners of U.S. controlled foreign corporations (“CFCs”). Prior to the 2017 Act, we did not believe we, or any of our non-U.S. subsidiaries, were CFCs, based on our 10% U.S. Shareholders (if any) together owning less than 50% of our ordinary shares. The 2017 Act repealed Internal Revenue Code Section 958(b)(4), which, unless clarified in future regulations or other guidance, may result in our classification (or the classification of certain of our non-U.S. subsidiaries) as CFCs. This classification could cause significant and adverse U.S. tax consequences for our existing 10% U.S. Shareholders (if any) or any person who becomes a 10% U.S. Shareholder. Therefore, 10% U.S. Shareholders (if any) and persons considering becoming 10% U.S. Shareholders are strongly urged to consult with their tax advisors regarding the 2017 Act revisions to the U.S. Federal income tax law applicable to owners of CFCs.

As a foreign private issuer, we are exempt from some disclosures that apply to U.S. domestic public companies.

Because we are a foreign private issuer, 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 requiring filing quarterly reports on Form 10-Q and current reports on Form 8-K with the SEC;
- provisions regulating the solicitation of proxies, consents or authorizations;
- provisions requiring insiders to file public reports of their stock ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and
- selective disclosure rules under Regulation FD governing issuer disclosure of material nonpublic information.

As a result, our shareholders may not be afforded the same protections or information that would be made available to them were they investing in a U.S. domestic issuer.

As a company incorporated in the Cayman Islands, we are permitted to adopt home country practices in relation to corporate governance matters that differ significantly from the Nasdaq corporate governance listing standards; these practices may afford less protection to shareholders than they would enjoy if we complied fully with the Nasdaq corporate governance listing standards.

As a Cayman Islands company listed on The Nasdaq Stock Market, we are subject to the Nasdaq corporate governance listing standards. Nasdaq rules permit us to follow the corporate governance practices of our home country, the Cayman Islands, which differ significantly from the Nasdaq corporate governance listing standards. For example, neither the Companies Law of the Cayman Islands nor our memorandum and articles of association requires a majority of our directors to be independent, and we could include non-independent directors as members of our nominating and corporate governance committee. In addition, neither the Companies Law of the Cayman Islands nor our memorandum and articles of association requires us to solicit proxy and hold meetings of our shareholders every year. Furthermore, our independent directors would not necessarily hold regularly scheduled meetings at which only independent directors are present. If we choose to follow home country practice, our shareholders may be afforded less protection than they otherwise would receive under the Nasdaq corporate governance listing standards applicable to U.S. domestic issuers. As of the date of this annual report, we are relying on the home country practices stated above. As a result, we may have less independent oversight over the management of our company.

Any requirement to obtain prior approval for our initial public offering could have a material adverse effect on our business, operating results, reputation and trading price of the ADSs.

PRC regulatory agencies have promulgated Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, or the M&A Rules, which became effective in September 2006 and was amended on June 22, 2009. The M&A Rules purport to require offshore special purpose vehicles, or SPVs, that are formed for overseas listing purposes through acquisition of PRC domestic companies and controlled by PRC companies or individuals, to obtain regulatory approval prior to publicly listing their securities on an overseas stock exchange. While the application of the M&A Rules remains unclear, we believe that no prior approval was required for our initial public offering. However, uncertainties exist as to how the M&A Rules will be interpreted and implemented. If PRC regulatory agencies determine that we needed to obtain regulatory approval for our initial public offering, we may face sanctions by the regulatory agencies, including fines and penalties or limits on our operations in the PRC, delays or restrictions on the repatriation of the proceeds from our initial public offering into the PRC or other actions that could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects, any of which would harm the trading price of the ADSs.

We are an “emerging growth company” and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our ADSs less attractive to investors.

We are an “emerging growth company,” as defined in the federal securities laws, and we may take advantage of exemptions from various reporting requirements that are applicable to other public companies, including not being required to provide auditor attestation of our internal control over financial reporting, reduced disclosure obligations regarding executive compensation, and exemption from the requirement to hold a nonbinding shareholder advisory vote on executive compensation. If some investors find our ADSs less attractive as a result, there may be a less active trading market for our ADSs and our stock price may be more volatile.

We incur significant costs and devote substantial management time in order to operate as a Nasdaq-listed public company.

As a public company, we incur significant legal, accounting and other expenses that are not incurred by a private company. For example, we are subject to reporting requirements of the Exchange Act, and to other securities laws, rules and regulations implemented by the SEC and The Nasdaq Stock Market, are required to establish and maintain effective internal controls, disclosure controls and corporate governance practices. Compliance with these requirements increases our legal and financial compliance costs and makes some activities more time consuming and costly. In addition, these public company requirements may divert management attention from operational and other business matters. We need to prepare and maintain an effective contract tracking database, hire additional accounting and finance staff with sufficient U.S. GAAP accounting and SEC reporting experience. As a public company, it may be difficult for us to attract and retain qualified people to serve on our Board of Directors, or as executive officers.

Shareholders of a public company often bring securities class action lawsuits against the company following periods of instability in the market price of that company’s securities. We have been, and may continue to be, involved in class action lawsuits, which could divert a significant amount of our management’s attention and other resources from our business and operations, and harm our results of operations and require us to incur significant expenses to defend the suits. Any such class action lawsuit could harm our reputation and restrict our ability to raise capital in the future, and, if successfully made against us, could have a material adverse effect on our business, financial condition and results of operations. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal Proceedings.”

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Gridsum Holding Inc. is an exempted company incorporated under the laws of the Cayman Islands on July 21, 2014.

Our principal executive offices are located at South Wing, High Technology Building, No. 229 North 4th Ring Road, Haidian District, Beijing 100083, People’s Republic of China. Our telephone number at this address is (86-10) 8261-9988. Our registered office in the Cayman Islands is located at the offices of International Corporation Services Ltd., Harbour Place 2nd Floor, 103 South Church Street, P.O. Box 472, George Town, Grand Cayman KY1-1106. Our agent for service of process in the United States is Law Debenture Corporate Services Inc., located at 801 2nd Avenue, Suite 403, New York, NY 10017 and Cogency Global Inc., located at 10 East 40th Street, 10th Floor, New York, New York 10016.

Our Internet address is www.gridsum.com. The information on our website is not a part of this document. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at the website of <http://www.sec.gov>.

We commenced operations in December 2005 with the establishment of Beijing Gridsum Technology Co., Ltd., or Beijing Gridsum, in China. We have established or acquired some additional operating companies: Beijing Moment Everlasting Ad Co., Ltd., in January 2011, and its wholly-owned subsidiary, Beijing Yunyang Ad Co., Ltd., in March 2013, and Guoxinjunhe (Beijing) Technology Co., Ltd., in April 2012, Beijing Guoxinwangyan Technology Co., Ltd., in August 2015, Beijing Gridsum Yizhun Technology Co., Ltd., in February 2016, Beijing Zhixunylong Software Co., Ltd., which was acquired by Beijing Gridsum in May 2017, Beijing Gridsum Wang'an Technology Co., Ltd., in June 2017, and Beijing Hainatianchuang Technology Development Co., Ltd., which is controlled by Beijing Gridsum, in August 2017. We refer to these operating companies as Beijing Moment, Beijing Yunyang, Guoxinjunhe, Beijing Guoxinwangyan, Beijing Yizhun, Beijing Zhixunylong, Beijing Gridsum Wang'an, and Beijing Hainatianchuang, respectively.

From July to December 2014, we undertook a reorganization of our group of companies in preparation for our proposed initial public offering in the United States. We incorporated Gridsum Holding Inc., or Gridsum Cayman, under the laws of the Cayman Islands on July 21, 2014, as the parent holding company of our group of related companies. Gridsum Cayman established a wholly-owned subsidiary in Hong Kong, Gridsum Holding (China) Limited, or Gridsum HK, which in turn established a wholly-owned subsidiary in the PRC, Dissector (Beijing) Technology Co., Ltd., or the WFOE. Also as part of this reorganization, we established Gridsum PRC Holding in China, which acquired full ownership of Beijing Gridsum, Beijing Moment and Guoxinjunhe. The shareholders of Gridsum PRC Holding are Guosheng Qi, Guofa Yu, and Gridsum (Beijing) Management Consulting Co., Ltd., a company incorporated in the PRC and owned by Guosheng Qi and other key employees.

To comply with applicable PRC laws and regulations, we conduct our operations in China principally through Beijing Gridsum, Guoxinjunhe, Beijing Moment, Beijing Yunyang, Beijing Guoxinwangyan, Beijing Zhixunylong, Beijing Gridsum Wang'an, Beijing Hainatianchuang, and Beijing Yizhun. The WFOE entered into a series of contractual arrangements on December 22, 2014 with Gridsum PRC Holding, the parent of our PRC operating companies, and the shareholders of Gridsum PRC Holding. These contractual arrangements allow us to exercise effective control over Gridsum PRC Holding and receive substantially all of the economic benefits of Gridsum PRC Holding. As a result, we are the primary beneficiary of Gridsum PRC Holding and treat it as our variable interest entity, or VIE, under U.S. GAAP. We have consolidated the financial results of Gridsum PRC Holding and its subsidiaries in our consolidated financial statements.

Prior to the reorganization in 2014, our group of companies was controlled by a predecessor Cayman Islands entity, whose wholly-owned subsidiary in the PRC controlled our operating companies in China pursuant to a set of contractual arrangements, which contained substantially the same terms as, and were replaced by, the contractual arrangements entered into among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding in 2014.

In June 2015, we entered into a framework agreement and a collaboration agreement with an entity that is wholly-owned by the State Information Center of China, or the SIC Entity. Under these agreements, we and the SIC Entity established a joint venture company, Beijing Guoxinwangyan, to oversee the business operations, sales and marketing and financial management of the Research Center. Beijing Gridsum and Guoxinjunhe each owns 40% of the equity interest in Beijing Guoxinwangyan. The remaining 20% equity interest in Beijing Guoxinwangyan, which was initially owned by the SIC Entity, has been transferred to Beijing Gridsum Wang'an.

On September 23, 2016, our ADSs commenced trading on The Nasdaq Stock Market under the symbol "GSUM."

On April 30, 2018, we entered into a convertible note purchase agreement with FutureX Innovation SPC, an affiliate of FutureX. On May 5, 2018, we completed the transactions contemplated by the convertible note purchase agreement and issued an US\$40 million convertible note to FutureX Innovation SPC for a total consideration of US\$40 million. In accordance with the convertible note purchase agreement, we also entered into a registration rights agreement with FutureX Innovation SPC.

On February 28, 2019, we entered into a share subscription agreement with certain equity investment firms. Pursuant to the share subscription agreement, we agreed to issue and sell an aggregate of 3,461,902 newly issued Class B ordinary shares to certain equity investment firms in a private placement transaction for an aggregate price of approximately US\$11.1 million, or a per share price of US\$3.20. The transaction was closed on March 4, 2019. In connection with the transaction, we also entered into a registration rights agreement with the investors.

In May 2018, our board of directors received a preliminary non-binding proposal letter, from FutureX, to acquire all of our outstanding ordinary shares not already owned by it in a going private transaction. Our board of directors formed a special committee consisting of independent directors to evaluate the proposal and any other alternative transactions. If completed, the going private transaction will result in us becoming a privately-held company and the ADSs will no longer be listed on The Nasdaq Stock Market. There can be no assurance that the proposal will be pursued further, approved or consummated.

B. Business Overview

Gridsum is a leading provider of sophisticated data analysis software for multinational and domestic enterprises and government agencies in China. Our proprietary distributed data architecture allows our customers to efficiently collect and analyze vast amounts of information that is collected, indexed and stored in an organized manner, or structured data, and information that is not organized, or unstructured data. Our core technology, the Gridsum Big Data Platform and the Gridsum Prophet: Enterprise Artificial Intelligence, or AI, Engine, with its machine learning and AI capability, performs multi-dimensional correlation analysis and analyzes complex real-time events. With the support of our Big Data Platform and the Gridsum Prophet, our customers use our data visualization and data-mining technologies to identify complex relationships within their data and gain new insights that help them make better business decisions.

Our leading position is based on our solutions and our core technologies. Our software products are designed for a variety of commercial and governmental applications. To help our enterprise customers reach China's large and growing online and mobile population, our initial products have focused on digital marketing analytics and automation solutions. We were among the first companies to offer web analytics solutions based on data warehouse technology, and we were among the first digital intelligence companies in China to build solutions entirely on a distributed data warehouse architecture using the open-source Hadoop framework. By leveraging the analytic capabilities of our Big Data Platform and the Gridsum Prophet, we have developed additional software solutions, including new media analytics and information discovery solutions, to address a broad range of customer needs. In 2018, our customers included Fortune 500 and China 500 enterprises, comprising 539 customers across diverse industries, including 10 Chinese government agencies.

Key Advantages of our Solutions

We deliver our solutions as cloud-based software-as-a-service, or SaaS, offerings that are easy to deploy, easy to access, automatically updated without disruption, and enable our customers to reduce IT support costs by outsourcing hardware and software maintenance and support. The key advantages of our solutions include:

Fast and Efficient Multi-dimensional Drill-down—Our software is designed to enable customers to derive valuable intelligence from both structured and unstructured data quickly and easily. Our proprietary technology leverages our high performance correlation analysis engine to provide real-time response to customer data queries. Customers perform multi-dimensional data drill-down and correlation analysis with simple point-and-click and fingertip gestures, thereby identifying issues and isolating causes.

Simple and Customizable Visualization—We design our visualization to be simple, intuitive and user-friendly. Users learn and begin using our products with little to no training required. Our dashboards are optimized for multiple industry verticals, and within each industry the visualization can easily be customized based on specific customer needs. This ease of use allows users with little technical training or IT support to leverage our products and achieve desired results for their work.

Fully Integrated Solution Suites—All of the individual solutions in our solution suites share a common user interface, through which customers access the solutions they have purchased. Our solutions are accessible across all screen formats, from large multi-screen control centers to desktops and mobile devices.

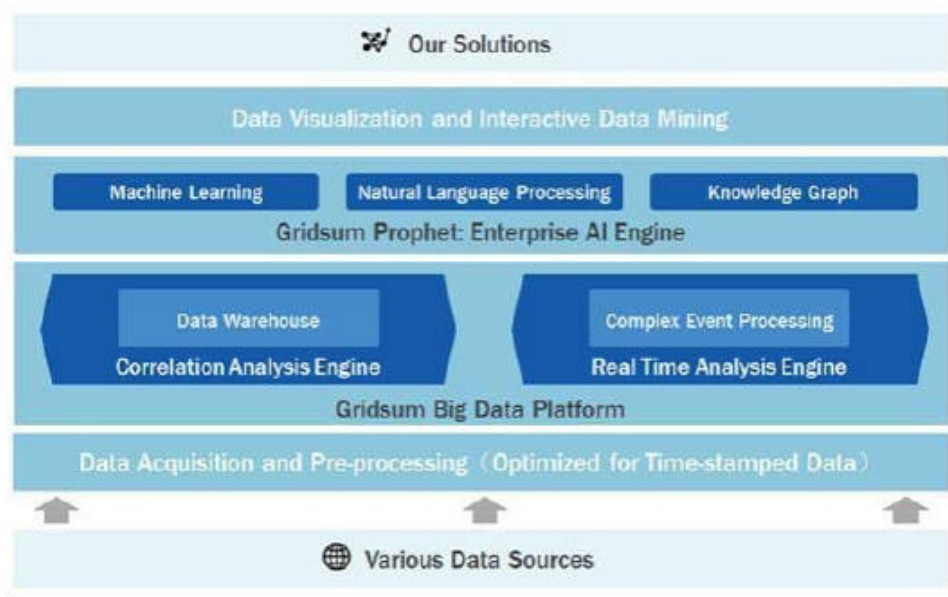
Easy and Rapid Deployment—Our solutions can typically be deployed and configured by our customers within a day, without specialized training, and readily integrate with customers' management and operating systems. Easy implementation and reduced start-up time allow customers to gain proficiency in our software quickly and to see results immediately. Updates such as software enhancements and new features can be delivered from the cloud without disruption to customers' daily operation. Our highly flexible and extensible architecture delivers scalable and adjustable solutions for customers and allows us to offer specific solutions for specific customer needs. Customer dashboards are readily customizable based on customer needs, with no special coding or reconfiguration required.

Lower Total Cost of Ownership—Our cloud-based solutions enable our customers to access our software solutions anywhere, anytime and in real time, and reduce upfront investment and total cost of ownership because our customers do not need to invest in additional hardware or IT infrastructure to utilize our products.

Made in China, for China—Our solutions are designed with the China market in mind and are readily customizable or adaptable to address specific needs of domestic enterprise customers. Our natural language processing capabilities are designed to handle unstructured data in the Chinese language.

Our Core Technology

We offer suites of solutions that are built on our core technology. These end-to-end solution suites address customer needs in marketing automation, e-Government, new media, information discovery and visualization. Our solutions and core technologies are built on our distributed data warehouse architecture using the open-source Hadoop framework. Our data architecture offers high scalability and high performance characteristics. Our core technology consists of our data visualization and interactive data mining technologies, the Gridsum Prophet: Enterprise AI Engine, the Gridsum Big Data Platform, Gridsum Prophet, and our data acquisition and data pre-processing technologies.



Gridsum Big Data Platform

Our software solutions are built on the Gridsum Big Data Platform, our proprietary technology designed to acquire, store, process and analyze large and rapidly growing volumes of both structured and unstructured data, leveraging our highly scalable correlation analysis engine and complex event processing capability. A distributed computing architecture is required in order to analyze in real time the rapidly growing volume and complexity of digital data. We were among the first digital intelligence companies in China to build solutions entirely on a distributed data warehouse architecture using the open-source Hadoop framework, allowing us to perform multi-dimensional correlation analysis in real time, on data sets regardless of size, and to implement real-time interactive data mining at large scale.

The core capabilities of the Gridsum Big Data Platform include:

- **Multi-dimensional correlation analysis**—Our correlation analysis engine enables us to dynamically correlate large quantities of structured and unstructured data on an unlimited number of dimensions. This high performance capability, enabled by our large-scale distributed data warehouse architecture, allows us to run multi-dimensional data drill down and data correlation analysis in real time, on datasets regardless of size. We perform this analysis on all of the data in the dataset, without resorting to sampling. Our correlation analysis capability is further enhanced by the size and quality of our datasets, including data acquired from consenting customers and third parties, public information that we have collected from web crawling and data derived from these datasets. Our data includes the correlations that we have retained from our past projects. Because we have been accumulating our datasets since 2009, with a focus on data closely related to our customers’ business operations and customer interactions, we believe that our data assets are among China’s largest and highest quality.

- *Real-time complex event processing*—Our complex event processing technology tracks all available data about events as they occur and applies sophisticated rules to identify patterns that signify problems, threats and opportunities for our customers. This technology is well suited for analysis of large-scale concurrent streaming data in real time.

All of these capabilities of the Gridsum Big Data Platform are easily extensible and are highly scalable, allowing us to enter into new industries and serve new customers.

Gridsum Prophet: Enterprise AI Engine

In May 2017, we launched Gridsum Prophet which is our enterprise AI engine. Gridsum Prophet is built on top of the Gridsum Big Data Platform and delivers the AI capabilities that powers Gridsum’s current and future products and solutions across industry verticals and applications. These AI capabilities include machine learning, predictive modeling, natural language processing, speech and image recognition, and knowledge graph which enable Gridsum’s solutions to deliver data driven insights, predictions, recommendations, and automations.

- *Machine learning capability powered by highly relevant large-scale historical data assets and industry experience*—Our machine-learning algorithms learn from experience, identify patterns of interest and make data-driven predictions within their defined parameters. We leverage our data assets and industry expertise to design machine-learning algorithms that solve specific industry problems for our customers. In conjunction with our natural language processing technology, machine learning is particularly suitable for processing unstructured data by recognizing patterns and connections through which the raw data can be structured and analyzed.
- *Natural language processing technologies*—Natural language processing, or NLP, for the Chinese market is extremely complex due to fundamental characteristics of the Chinese language, including multiple meanings of the same Chinese characters, contextual association of characters into words and lack of punctuation. We have solved these long-standing problems by developing proprietary NLP technologies based on algorithms and machine learning techniques that are designed to understand and analyze the complexity of the Chinese language and its usage in various contexts. Our NLP technologies enable the extraction of information about entities, correlations, sentiments and emotions from vast amounts and variety of digitized documents, text converted from audio and video streams and other digital content in targeted industries such as legal and media. With our NLP technologies, we are able to extract structure from unstructured data, so that it can be processed and analyzed effectively.
- *Knowledge Graph* is fundamental in delivering human-like intelligent enterprise solutions. We developed China’s first knowledge graph for the legal domain and it has been successfully used to provide intelligent recommendations in the Smart Push product and automatic verdict generation for the civil courts. The technology and methodology used in developing knowledge graphs is a key capability in Gridsum Prophet.

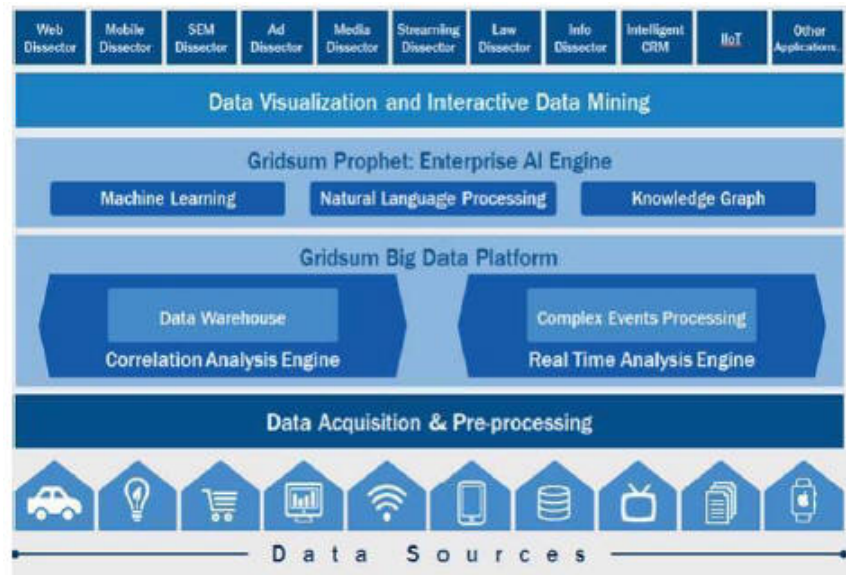
Visualization Technologies

We offer intuitive interactive visualization tools and dashboards that allow customers to display vital performance metrics in a highly flexible and customizable way and allow users to interact directly with data by using simple fingertip and point-and-click gestures to perform analyses and answer questions. Our visualization capabilities support a full range of formats, from live data displays on large multi-screen control centers, to reports optimized for mobile devices. Our visualization tools and dashboards are designed to be a rich interface that supports interactive data mining and integrates across device formats. Visualization is an important component of our technology used in all of our solutions and is highly adaptable to the requirements of different industries and individual customers.

Data Acquisition Technologies

Time-stamping is a universal characteristic of all machine generated and reported data. Our technology gives us the ability to apply an analytical framework to any raw data that is time stamped, whether the data is sourced from a single click on a website or from complex natural language documents. This capability allows us to organize data and cross correlate it and to perform sequence analysis to determine causality of events. We collect and process massive volumes of time-stamped data at high speed using our proprietary Extract, Transform and Load, or ETL, technologies. Our ETL technologies enable us to apply relevant analytical frameworks to raw data in various forms and give us the high performance required to analyze rapidly growing volumes of structured and unstructured data in real time, extracting intelligence critical to our customers.

Our Solutions



We offer suites of solutions for marketing automation, e-Government, new media, information discovery, visualization, and Industrial Internet of Things, or IIoT. Customers using our solutions are able to:

- analyze user behavior online on the web and on mobile devices;
- assess web design and conduct A/B testing of web and mobile web design;
- manage massive scale search engine marketing campaigns;
- measure the contribution of different marketing channels to user conversion;
- monitor and analyze streaming media and optimize user experience;
- correlate information in unstructured datasets using natural language processing;
- gather and integrate data from diverse data sources online and offline, from the Web and IIoT;
- visualize and interact with graphical information across multiple display sizes and formats; and
- make data driven predictions, recommendations, and decisions.

We deliver our solutions as cloud-based SaaS offerings designed for ease of use and rapid adoption within the customer's organization.

Intelligent CRM Solution

Gridsum's Intelligent CRM Solution is a cloud-based, marketing-centric CRM solution tailor-made for both multinational and local companies operating in China which allows our clients to leverage both online and offline data derived from their digital marketing and sales divisions and customers' digital footprints, to drive sales and close orders in a more efficient and KPI-enhancing manner. The solution leverages Gridsum's AI Engine, Gridsum Prophet, and our marketing automation suite, as well as Gridsum's deep experience in seamlessly interfacing our marketing automation suite with our clients' sales infrastructure and systems, to create a ground breaking and tailor-made marketing-centric CRM solution for the China market.

Gridsum's Intelligent CRM solution allows clients to automate and increase sales efficiency across their entire businesses by marketing to individual customers rather than broader demographics. The solution is designed and optimized as a powerful and complete standalone CRM solution. It also has advanced "plug and play" capability allowing it to seamlessly integrate with a client's legacy systems where necessary.

With machine learning, Gridsum's clients will be able to automate the identification, prioritization and "valuation" of promising leads and relationships and sort through massive amounts of data related to multiple areas of their business—from marketing and sales, to loyalty programs, e-commerce, promotions, and more—to easily track customers throughout the different stages of the customer lifecycle.

By seamlessly integrating multiple social platforms, Gridsum clients will also be able to create a "social map" of their customers' professional and social networks, matching this to their own organizations, to further drive the sales process.

Marketing Automation Suite

All of our marketing automation solutions are available as an integrated suite of solutions, which we call ADSUITE. The capabilities of each solution are described below.

Web Dissector is used to analyze customer websites by monitoring and analyzing key performance indicators such as clicks, page views, sessions, conversion rates and sales. Web Dissector precisely measures the effectiveness of online promotional activities and detects click fraud. The capabilities and features of Web Dissector include:

- online operational data analysis;
- pixel-level interactive click and touch "heat maps";
- multi-dimension drill-down analysis;
- click fraud detection;
- online asset assessment;
- user behavior analysis;
- online performance optimization; and
- online advertisement delivery and performance analysis.

Mobile Dissector is used to understand mobile app user activity, gain insight into users' interactive behavior, and improve user experience with the application and retention rate. Mobile Dissector also helps advertisers monitor characteristics of mobile audiences on mobile web sites and apps, user behavior and the value of different mobile channels. The capabilities and features of Mobile Dissector include:

- mobile application promotion and distribution analysis;
- mobile apps data analysis;

- error and exception tracking;
- custom event analysis;
- multi-dimensional drill-down analysis;
- app life-cycle analysis; and
- cross platform analysis.

SEM Dissector automates search engine marketing processes for advertisers, advertising agencies and advertising account managers, and provides comprehensive, objective and transparent performance reports. *SEM Dissector* supports simultaneous management of multiple accounts and grouping of customized keywords with major Chinese search engines, including Baidu, Sogou and Qihoo 360. Built-in analytical models guide customers to optimize keyword advertising, and automatic bidding algorithms monitor competitors' advertising activities and make appropriate bids automatically. The capabilities and features of *SEM Dissector* include:

- customer data integration and key performance indicator customization;
- keyword advertising management;
- report customization;
- automatic advertising placement and bid management; and
- attribution model.

SEO Dissector is our search engine optimization tool. It analyzes website quality and the website's level of accessibility to various search engines. Customers use *SEO Dissector* to evaluate website performance, identify defects and make improvements. Customers also evaluate reports of keyword search results on different search engines, enabling them to optimize their websites to improve their organic rankings on search engine results pages. The capabilities and features of *SEO Dissector* include:

- website indexability analysis;
- multi-dimensional analysis of keywords ranking;
- rich and intuitive presentation of analysis results;
- practical webmaster tools; and
- flexible customization.

Ad Dissector is our advertisement performance monitoring and optimization product. It monitors and analyzes banner, rich media and text link and other advertising formats and leverages our core technology to provide optimization solutions. Advertisers and advertising agencies use *Ad Dissector* to measure performance of online advertising and allocate media resources to improve returns. The capabilities and features of *Ad Dissector* include:

- user-friendly placement management;
- convenient landing page and scheduling management;
- real-time data tracking;
- powerful multi-source data correlation analysis; and
- Gantt chart performance visualization.

Contribution Dissector tracks and analyzes user behavior over the entire user life cycle from original access to ultimate conversion, tracing that behavior over years and various conversion data points and applying various attribution model algorithms to the data. Customers assess advertisement results across media outlets, connect off-line conversion, analyze contribution from each channel to the ultimate conversion process and optimize online businesses. Website operators use Contribution Dissector to evaluate the performance of their advertising campaigns across media outlets, connect offline conversion, analyze historical channel contributions to the ultimate conversion or sale and allocate their advertising resources efficiently based on the results. The capabilities and features of Contribution Dissector include:

- conversion path identification;
- integration of online and offline data;
- multiple attribution models;
- multi-dimensional analysis;
- marketing channel analysis; and
- user behavior playback.

Audience Dissector is our audience analysis product. It combines customer offline user data from customer relationship management systems with our online user behavior data and digital intelligence capabilities to identify high value and high loyalty users and improve customer returns on their marketing investments. The capabilities and features of Audience Dissector include:

- intelligent customer relationship maintenance system;
- decision-making support and optimization;
- flexible user behavior tagging management;
- flexible application programming interface; and
- data security and privacy.

Recommendation Engine is our data driven content recommendation solution for customers delivering adaptive video, news and e-commerce content on websites, mobile apps and Internet protocol television terminals. By accumulating user behavior data, Recommendation Engine continuously captures user preferences and improves the accuracy of its recommendations. The capabilities and features of Recommendation Engine include:

- mainstream mobile operating system data collection and analysis;
- optimization for industry verticals;
- personalized recommendations for mobile application content; and
- powerful content management platform.

E-Government Suite

Government Web Dissector is our digital intelligence solution for public sector websites, providing government website operators at local, municipal, provincial and national levels with real-time website operating data and digital intelligence that is similar to what is provided to commercial customers by our Web Dissector solution. Our public sector customers use Government Web Dissector to optimize the quality and efficiency of online public services, such as driver's license applications and marriage certificate applications. In addition to the features available from the standard Web Dissector, the capabilities and features of Government Web Dissector include:

- public service performance metrics; and
- intelligent diagnostics across websites.

Government Website Group Integrated Management Platform, which we refer to as the Integrated Management Platform, is our integrated big data visualization system used by government website operators that are responsible for managing groups of websites. It provides a visualized integrated display of website group operating status and data. The capabilities and features of the Integrated Management Platform include:

- comprehensive overview of website groups;
- performance overview;
- visual comparison;
- website correlation display; and
- geographic distribution visualization.

New Media Suite

Streaming Dissector is our real-time viewership analysis and operational efficiency monitor for digital online video. Unlike traditional methods of measuring viewership, Streaming Dissector does not rely on viewer sampling, but continually monitors all viewers of the streaming video. The capabilities and features of Streaming Dissector include:

- real-time streaming monitoring;
- content delivery network monitoring;
- reporting and alerting;
- real-time rating analysis; and
- multi-platform support.

Video Dissector is our online video content analytics tool for discovering the most valuable or attractive parts in video content. It provides analysis of viewer behavior and solutions for optimizing online video content. The capabilities and features of Video Dissector include:

- online video operation analysis;
- video content evaluation;
- viewer analysis; and
- online video performance analysis.

TV Dissector is our analytics tool for internet protocol television, internet television, cable television, satellite television and digital television. It monitors and analyzes viewer behavior and provides solutions to optimize the business and operations of TV station operators. TV station operators use TV Dissector to analyze the development and activity of users and viewership of live broadcast, play on-demand and playbacks, generate accurate statistics about the conversion of their electronic program guide pages and advertising activities and optimize product packages and pay-per-view businesses. The capabilities and features of TV Dissector include:

- user development and activeness analysis;

- viewership analysis;
- play on-demand and playback analysis;
- product package analysis;
- electronic program guide analysis; and
- user experience analysis.

Rating Plus is our television viewing data analytics tool for traditional TV stations. Rating Plus automatically combines traditional viewership log data with the channels and programs of the TV stations and generates viewership analysis. The management and operation personnel of the TV stations easily access the analysis via computers and mobile phones. Rating Plus provides search functionality that supports complex multi-dimension data searches and alerting feature that provides monitoring and malfunction alerting related to program broadcasts. The capabilities and features of Rating Plus include:

- automatic generation of viewership data;
- viewership analysis; and
- program analysis.

Information Discovery Suite

Media Dissector is our mass media, social media and user-generated content media monitoring and analytics tool. Media Dissector applies distributed cloud computing crawler technology to capture media information on the internet. It uses natural language processing technology such as word segmentation, named-entity recognition and Chinese information processing technology to process information and provides correlation analysis to enable drill downs for information discovery. The capabilities and features of Media Dissector include:

- information overview;
- item mentions and context analysis;
- media event and public opinion analysis; and
- sentiment analysis.

Information Dissector is an insightful analytical system developed to provide stock price predictions based on market sentiment in Chinese equity markets. Information Dissector gathers information from many sources, such as news, blogs, forums and analyst reports, maps each piece of information to particular industries and companies and processes the information into specific metrics used as input for complex time-series models and algorithms. The capabilities and features of Information Dissector include:

- market sentiment analysis;
- multiple metric measurement; and
- intuitive visualization interface.

Social Listening is our cloud-based social listening solution, which enables our enterprise clients to monitor and analyze web and social media posts regarding the brand, products, customer service of the client and its competitors. The Social Listening solution utilizes our advanced natural language processing and machine learning technologies to analyze textual and image content and delivers the most relevant and actionable insight. The capabilities and features of Social Listening include:

- broad coverage of search, vertical sites and social media data;
- powerful data analytics and visualization;
- sentiment and topic analysis with easy access to data sources;
- alerts of noteworthy topics or posts; and
- delivered via mobile app as well as web browser on personal computers.

Legal Service Product Suite

Law Dissector and Smart Push. *Law Dissector* is our search and statistical analysis tool for legal research. It utilizes our natural language processing technology and applies data science methodology in the legal industry. *Law Dissector* summarizes the key attributes of legal cases and aggregates them for statistical analysis, which enables judges, lawyers and researchers to find implied patterns or rules that would be valuable for their respective professional objectives. *Smart Push* is our legal research tool that recommends relevant cases and legal information by keyword search or natural language search. The capabilities and features of *Law Dissector* and *Smart Push* include:

- information retrieval;
- powerful aggregation and statistical research;
- intelligent case analysis; and
- recommendation of relevant judicial precedents and legal information.

Intelligent Voice Recognition and Transcription System. The advanced AI-enabled Intelligent Voice Recognition and Transcription System converts voice into text in real time during court proceedings. The system leverages both Gridsum's vertically-focused enterprise-AI engine, optimized for the legal space, and Tencent's world-leading consumer-focused Chinese-language speech recognition engine. Gridsum adapted Tencent's speech recognition technology to create a high-accuracy and high-reliability speech-to-text and text-to-speech application for the highly specialized legal space. Key dynamics of the product include the following:

- A highly focused AI optimized for the legal sector: it adopts industry-leading voice recognition modeling methods and acoustic modeling technologies. With an ultra-large-scale language model – and through the application of machine learning to the huge amount of content codified in laws and regulations, court verdicts and other corpus – a customized engine was created to effectively identify and recognize legal terms and context.
- Outstanding performance: with real-time speech-to-text transcription in courts, text is generated in milliseconds with accuracy of approximately 95%, significantly improving the efficiency of the trial process. It supports custom “hot” words recognition, allowing the accuracy for names of people and organizations, and special words to reach approximately 90%.
- Highly secured and reliable data: deployed on the private network of the PRC courts, its data packets adopt unique encryption formats and algorithms from Tencent Cloud, which ensure highly secured audio data packet transmission. In addition, it has an improved access authorization mechanism on the client end to manage and control the security of services and business, and it supports multiple backup storage of audio files, which enhances data security and reliability.

Faxin Wei Su, a litigation service on WeChat's micro application platform and powered by Gridsum's Chinese legal information platform and knowledge base Faxin, delivers China's first integrated online litigation and remote trial handling service and offers the following capabilities:

- Our Faxin Wei Su platform provides both the courts and litigants with a fast and secure channel to match similar cases, make case status inquiries, submit files, and set appointments during the litigation process.
- All parties can join a trial remotely through our Faxin Wei Su platform and produce and question evidence throughout the process.
- All documents, including trial records, settlement agreements and other related files can also be accessed online after the trial is over.
- Our Faxin Wei Su platform's diversified dispute resolution system provides efficient and flexible tools for remote trials and should help ease congestion in a highly crowded court system.

Industrial Internet of Things (IIoT) Solutions

In August 2017, Gridsum began to assemble a team of industrial experts and experienced data scientists and engineers to develop our Industrial AI and IIoT platform and applications on top of the Gridsum Big Data Platform and Gridsum Prophet and in 2018, Gridsum increased investment in research and development relating to Industrial Internet of Things (IIoT) solutions. These effort brings Gridsum's AI and data science capabilities to the industrial verticals and helps our industrial clients optimize processes, reduce cost, and improve quality throughout the product design, manufacturing, and operations cycle. Some of the initial applications include:

- Smart fuel/power consumption prediction for new energy automobiles;
- Airport aviation fuel supply optimization;
- Oil drilling equipment failure prediction and preventive maintenance;
- Energy saving and preservation; and
- Automatic product defect detection.

Visualization Suite

Gridsum Dashboard is our data visualization tool for our digital intelligence solutions. It is used for interactive data mining and visualized data analysis. Gridsum Dashboard integrates charts, graphics and tables from various data sources and displays them on a single multi-screen interface. It offers pre-configured data visualization templates and provides customers with options to customize their data displays. Gridsum Dashboard improves visualization of customer digital intelligence data, so that customers understand the business operations in a timely and intuitive manner and provides business intelligence support for decision-makers. The capabilities and features of Gridsum Dashboard include:

- real-time connection to data;
- visualization templates;
- access control; and
- user-friendly interface.

Gridsum Report Center is our automated report generation and distribution tool, which supports data reporting for all of our solutions, aggregates data from multiple dimensions, customizes and creates report templates and configures report distribution. The data integrity verification capability makes report preparation convenient and improves the visual quality and accuracy of reports. The capabilities and features of Gridsum Report Center include:

- seamless integration;
- data integrity verification;

- multiple methods for report distribution;
- reusable report templates; and
- customizable and data combination from multiple dimensions.

Intellectual Property

We rely on a combination of trademark, fair trade practice, copyright and trade secret protection laws and patent protection in China and other jurisdictions, as well as contractual restrictions, to protect our intellectual property. We control access to our proprietary technology and algorithms by entering into confidentiality and invention assignment agreements with our employees and contractors and confidentiality agreements with third parties. As of February 28, 2019, we had 534 issued patents in China, which will expire between 2024 and 2035, 2,136 patent applications pending in China and 47 patent applications pending in various other countries and jurisdictions.

In order to assess the effectiveness of Gridsum’s innovative research and development activities, in March 2019 we engaged an independent third-party asset appraisal firm to evaluate a portion of our intellectual property assets as of February 28, 2019. The appraisal firm examined 64 of our software copyrights and 1,250 of our issued patents and patent applications, and concluded that these assets had a total value of RMB2.5 billion (US\$364.8 million) under PRC asset appraisal principles. We believe these results demonstrate the success of our research and development activities and our technology leadership, and the long-term value of our investments in research and development.

Despite our efforts to protect our proprietary technology and our intellectual property rights, unauthorized parties may attempt to copy or obtain and use our technology to develop applications with the same functionality as our products. Policing unauthorized use of our technology and intellectual property rights is difficult.

We expect that software in our industry may be subject to third-party infringement claims as the number of competitors grows and the functionality of applications in different industry segments overlaps. Any of these third parties might make a claim of infringement against us at any time.

Legal Proceedings

From time to time we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business.

We are involved with shareholder class action lawsuits described in “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal Proceedings.” Otherwise, we are not presently a party to any legal proceedings that in the opinion of our management, if determined adversely to us, would have a material adverse effect on our business, financial condition, operating results or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Regulation

Our business operations are primarily in the PRC and are primarily subject to PRC laws and regulations. The following is a summary of the most significant PRC laws and regulations affecting our business or our shareholders’ rights to receive dividends and other distributions from us.

Regulations on Internet Information Service

There are several principal regulations on internet information service business with respect to foreign investment restriction and qualification requirement, including (i) the Telecommunications Regulations of the People’s Republic of China, promulgated by the State Council on September 25, 2000, as most recently amended on February 6, 2016, (ii) the Administrative Measures on Internet Information Services, promulgated by the State Council on September 25, 2000, as most recently amended on January 8, 2011, or the Internet Measures, (iii) the Administrative Rules for Foreign Investment in Telecommunications Enterprises issued by the State Council effective on January 1, 2002, as most recently amended on February 6, 2016, (iv) Special Administrative Measures (Negative List) for Foreign Investment Access (Edition 2018), promulgated by the MOFCOM and the National Development and Reform Commission effective on June 28, 2018, or the Special Administrative Measures, and (v) the Foreign Investment Law, which was approved by the National People’s Congress on March 15, 2019 and will come into effect on January 1, 2020.

The Telecommunications Regulations of the People's Republic of China, the Administrative Rules for Foreign Investment in Telecommunications Enterprises, the Special Administrative Measures and the Foreign Investment Law prescribe line between different types of telecommunications business activities, including basic telecommunications services and value-added telecommunications services, and internet information service is categorized as value-added telecommunications service which shall be subject to the special administrative measures. Under these regulations, the proportion of foreign investment in companies conducting value-added telecommunications services (excluding e-commerce) shall not exceed 50%, and the foreign investor must have experience in providing value-added telecommunications services overseas and maintain a good track record. Due to these restrictions on foreign investment, we operate our internet information service business through Gridsum PRC Holding, our VIE, and its subsidiaries through contractual arrangements.

The Internet Measures divide internet information services into two categories: services of an operative nature and services of a non-operative nature. Our business conducted through our website (under domain name *www.gridsumdissector.com*) involves operative internet information services, which requires us to obtain an ICP license. Our affiliated PRC entity and a subsidiary of our VIE, Beijing Gridsum, obtained an ICP license issued by Beijing Communications Administration, a local branch of the Ministry of Industry and Information Technology, or the MIIT, in July 2015.

Regulations on Market Survey Business

There are several principal regulations on market survey business in terms of foreign investment restriction and qualification requirement, including (i) the Special Administrative Measures and (ii) the Measures on the Administration of Foreign-related Surveys, promulgated by the PRC National Bureau of Statistics on October 13, 2004.

The Special Administrative Measures classifies market surveys as subjecting to the special administrative measures, stating that market surveys shall be limited to Sino-foreign equity or cooperative joint venture operations, and specifically, Chinese parties shall be controlling shareholders for survey of television and radio program ratings. We conduct our market survey business of television and radio program ratings in the PRC through contractual arrangements with our VIE in compliance with the Special Administrative Measures.

The Measures on the Administration of Foreign-related Surveys define foreign-related market surveys as those including (i) market and social surveys conducted under the entrustment or with the financial aid of, or in cooperation with, any overseas organization, individual or any overseas organization's agency in the PRC, (ii) market surveys conducted by any overseas organization's agency in the PRC in accordance with applicable laws and (iii) market and social surveys wherein survey materials and results are to be provided to any overseas organization, individual or overseas organization's agency in the PRC. Such surveys must be conducted through a survey institution possessing a foreign-related survey permit in accordance with applicable laws. We conduct foreign-related market surveys primarily through Beijing Moment, a subsidiary of our VIE, and obtained a foreign-related survey permit in November 2015, which expired in November 2018. Beijing Moment has applied for the renewal of its foreign-related survey permit and expects to obtain the renewed permit in May 2019.

Regulations on Advertising Business

The Advertising Law of the People's Republic of China, promulgated by the Standing Committee of the National People's Congress on October 27, 1994, as most recently amended on October 26, 2018, and the Interim Measures on the Administration of Internet Advertising, promulgated by the State Administration for Industry and Commerce (currently known as the State Administration for Market Regulation) on July 4, 2016, are the principal law and regulation regulating our advertising business. These laws require the media platform operators to (i) verify the identity documents, name, address, contact details and other related information of a counterparty when entering an advertising contract, establish information files and update such files on a regular basis, and (ii) delete, block, broken links of any advertisement or take other similar technical measures and management measures to prevent such advertisement from spreading if they know or should know such advertisement is illegal. Our advertising business is required to comply with these rules and requirements.

Regulations on Government Procurement

On June 29, 2002, the Standing Committee of the National People's Congress promulgated the Government Procurement Law of the People's Republic of China, which came into effect on January 1, 2003 and was amended on August 31, 2014. This law was enacted for purposes of regulating government procurement activities and applies to government procurement activities conducted within the PRC. It prohibits suppliers from (i) providing false materials in an attempt to win a bid, (ii) defaming or excluding other suppliers by illegitimate means, (iii) colluding with the procuring entity or agency, or other suppliers, (iv) bribing or providing illegitimate benefits to the procuring entity or agency, (v) in the course of procurement through bid invitation, engaging in consultation or negotiation with the procuring entity or (vi) refusing to subject themselves to supervision by the relevant department or providing false information. Our business with the government is required to comply with these rules and requirements.

Regulations on Intellectual Property Rights

China has adopted legislation governing intellectual property rights, including copyrights, trademarks and patents. China is a signatory to major international conventions on intellectual property rights and is subject to the Agreement on Trade Related Aspects of Intellectual Property Rights as a result of its accession to the World Trade Organization in December 2001.

Computer Software Copyright

On March 1, 2013, the Regulations for the Protection of Computer Software promulgated by the State Council came into effect. These regulations are formulated for protecting the rights and interests of computer software copyright owners, encouraging the development and application of computer software and promoting the development of software business. As of February 28, 2019, we had 202 registered copyrights, including 190 registered computer software copyrights in the PRC.

Patent

Patents in the PRC are principally protected under the Patent Law of the People's Republic of China, which was amended by the Standing Committee of the National People's Congress as of December 27, 2008. This law is formulated for protecting the rights and interests of patentees, encouraging invention, promoting the application of inventions, enhancing innovation capacity, and facilitating the advancement of science and technology and the economic and social development. Under this law, the duration of a patent right is either 10 years or 20 years from the date of application, depending on the type of patent right. As of February 28, 2019, we had 534 patents granted in the PRC, 2,136 patent applications pending in the PRC and 47 patent applications pending in various other countries and jurisdictions.

Trademark

The PRC Trademark Law, effective in 1983 and most recently amended in 2013, protects the proprietary rights with respect to registered trademarks. The National Intellectual Property Administration under the State Administration for Market Regulation handles trademark registrations and may grant a term of 10 years for registered trademarks, which may be extended for another 10 years upon request. Trademark license agreements shall be filed with the National Intellectual Property Administration for record. In addition, if a registered trademark is recognized as a well-known trademark, the protection of the proprietary right of the trademark holder may reach beyond the specific class of the relevant products or services. As of February 28, 2019, we had 386 registered trademarks in different trademark categories and 271 trademark applications in the PRC.

Domain Name

On November 1, 2017, the Administrative Measures for Internet Domain Names promulgated by the Ministry of Information came into effect, replacing the Measures for the Administration of Internet Domain Names of the PRC promulgated by the Ministry of Information on December 20, 2004. These measures are formulated with reference to the norms on administration of internet domain names worldwide, for the purposes of regulating services regarding internet domain, safeguarding users' legitimate rights and interests, guaranteeing the safe and reliable operation of the system of internet domain names, promoting the development and application of Chinese domain names and top-level domains of the state, and promoting the healthy development of the PRC Internet network. As of February 28, 2019, we had 89 registered domain names.

Regulations on Network Security

Operation Security

On November 7, 2016, the Standing Committee of the National People's Congress promulgated the Cyber Security Law, which came into effect on June 1, 2017. The Cyber Security Law aims to establish more stringent requirements for network operators in China, and applies to the construction, operation, maintenance and use of networks as well as the supervision and administration of cyber security. Under the Cyber Security Law, network operators, who are broadly defined as "owners and administrators of networks and network service providers," are required to take necessary actions to prevent security attacks and data loss, such as:

- formulating internal security management systems and operation manual, to specify the person in charge of cyber security and to define responsibilities in cyber security protection;
- taking technical measures to prevent computer virus, network attacks, network intrusions and other activities that endanger cyber security;
- taking technical measures to monitor and record network operation and cyber security status, and maintaining relevant logs for no less than six months as required;
- taking measures such as data classification, and backup and encryption of important data, etc.; and
- performing other obligations required by relevant laws and administrative regulations.

In addition, the Cyber Security Law specifies that network products and services shall satisfy the mandatory requirements set forth in applicable national standards. Any provider of network products or services shall not install malwares. In case of identifying any cyber security risk such as security defect or bug, relevant product/service provider is required to take immediate remedial actions, timely inform users of the risk, and report the event to the competent authority.

Furthermore, the Cybersecurity Law specifies requirements on user information protection applicable to network operators, and requires that a network operator should establish and improve its user information protection system. Network operators shall collect, store, and use individual information with consent from such individuals by lawful and proper means on a necessary basis. Network operators cannot collect individual user information that is not relevant to the services it provides, or distort or destroy individual information collected by it. Network operators are prohibited from disclosing without permission or selling individual information unless individual specifics are unidentifiable or irretrievable. In addition, a network operator shall strengthen its management of information released by its users. Where any information that comes from outside the territory of China is prohibited by law or regulation, the authorities may request relevant institutions to take measures to stop the flow of such prohibited information. Also, a network operator is required to establish network information security complaint and reporting mechanisms, and to release the complaint and reporting channels to promptly accept and settle complaints and reports concerning network information security.

The Cyber Security Law also emphasizes the protection of key information infrastructure in important industries and fields, such as e-Government, and operators of such key information infrastructure will be subject to stricter security obligations. For example, an operator of key information infrastructures is generally required to store in the PRC personal information and important business data collected and generated during its business operations within the PRC, and to assess its network security and identify potential risks at least once a year. Failure to comply with this requirement may lead to the confiscation of illegal gains, fines, revocation of the business permit or even the business license.

Information Security

As an internet content provider and a network operator, we are subject to regulations relating to the protection of privacy. Under the Internet Measures, internet content providers are prohibited from producing, copying, publishing or distributing information that is humiliating or defamatory to others or that infringes on the lawful rights and interests of others. Internet content providers that violate the prohibition could face criminal charges or administrative sanctions by the PRC security authorities. In addition, relevant authorities may suspend their services, revoke their licenses or temporarily suspend or close down their websites. Under the Several Provisions on Regulating the Market Order of Internet Information Services, issued by the MIIT in December 2011, internet content providers are prohibited from collecting any user-related information that can reveal the identity of the user whether by itself or when used in combination with other information, or providing any such information to third parties without the consent of a user. Internet content providers must expressly inform the users of the method, content and purpose of the collection and processing of such user personal information and may only collect such information necessary for their services. Internet content providers are also required to properly maintain the user personal information and, in case of any leakage or likely leakage of user personal information, must take remedial measures immediately and report any material leakage to the telecommunications regulatory authority. In addition, the Decision on Strengthening Network Information Protection promulgated by the Standing Committee of the National People's Congress in December 2012 emphasizes the need to protect electronic information that contains personal identification information and other private data. The decision requires internet content providers to establish and publish policies regarding the collection and use of personal electronic information and to take necessary measures to ensure the security of the information and to prevent leakage, damage or loss. Furthermore, the MIIT's Rules on Protection of Personal Information of Telecommunications and Internet Users issued in July 2013 contain detailed requirements on the use and collection of personal information as well as the security measures to be taken by internet content providers. The PRC government retains the power and authority to order internet content providers to provide an internet user's personal information if such user posts any prohibited content or engages in any illegal activities through the internet. The Cyber Security Law reiterates the abovementioned regulations and specifies the administrative penalties.

On November 29, 2017, the State Administration for Market Regulation issued the Information Security Technology—Personal Information Security Specification, which came into effect on May 1, 2018. The specification includes a recommendation for the nationwide standards for protection and processing of private personal information, and provides and clarifies the definitions and data processing, disclosure and protection requirements regarding personal information.

Regulations on Employment

There are several principal rules and regulations in the PRC with respect to rights and obligations of employers and labors, including (i) the Labor Law of the People’s Republic of China, promulgated by the Standing Committee of the National People’s Congress effective on January 1, 1995, as most recently amended on December 29, 2018, or the Labor Law, (ii) the Labor Contract Law of the People’s Republic of China, promulgated by the Standing Committee of the National People’s Congress effective on January 1, 2008, as most recently amended on December 28, 2012 or the Labor Contract Law, (iii) the Social Insurance Law of the People’s Republic of China, promulgated by the Standing Committee of the National People’s Congress effective on July 1, 2011, as most recently amended on December 29, 2018, or the Social Insurance Law, and (iv) the Regulations on the Management of Housing Provident Fund, promulgated by the State Council on April 3, 1999, as most recently amended on March 24, 2002, or the Housing Fund Regulations.

According to the Labor Law and the 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, among other things, to establish a system for labor safety and workplace sanitation and provide employees with workplace safety training. Violations of the Labor Law and the Labor Contract Law may result in the imposition of fines and other administrative penalties. For serious violations, criminal liability may arise. In addition, pursuant to the Social Insurance Law and the Housing Fund Regulations, employers in the PRC are required to provide employees with welfare schemes covering pension insurance, unemployment insurance, maternity insurance, work-related injury insurance, medical insurance and housing funds.

Regulations on Taxation

PRC Enterprise Income Tax

PRC enterprise income tax is calculated based on taxable income, which is determined under (i) the PRC Enterprise Income Tax Law, promulgated by the National People’s Congress of China effective on January 1, 2008, as most recently amended on December 29, 2018, or the EIT Law, and (ii) the implementation rules to the EIT Law promulgated by the State Council effective on January 1, 2008. The EIT Law imposes a uniform enterprise income tax rate of 25% on all resident enterprises in the PRC, including foreign-invested enterprises and domestic enterprises, unless they qualify for certain exceptions. According to the EIT Law and its implementation rules, the income tax rate of an enterprise that has been determined to be a high and new technology enterprise may be reduced to 15% with the approval of relevant tax authorities.

In addition, according to the EIT Law, enterprises registered in countries or regions outside the PRC but have their “de facto management bodies” located within China may be considered as 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 only detailed guidance currently available for the definition of “de facto management body” as well as the determination and administration of tax residency status of offshore-incorporated enterprises are set forth in Circular 82, and the Administrative Measures for Enterprise Income Tax of Chinese-Controlled Overseas Incorporated Resident Enterprises (Trial Version), or Bulletin No. 45, both issued by the SAT, which provide 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 all of the following conditions are met:

- the primary location of the day-to-day operational management and the places where they perform their duties are in the PRC;
- decisions relating to the enterprise’s financial and human resource matters are made or are subject to approval of organizations or personnel in the PRC;
- the enterprise’s primary assets, accounting books and records, company seals and board and shareholder resolutions are located or maintained in the PRC; and
- 50% or more of voting board members or senior executives habitually reside in the PRC.

Bulletin No. 45 further clarifies certain issues related to the determination of tax resident status and competent tax authorities. It also specifies that when provided with a copy of Recognition of Residential Status from a resident Chinese-controlled offshore-incorporated enterprise, a payer does not need to withhold a 10% income tax when paying certain PRC-sourced income such as dividends, interest, royalties and income from the transfer of assets to such Chinese-controlled offshore-incorporated enterprise. 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.

The Arrangement Between the PRC and the Hong Kong Special Administrative Region for the Avoidance of Double Taxation and Prevention of Fiscal Evasion With Respect to Taxes on Income is promulgated by the SAT and implemented on December 8, 2006. This arrangement reduces withholding tax rate in respect of the payment of dividends by a PRC enterprise to a Hong Kong enterprise from a standard rate of 10% to 5% if the Hong Kong enterprise directly holds at least 25% of the PRC enterprise. Pursuant to the Notice of the State Administration of Taxation on the Issues concerning the Application of the Dividend Clauses of Tax Agreements, or Circular 81 a Hong Kong resident enterprise must meet the following conditions, among others, in order to enjoy the reduced withholding tax rate: (i) it must be a company; (ii) it must directly own the required percentage of equity interests and voting rights in the PRC resident enterprise; and (iii) it must have directly owned such required percentage in the PRC resident enterprise throughout the 12 months prior to receiving the dividends. Furthermore, the Administrative Measures for Non-Resident Taxpayers to Enjoy Treatments under Tax Treaties, or Non-Resident Tax Treatments Measures, which became effective in November 2015, require that non-resident taxpayers must report and submit the relevant statements and materials specified in this measure and be administrated and supervised subsequently by the relevant tax authority in order to enjoy the reduced withholding tax rate. There are also other conditions for enjoying the reduced withholding tax rate pursuant to other applicable tax rules and regulations.

Income Tax for Share Transfers

According to the Announcement of the State Administration of Taxation on Matters Concerning Withholding of Enterprise Income Tax of Non-Resident Enterprises at Source, or SAT Circular 37, promulgated by the SAT on October 17, 2017, as most recently amended on June 15, 2018, and the Announcement of the State Administration of Taxation on Several Issues Concerning the Enterprise Income Tax on Indirect Property Transfer by Non-Resident Enterprises, or Circular 7, promulgated by the SAT on February 3, 2015, as most recently amended on December 29, 2017, if a non-resident enterprise transfers the equity interests of a PRC resident enterprise indirectly by transfer of the equity interests of an offshore holding company (other than a purchase and sale of shares issued by a PRC resident enterprise in public securities market) without a reasonable commercial purpose, the PRC tax authorities have the power to reassess the nature of the transaction and the indirect equity transfer will be treated as a direct transfer. As a result, the gain derived from such transfer, which means the equity transfer price less the net value of equity, will be subject to PRC withholding tax at a rate of up to 10%. Under the terms of Circular 7, the transfer which meets all of the following circumstances shall be directly deemed as having no reasonable commercial purposes: (i) over 75% of the value of the equity interests of the offshore holding company are directly or indirectly derived from PRC taxable properties; (ii) at any time during the year before the indirect transfer, over 90% of the total properties of the offshore holding company are investments within PRC territory, or in the year before the indirect transfer, over 90% of the offshore holding company’s revenue is directly or indirectly derived from PRC territory; (iii) the function performed and risks assumed by the offshore holding company are insufficient to substantiate its corporate existence; and (iv) the foreign income tax imposed on the indirect transfer is lower than the PRC tax imposed on the direct transfer of the PRC taxable properties.

There is uncertainty as to the application of SAT Circular 37 and Circular 7. SAT Circular 37 and Circular 7 may be determined by the PRC tax authorities to be applicable to our prior private equity financing transactions that involved non-resident investors, if any of such transactions were determined by the tax authorities to lack reasonable commercial purpose. As a result, we and our non-resident investors in such transactions may become at risk of being taxed under SAT Circular 37 and Circular 7, and we may be required to expend valuable resources to comply with SAT Circular 37 and Circular 7 or to establish that we should not be taxed under the general anti-avoidance rule of the EIT Law, which may have a material adverse effect on our financial condition and results of operations.

Value Added Tax and Business Tax

Pursuant to the Provisional Regulations on Value-Added Tax of the PRC (Revision 2017), and its implementation regulations, unless otherwise specified by relevant laws and regulations, any entity or individual engaged in the sales of goods or processing, repairs and replacement services, sale of services, intangible assets, immovables, and importation of goods into China is generally required to pay a value-added tax, or VAT, for revenues generated from sales of products, while qualified input VAT paid on taxable purchase can be offset against such output VAT.

In November 2011, the Ministry of Finance and the State Administration of Taxation promulgated the Pilot Plan for Imposition of Value-Added Tax to Replace Business Tax, or the Pilot Plan. In March 2016, the Ministry of Finance and the State Administration of Taxation further promulgated the Notice on Fully Promoting the Pilot Plan for Replacing Business Tax by Value-Added Tax, which became effective on May 1, 2016. In November 2017, the State Council promulgated the Decision of State Council on Abolition of the Provisional Regulations of the People's Republic of China on Business Tax and Revision of the Provisional Regulations of the People's Republic of China on Value-added Tax, or the Decision. Pursuant to the Pilot Plan and relevant notices and the Decision, VAT is generally imposed in the modern service industries on a nationwide basis and the Provisional Regulations of the People's Republic of China on Business Tax has been abolished. VAT of a rate of 6% applies to revenue derived from the provision of some modern services. If the services provided are related to technology development and transfer, such VAT may also be exempted subject to the approval of relevant tax authorities. Unlike business tax, a taxpayer is allowed to offset the qualified input VAT paid on taxable purchases against the output VAT chargeable on the modern services provided.

Dividends Withholding Tax

We are a Cayman Islands holding company and substantially all of our income may come from dividends we receive from our PRC subsidiary. Pursuant to the EIT Law and its implementation rules, dividends generated after January 1, 2008 and distributed to us by our PRC subsidiary are subject to withholding tax at a rate of 10%.

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.

Regulations on Foreign Exchange

The Regulations of the People's Republic of China on Foreign Exchange Control, promulgated by the State Council on January 29, 1996 and as most recently amended on August 5, 2008, are principal regulations on foreign currency exchange in the PRC. Under these regulations, the RMB is freely convertible for current account items after due process, including distribution of dividends, trade-related foreign exchange transactions and service-related foreign exchange transactions, whereas foreign exchange for capital account items, such as direct investments or loans, requires prior approval of and registration with the SAFE.

Capital Settlement and Overseas Remittance of Foreign-Invested Enterprises

On June 1, 2015, the Notice of the State Administration of Foreign Exchange on Reforming the Administrative Approach Regarding the Settlement of the Foreign Exchange Capitals of Foreign-invested Enterprises came into effect and then was specified by the Notice of the State Administration of Foreign Exchange on Reforming and Standardizing the Administrative Provisions on Capital Account Foreign Exchange Settlement promulgated on June 9, 2016, which helps further deepen the reform of the foreign exchange administration system and better satisfy and facilitate the needs of foreign-invested enterprises for business and fund operations. This notice allows foreign-invested enterprises to settle their foreign exchange capitals on a discretionary basis. Moreover, the Provisions on Foreign Exchange Administration Over Direct Investment Made by Foreign Investors in the PRC were promulgated by the SAFE on May 10, 2013 in order to promote and facilitate foreign investors to make direct investment in the PRC, which allow a foreign-invested enterprise that needs to remit funds abroad to purchase and remit foreign exchange with the relevant bank due to capital reduction, liquidation, advance recovery of investment, profit distribution, etc. after due registration.

SAFE promulgated the Circular on Further Improving Reform of Foreign Exchange Administration and Optimizing Authenticity and Compliance Verification, or SAFE Circular 3, effective on January 26, 2017. SAFE Circular 3 relaxes the policy restriction on foreign exchange inflow to further enhance trade and investment facilitation, including expanding the scope of foreign exchange settlement for domestic foreign exchange loans, allowing the capital repatriation for offshore financing backed by domestic guarantee, facilitating the centralized management of foreign exchange funds of multinational companies, and allowing the offshore institutions within pilot free trade zones to settle foreign exchange in domestic foreign exchange accounts. SAFE Circular 3 also tightens the authenticity and compliance verification process of cross-border transactions and cross-border capital flow, such as requiring banks to verify board resolutions, tax filing form, and audited financial statements before wiring foreign invested companies' foreign exchange distribution above US\$50,000.

Outbound Investment, Financing and Roundtrip Investment

On July 4, 2014, the Circular on the Relevant Issues Concerning Foreign Exchange Control on Domestic Residents Outbound Investment and Financing and Roundtrip Investment through Special Purpose Vehicles came into effect, which was promulgated by the SAFE to make full use of domestic and international resources and markets. This circular prescribes operational procedures and registration requirements for roundtrip investment through special purpose companies and others. In particular, it states that a domestic resident shall apply to the relevant local branch of the SAFE for foreign exchange registration of overseas investment, prior to making contribution to a special purpose company with legitimate domestic or overseas assets or interests.

Equity Incentive Plans

On February 15, 2012, the Circular of SAFE on Relevant Issues Concerning the Foreign Exchange Administration for Domestic Individuals' Participation in Equity Incentive Plans of Overseas-Listed Companies came into effect. This notice prescribes foreign exchange procedural requirements for domestic individuals such as directors, supervisors, officials and other employees in relation to equity incentive plans of companies listed abroad, including employee stock ownership plans, employee stock option plans and other equity incentive programs permitted by applicable laws and regulations. Under the notice, individuals who participate in equity incentive plans of the same overseas listed company shall, through the domestic companies they serve, collectively entrust a domestic agency to handle matters such as foreign exchange registration with the SAFE, account opening, and funds transfer and remittance, and entrust an overseas institution to handle matters such as exercise of options, purchasing and sale of related equity and funds transfer. Besides, an individual may use his/her own foreign currency funds in his/her personal foreign currency deposit account, RMB funds or other legitimate domestic funds to participate in an equity incentive plan.

Regulations on Dividend Distribution

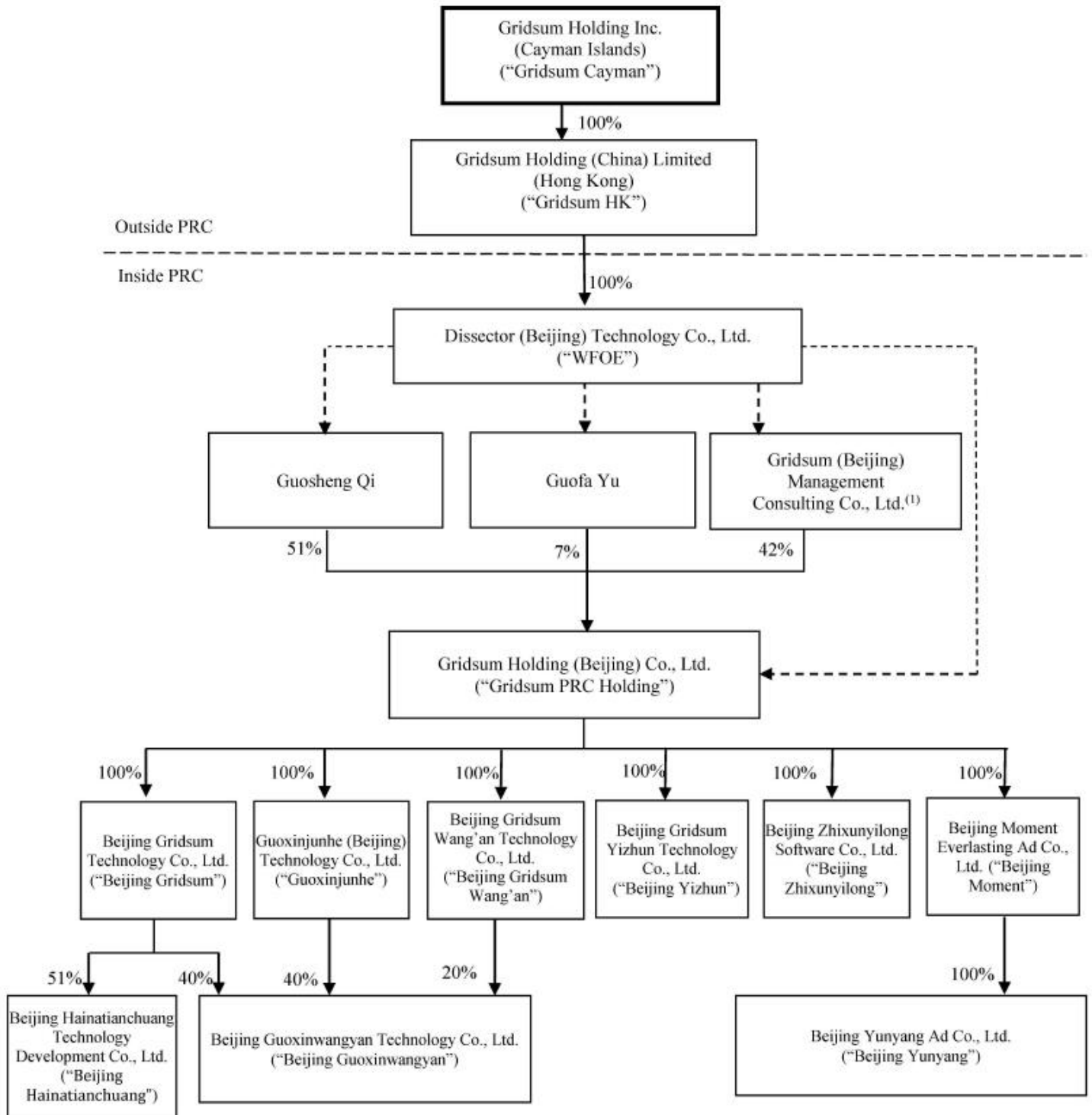
The principal legislation with respect to payment or distribution of dividends by wholly foreign-owned enterprises includes (i) the Company Law of the People's Republic of China, most recently amended by the Standing Committee of the National People's Congress as of October 26, 2018, and (ii) Wholly Foreign-Owned Enterprise Law of the People's Republic of China, promulgated on April 12, 1986 and most recently amended on September 3, 2016 by the Standing Committee of the National People's Congress, and its implantation rules. Under these laws, wholly foreign-owned enterprises in the PRC may pay dividends only out of accumulated profits, after setting aside annually at least 10% of accumulated after-tax profits as reserve fund, if any, until such time as the accumulative amount of such fund reaches 50% of the enterprise's registered capital. A wholly foreign-owned enterprise may allocate a portion of its after-tax profits to its employee welfare and bonus funds at its discretion. These reserve funds may not be distributed as cash dividends.

Seasonality

We experience seasonality in the sale of our solutions, with generally higher sales in the fourth quarter typically followed by a decline or low sequential growth of net revenues in the first quarter. Sales and marketing expenses typically increase towards the end of the year as a result of commissions. Overall, the historical seasonality of our business has been relatively mild but may increase further in the future. Due to our limited operating history, the seasonal trends that we have experienced in the past may not be indicative of our future operating results.

C. Organizational Structure

The following diagram illustrates our corporate structure, including our significant subsidiaries and consolidated affiliated entities:



—— Equity interest

----- Contractual arrangements including an Exclusive Business Cooperation Agreement, Exclusive Option Agreements, Shareholders' Voting Rights Proxy Agreements and Equity Pledge Agreements

(1) Gridsum (Beijing) Management Consulting Co., Ltd. is a holding company owned by Guosheng Qi and other key employees, who own 57.34% and 42.66% of this entity, respectively

Contractual Arrangements with Gridsum PRC Holding and its Shareholders

The following is a summary of the currently effective contractual arrangements among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding:

Exclusive Business Cooperation Agreement

Under the Exclusive Business Cooperation Agreement dated December 22, 2014 between the WFOE and Gridsum PRC Holding, Gridsum PRC Holding has appointed the WFOE as its exclusive provider of complete technical support, business support and related consulting services, and, without prior written consent of the WFOE, may not accept the same or similar services provided by, or establish similar cooperation relationship with, any other party. In consideration of the services provided by the WFOE, Gridsum PRC Holding shall pay the WFOE, on a quarterly basis, service fees equal to 90% of Gridsum PRC Holding's net income (which equals gross income less mutually agreed costs). The parties can reasonably adjust the calculation ratio of such service fees. The WFOE shall have exclusive and proprietary rights and interests in all rights, ownership, interests and intellectual properties owned and used by WFOE during the performance of the agreement. The term of the agreement is 10 years and may be extended if confirmed in writing by the WFOE prior to expiration (and Gridsum PRC Holding shall unconditionally accept such extension). Gridsum PRC Holding shall not terminate the agreement prior to its expiration, unless the WFOE commits gross negligence or fraudulent act against Gridsum PRC Holding, whereas the WFOE may terminate the agreement upon giving 30 days' prior written notice to Gridsum PRC Holding at any time.

Exclusive Option Agreements

Under the Exclusive Option Agreements, each dated December 22, 2014, among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding granted to the WFOE an irrevocable and exclusive right to purchase, or designate other person(s) to purchase, to the extent permitted by PRC laws, at any time all or part of such shareholders' equity interests in Gridsum PRC Holding. The purchase price shall be equal to RMB10.00 multiplied by the ratio of the equity interests to be purchased to the total registered capital of Gridsum PRC Holding, or, if there is any mandatory provision regarding the purchase price under PRC laws, then at the election of the WFOE or its designated person, the lowest price permitted by PRC laws. Without the WFOE's prior written consent, Gridsum PRC Holding shall not: (i) supplement, change or amend its articles of association, increase or decrease its registered capital or change its capital structure in any manner, (ii) sell, transfer, mortgage or dispose of, or create security interest on, any of its assets, business or legal right to collect interests, (iii) create, succeed to, guarantee or permit any debt, except for debts arising in the course of ordinary or daily business operation, (iv) enter into any material contract (i.e., any contract with a value exceeding RMB1,000,000), (v) provide loan or credit to any person, (vi) merge or combine with, buy or invest in, any other person or (vii) distribute dividends to its shareholders; and the shareholders of Gridsum PRC Holding shall not sell, transfer, mortgage or dispose of, or create security interest on, such shareholders' legal or beneficial interest in the equity interests in Gridsum PRC Holding without the prior written consent of the WFOE, except in accordance with the terms of the Equity Pledge Agreements described below. The term of each of the agreements is 10 years and may be renewed at the WFOE's election.

Shareholders' Voting Rights Proxy Agreements

Under the Shareholders' Voting Rights Proxy Agreements, each dated December 22, 2014, among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding irrevocably authorized the WFOE or its designee to act on their behalf as their exclusive agent and attorney with respect to all matters concerning their shareholder rights, as shareholders of Gridsum PRC Holding, including without limitation to propose, convene and attend shareholder meetings as proxy of such shareholders, and to exercise all of such shareholder's voting rights provided under PRC laws or the articles of association of Gridsum PRC Holding. Each agreement will remain effective until all equity interests of the respective shareholder in Gridsum PRC Holding have been transferred to the WFOE and the related regulatory process has been completed.

Equity Pledge Agreements

Under the Equity Pledge Agreements, each dated December 22, 2014, among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding pledged all of their equity interests in Gridsum PRC Holding to the WFOE as security for, among other things, the performance of the obligations of Gridsum PRC Holding and its shareholders under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreements and the Shareholders' Voting Rights Proxy Agreements. In the event of any breach of any secured obligations by Gridsum PRC Holding or the respective shareholder, the WFOE is entitled to all remedial rights and powers afforded under PRC laws, including to be repaid in priority with proceeds from auctions or sale-offs of the pledged equity. Dividends may only be paid to the shareholders of Gridsum PRC Holdings in respect of the pledged equity with the prior consent of the WFOE, and the dividends received by the shareholders shall first be applied to satisfy the secured obligations. The pledges will be released upon the full and complete performance of the secured obligations and the full payment of losses and fees resulting from a breach of those agreements by Gridsum PRC Holding or its shareholders. The equity pledges have been registered with local registration authority in accordance with PRC laws.

In the opinion of Merits & Tree Law Offices, our PRC counsel, (a) the ownership structures of the WFOE, Gridsum PRC Holding and the subsidiaries of Gridsum PRC Holding do not violate applicable PRC laws; and (b) each agreement pertaining to the contractual arrangements among the WFOE, Gridsum PRC Holding and its shareholders is valid, binding and enforceable in accordance with its terms under applicable PRC laws, and does not violate applicable PRC laws. However, there are substantial uncertainties regarding the interpretation and application of current and future PRC laws and regulations, and there can be no assurance that the PRC government will take a view that is not contrary to or otherwise different from the opinion of our PRC counsel. If the PRC government finds that the agreements that establish the structure for operating our business do not comply with PRC government restrictions on foreign investment in the business we engage in, we could be subject to severe penalties, including being prohibited from continuing operations. See “Item. 3 Key Information—D. Risk Factors—Risks Relating to Our Corporate Structure—We conduct our businesses in China by means of contractual arrangements through a variable interest entity and its subsidiaries. If the PRC government determines that such arrangements do not comply with applicable laws and regulations, our business could be materially adversely affected,” “Item. 3 Key Information—D. Risk Factors—Risks Relating to Doing Business in China—Uncertainties in the interpretation and enforcement of PRC laws and regulations could limit the legal protections available to our shareholders and us.” and “Item. 3 Key Information—D. Risk Factors—Risks Relating to Our Corporate Structure—Substantial uncertainty exists with respect to the interpretation and implementation of the PRC Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.”

D. Property, Plants and Equipment

Facilities

Our corporate headquarters, which includes sales, marketing, business operations and executive offices, is located in Beijing, China and consists of approximately 9,933 square meters of office space under 18 leases that will expire beginning in November 29, 2019. In addition to our headquarters, we lease space in Shanghai, Guangzhou, Shenzhen, Chengdu and Xi’an. In addition, we maintain data centers in Beijing and Shanghai.

We lease all of our facilities and do not own any real property. We intend to procure additional space as we add employees and expand geographically. We believe our facilities are adequate and suitable for our current needs and that, should it be needed, suitable additional or alternative space will be available to accommodate any such expansion of our operations.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion and analysis of our financial condition and results of operations is based upon and should be read in conjunction with our audited consolidated financial statements 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 many factors, including those set forth under “Item 3. Key Information—D. Risk Factors” and elsewhere in this annual report.

A. Operating Results

Overview

Gridsum is a leading provider of sophisticated data analysis software for multinational and domestic enterprises and government agencies in China. Our proprietary distributed data architecture allows our customers to efficiently collect and analyze vast amounts of information that is collected, indexed and stored in an organized manner, or structured data, and information that is not organized, or unstructured data. Our core technology, the Gridsum Big Data Platform and the Gridsum Prophet: Enterprise AI Engine, with its machine learning and AI capability, performs multi-dimensional correlation analysis and analyzes complex real-time events. With the support of our Big Data Platform and the Gridsum Prophet, our customers use our data visualization and data-mining technologies to identify complex relationships within their data and gain new insights that help them make better business decisions.

Our leading position is based on our solutions and our core technologies. Our software products are designed for a variety of commercial and governmental applications. To help our enterprise customers reach China's large and growing online and mobile population, our initial products have focused on digital marketing analytics and automation solutions. We were among the first companies to offer web analytics solutions based on data warehouse technology, and we were among the first digital intelligence companies in China to build solutions entirely on a distributed data warehouse architecture using the open-source Hadoop framework. By leveraging the analytic capabilities of our Big Data Platform and the Gridsum Prophet, we have developed additional software solutions, including new media analytics and information discovery solutions, to address a broad range of customer needs. In 2018, our customers included Fortune 500 and China 500 enterprises, comprising 539 customers across diverse industries, including 10 Chinese government agencies.

We are exclusively dedicated to developing proprietary technologies and solutions in digital intelligence. In 2009, we launched Web Dissector, our first digital intelligence solution, and our first Web Dissector customer remains a customer today. Since 2009, we have released a series of solutions based on our Big Data Platform, including SEM Dissector, SEO Dissector, Mobile Dissector, Contribution Dissector, Streaming Dissector, Video Dissector, Government Web Dissector, Media Dissector and Law Dissector. In 2014, we launched ADSUITE, a fully integrated package through which customers can access all our marketing automation solutions. In October 2016, we launched our social listening solution. It is a cloud-based service that enables an enterprise customer to monitor and analyze web and social media posts regarding the brand, products, customer service of the customer and its competitors. It also provides sentiment analysis and generates alerts from those posts. In November 2017, we, in cooperation with Tencent and the PRC People's Court Press, launched our Faxin Wei Su Platform, a litigation service on WeChat's micro application platform. It provides integrated online litigation and remote trial handling services in China, enabling both the courts and litigants to join a trial remotely through our Faxin Wei Su platform. In December 2017, we launched our Intelligent CRM Solution. The Intelligent CRM Solution is a cloud-based, marketing-centric CRM solution tailor-made for both multinational and local companies operating in China, enabling our clients to leverage both online and offline data derived from their digital marketing and sales divisions and customers' digital footprints, to drive sales and close orders in a more efficient and KPI-enhancing manner.

We grew rapidly in earlier periods and in 2018 experienced a decline in the level of our business activity and related revenue. Our net revenues were RMB363.8 million, RMB469.5 million and RMB431.2 million (US\$62.7 million) in 2016, 2017 and 2018, respectively, representing year-over-year growth of 29% from 2016 to 2017 and a decline of 8% from 2017 to 2018. We continue to make expenditures and investments, including in our technologies, personnel, sales and marketing, infrastructure and operations, incurring net losses of RMB98.6 million, RMB239.1 million and RMB522.5 million (US\$76.0 million) in 2016, 2017 and 2018, respectively. Our employee headcount increased from 929 employees as of December 31, 2016 to 1,192 employees as of December 31, 2018. We had 395 customers, 505 customers and 539 customers in 2016, 2017 and 2018, respectively.

We deliver our solutions as cloud-based software-as-a-service, or SaaS, offerings that are easy to deploy, easy to access, automatically updated without disruption, and enable our customers to reduce IT support costs by outsourcing hardware and software maintenance and support. We account for our revenues on a net basis, based on the fees our customers pay us without including any amounts they pay third parties for advertising or other services. We charge most customers based on percentage of their spending on our system in the bid management application or the volume of data being processed (e.g., page views or viewer views). When we provide our data analytics solutions with bid management functionality, we charge customers based on a percentage of their ad spending with search engine providers. For example, a customer utilizing our bid management software to optimize performance of its search engine marketing campaign would pay us a service fee calculated as a negotiated percentage of its ad spending through our software. When we offer our data analytics solutions to customers without reference to ad spending, we typically charge them negotiated variable amounts based on the monthly volume of data processed. We arrive at an annual data volume estimate before the engagement commences, and charge a fee for a predetermined base number of page views or viewer views. If the volume of the data processed exceeds the base, we charge progressively for the additional usage. To satisfy some of our customers' needs, we set a fee cap based on negotiation, subject to annual adjustment, or negotiate fixed-fee based contracts with them. In 2018, 47% of our revenues were recognized based on capped or fixed-fee arrangements. For our marketing automation solutions, we earn and record service fee revenues over the contractual period, in proportion to ad spending or the completion of milestones that are stipulated in the contracts. In addition, we receive revenues from the incentive programs of search engine providers based on factors determined by them, such as yearly growth in the amount of advertising on the provider's search engine platform that our customers purchase through our solutions and other factors selected at the discretion of these providers. Revenues from these programs are received on both a quarterly and an annual basis. A majority of our customer contracts have terms of one year and may be renewed. Our gross margin in 2016, 2017 and 2018 was 85%, 80% and 77%, respectively.

Factors Affecting Our Results of Operations

Investment in Expansion and Penetration of Our Customer Base

Our performance depends on our ability to continue to attract new customers and expand usage of our products by existing customers. We had 395 customers, 505 customers and 539 customers in 2016, 2017 and 2018, respectively. For the foreseeable future, we expect that our revenue growth will be primarily driven by the pace of adoption of our products and we will incur significant expenses associated with educating the market about the benefits of our products. In order to support this effort, we have grown our sales and marketing team, which consists of our sales personnel and customer service consultants, from a total of 393 employees as of December 31, 2016 to 410 employees as of December 31, 2017, and to 571 employees as of December 31, 2018. We intend to expand our marketing efforts to increase our awareness of our solutions and our brand.

Investment in Innovation

Our performance is significantly dependent on the investments we make in research and development to innovate, improve functionality, develop new technologies, and adapt to new technologies or changes to existing technologies. Our product innovation and development allows our customers to analyze growing volumes and variety of data in new ways. Our research and development team included 418 employees as of December 31, 2016, 546 employees as of December 31, 2017, and 491 employees as of December 31, 2018. In late 2018, we reorganized the research and development team and reallocated around 80 customer service-oriented delivery engineers to our sales and marketing team. We intend to continue to invest in product innovation and leadership, including hiring top technical talent, focusing on core technology innovation and product development and new industry verticals. One area of focus in the near term is development of solutions in the legal and financial services verticals and IIoT based on our Gridsum Big Data Platform and Gridsum Prophet. Another area of focus is the development of integrated solutions in data analytics, information discovery, and data visualization. We do not expect to realize material revenues from these development initiatives in the near term.

Investment in Infrastructure

We have made substantial investments in our infrastructure, and expect to continue to make such investments. For example, we expect to make investments in infrastructure such as data centers, network bandwidth and technical operations personnel. In response to the heightened data security requirements for our e-Government customers, particularly in the judicial system, in 2017 and 2018 we outsourced some of our software optimization and data security enhancement work to two China-based specialist companies in this field, and incurred expenses relating to such outsourced service. We also expect to make additional investments in our infrastructure as we continue to develop our capabilities across our product range.

Development of the SaaS Enterprise Software Industry in China

Our revenues are significantly affected by the growth in demand for enterprise SaaS software in China. Such demand is dependent on many factors, including the economic growth in the industries in which our customers operate and the overall adoption of SaaS solutions among enterprises and government agencies in China. Our performance will also depend on the emergence of future competition from multinational and domestic software providers in China. In addition, government policy and regulation of China's software industry may affect our results of operations.

Trends in Key Performance Indicators

We review the following key metrics to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions:

Average Customer Contribution

We calculate average customer contribution by dividing total net revenues in a period by the total number of customers for the same period. We monitor average customer contribution as a measure of our cross selling and upselling of our new solutions. Our average customer contribution was RMB0.9 million, RMB0.9 million and RMB0.8 million (US\$0.1 million) in 2016, 2017 and 2018, respectively, representing an increase of 1% from 2016 to 2017 and a decrease of 14% from 2017 to 2018.

Customers

We define a customer in a period as a single organization that purchases our products and solutions and with respect to which we recognize revenue during such period. A single customer may have multiple paid business accounts for separate divisions, segments or subsidiaries, but all entities that are part of the same corporate structure are counted as a single customer. We periodically review and optimize our customer portfolio. In 2016, 2017 and 2018, we had 395, 505 and 539 customers, respectively. No single customer represented 10% or more of our total net revenues in 2016, 2017 or 2018. The majority of our revenues were generated by sales to existing customers.

Key Components of Results of Operations

Net Revenues

Net revenues consist of revenues recognized from customers that used our software solutions during the period, including net revenues that we receive from the incentive programs of search engine providers, less business taxes and surcharges. In the near term, we may experience slower growth in net revenue in some periods. We expect our net revenues to increase over the long term as more customers adopt our solutions and demand more business intelligence to improve their operational efficiency, and as we continue to bring more innovative solutions to market and serve our customers.

Cost of Revenues

Cost of revenues consists primarily of personnel and personnel-related expenses for our customer service consultants, who work closely with our customer sales, marketing, IT and other operating professionals to help customers optimize the performance of their accounts, and periodically provide in-depth analyses for customers. Personnel costs consist of salaries, benefits, bonuses and share-based compensation. Cost of revenues also includes data center expenses, office and overhead costs, outsourcing cost, bandwidth costs, and depreciation expenses related directly to providing services to customers. We plan to continue increasing the capacity, capability and reliability of our infrastructure to support the growth of our customer base and the number of products we offer. We expect that, for the foreseeable future, our cost of revenues will increase in absolute amount but fluctuate as a percentage of our net revenues.

Gross Profit and Gross Margin

Gross profit is net revenues less cost of revenues; gross margin is gross profit as a percentage of net revenues. Our gross margin has been, and will continue to be, affected by many factors, including the timing and extent of our investments in our operations and personnel, outsourcing costs, hosting-related costs and other depreciation expense allocations. The increased utilization of outsourcing is likely to reduce our gross margin. We expect that our gross margin will fluctuate from period to period.

Operating Expenses

Our operating expenses consist of sales and marketing, research and development, and general and administrative expenses. For each category, the most significant component of our operating expenses are personnel costs, which consist of salaries, benefits, bonuses, share-based compensation, and for sales and marketing expenses, sales commissions. We also incur other non-personnel costs such as an allocation of our general overhead expenses, and collaboration with third parties to develop and launch new solutions.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of personnel costs for our sales, marketing and business development employees and executives. Commissions are expensed in the period when a customer contract is executed. Sales and marketing expenses also include the costs of our marketing and brand awareness programs. We plan to continue investing in sales and marketing by increasing the number of our sales personnel, expanding our marketing activities, building brand awareness and sponsoring additional marketing events. We expect our sales and marketing expenses to continue to increase in absolute amount. However, we expect our sales and marketing expenses to decrease as a percentage of net revenues over the long term, although our sales and marketing expenses may fluctuate from period to period depending on fluctuations in net revenues and the timing of our sales and marketing expenses.

Research and Development Expenses

Research and development expenses consist primarily of personnel costs, allocation of general overhead expenses and outsourcing expenses, and collaboration with third-party vertical specialists. We continue to focus our research and development efforts on adding new features and products and on improving the functionality and ease of use of our existing products. In addition, we invest aggressively in the research and development of the infrastructure layer of software technologies, which will benefit us in the long run. We expense all our software development costs as they are incurred. We plan to continue to hire employees for our engineering, product management and consulting teams to support our research and development efforts, particularly in our legal services, intelligent CRM and IIoT solutions, addressing three verticals where we intend to introduce advanced solutions. We believe the peak investment period was in 2018, and as a result, we expect our research and development expenses to decline in absolute amount in 2019, and modestly increase afterwards in the near term. We expect our research and development expenses to decrease modestly as a percentage of net revenues over the long term, with variation from period to period depending on fluctuations in net revenues and the timing and extent of our research and development expenses.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs for our administrative, legal, human resources, information technology, finance and accounting employees and executives, along with legal and other professional fees. We plan to continue to expand our business in China, and we expect to increase the size of our general and administrative function to support the growth of our business and the complexities of being a public company. As a result, we expect our general and administrative expenses to increase in absolute amount for the foreseeable future. We expect our general and administrative expenses as a percentage of net revenues to decrease modestly over the long term, although it may fluctuate from period to period depending on fluctuations in our net revenues and the timing and extent of our general and administrative expenses.

Other Income/(Expense), Net

Other income/(expense), net consists primarily of interest income, net, and foreign exchange gain or loss.

Results of Operations

The following table sets forth a summary of our consolidated results of operations for the periods indicated. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. Due to our limited operating history, period-to-period comparisons discussed below may not be meaningful or indicative of our future trends.

	For the Year Ended December 31,			
	2016	2017	2018	
	RMB	RMB	RMB	US\$
(in thousands)				
Consolidated Statements of Operations Data:				
Revenues:				
Enterprise	311,106	377,013	387,574	56,370
e-Government and other	60,772	102,216	53,117	7,726
Less: Business tax and surcharges	(8,055)	(9,696)	(9,444)	(1,374)
Net revenues	363,823	469,533	431,247	62,722
Cost of revenues ⁽¹⁾	(55,707)	(94,640)	(100,867)	(14,670)
Gross profit	<u>308,116</u>	<u>374,893</u>	<u>330,380</u>	<u>48,052</u>
Operating expenses:				
Sales and marketing expenses ⁽¹⁾	(139,781)	(192,413)	(166,176)	(24,169)
Research and development expenses ⁽¹⁾	(160,387)	(257,921)	(533,586)	(77,607)
General and administrative expenses ⁽¹⁾	(88,108)	(143,743)	(182,289)	(26,513)
Total operating expenses	<u>(388,276)</u>	<u>(594,077)</u>	<u>(882,051)</u>	<u>(128,289)</u>
Loss from operations	<u>(80,160)</u>	<u>(219,184)</u>	<u>(551,671)</u>	<u>(80,237)</u>

	For the Year Ended December 31,			
	2016	2017	2018	
	RMB	RMB	RMB	US\$
	(in thousands)			
Consolidated Statements of Operations Data:				
Other income/(expense):				
Foreign currency exchange gain/(loss)	(1,600)	(8,552)	(9,719)	(1,414)
Interest income/(expense), net	(614)	(5,430)	(9,878)	(1,437)
Other income/(expense), net	(1,452)	(1,683)	1,005	146
Amortization of debt discount	—	—	(25,337)	(3,685)
Gain on change in fair value of derivative liabilities	—	—	57,890	8,420
Loss before income tax	(83,826)	(234,849)	(537,710)	(78,207)
Income tax expense	(14,801)	(4,275)	15,165	2,206
Net loss	(98,627)	(239,124)	(522,545)	(76,001)

(1) Share-based compensation was allocated in costs and operating expenses as follows:

	For the Year Ended December 31,			
	2016	2017	2018	
	RMB	RMB	RMB	US\$
	(in thousands)			
Cost of revenues	319	501	801	117
Sales and marketing expenses	2,252	4,739	6,810	990
Research and development expenses	3,955	8,641	16,310	2,372
General and administrative expenses	4,104	9,046	15,105	2,197
Total	10,630	22,927	39,026	5,676

Year Ended December 31, 2017 Compared to Year Ended December 31, 2018

Net Revenues

	For the Year Ended December 31,			Change	
	2017	2018		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Revenues:					
Enterprise	377,013	387,574	56,370	10,561	3%
e-Government and other	102,216	53,117	7,726	(49,099)	(48)%
Less: Business tax and surcharges	(9,696)	(9,444)	(1,374)	252	(3)%
Net revenues	469,533	431,247	62,722	(38,286)	(8)%

Net revenues decreased by RMB38.3million, or 8%, from 2017 to 2018, including a 3% increase in enterprise revenues and a 48% decrease in e-Government and other revenues. Total customers increased 7%, to 539 customers in 2018 from 505 customers in 2017.

Enterprise revenues increased by RMB10.6 million, or 3%, to RMB387.6 million to RMB377.0 million in 2017, reflecting improved sales of Social Listening solutions in the first half of the year and a general decline in enterprise revenues in the second half of the year that was mainly due to customer attrition and prolonged contract renewal processes associated with delayed filing of our periodic reports with the SEC and general economic conditions in China. Enterprise customers increased 11%, from 447 to 496, and average enterprise customer contribution decreased from RMB843 thousand in 2017 to RMB781 thousand in 2018.

E-Government and other revenues decreased by RMB49.1 million, or 48%, due to a decrease in average e-Government and other customer contribution from approximately RMB1.8 million to RMB1.2 million, and a decrease in the number of e-Government and other customers from 58 to 43 primarily as a result of government reorganization activities in 2018.

Cost of Revenues

	For the Year Ended December 31,			Change	
	2017	2018		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Cost of revenues	(94,640)	(100,867)	(14,670)	(6,227)	7%

Cost of revenues increased by RMB6.2 million, or 7%, from 2017 to 2018. The increase was primarily as a result of a RMB5.8 million increase in product and solution-related outsource service fees and a RMB5.4 million increase in personnel and related costs, partially offset by a RMB5.0 million decrease in technical service fees. The increase in the cost of product and solution-related outsource service fees was mainly related to the outsourcing of some of our search engine optimization and social media optimization services, so that we could reassign internal resources to research and development activities. The increase in cost of revenues was also attributable to an increase of our personnel costs associated with helping customers optimize the performance of our solutions, and provide periodic in-depth analyses for customers. The decrease in technical service fees was mainly attributable to the decrease of system-related maintenance services for system optimization and data security after heavier investment in prior periods.

Gross Profit

Gross profit decreased by RMB44.5 million, or 12%, from 2017 to 2018, and gross margin decreased from 80% in 2017 to 77% in 2018.

Operating Expenses

	For the Year Ended December 31,			Change	
	2017	2018		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Operating expenses:					
Sales and marketing expenses	(192,413)	(166,176)	(24,169)	26,237	(14)%
Research and development expenses	(257,921)	(533,586)	(77,607)	(275,665)	107%
General and administrative expenses	(143,743)	(182,289)	(26,513)	(38,546)	27%
Total operating expenses	<u>(594,077)</u>	<u>(882,051)</u>	<u>(128,289)</u>	<u>(287,974)</u>	<u>48%</u>

Sales and Marketing Expenses

Sales and marketing expenses decreased by RMB26.2 million, or 14%, from 2017 to 2018, primarily due to a RMB27.3 million decrease in industry research expenses, a RMB14.9 million decrease in advertising expense, a RMB5.4 million decrease in meal and entertainment expenses, and a RMB2.1 million decrease in meeting related expenses, which were partially offset by a RMB14.9 million increase in personnel and related costs, a RMB3.1 million increase in office lease fees and office utilities expenses, a RMB2.8 million increase in travel expenses, a RMB2.1 million increase in share-based compensation, and a RMB0.6 million increase in other miscellaneous sales and marketing expenses.

Research and Development Expenses

Research and development expenses increased by RMB275.7 million, or 107%, from 2017 to 2018, primarily due to substantial front-end load investment in the development of our IIoT platform as well as continued development of our CRM and other solutions. In particular, we invested RMB140.4 million to develop and train our sense and cognition layer AI platform tailored for certain specific IIoT industry verticals. In addition, a RMB77.9 million increase in technical service fees was associated with the development and maintenance of our data warehouse product and with contracting specialized UI (user interface), security and other module development. The increases also included a RMB41.1 million increase in personnel and related costs, a RMB12.4 million increase in office lease fees, office utilities fees and decorating expenses, a RMB7.7 million increase in share-based compensation, which were partially offset by a RMB3.8 million decrease in other miscellaneous research and development expenses.

General and Administrative Expenses

General and administrative expenses increased by RMB38.5 million, or 27%, from 2017 to 2018, including a RMB22.3 million increase in professional fees incurred for accounting and legal matters, including a RMB11.6 million increase in profession fees in connection with our internal investigations, changes of auditor and class action litigations, a RMB16.9 million increase in office leasing fees, a RMB9.3 million increase in consulting and intellectual property related expenses, a RMB6.1 million increase in share-based compensation and a RMB4.4 million increase in office expenses, which were partially offset by a RMB10.4 million decrease in allowance for doubtful accounts, a RMB4.5 million decrease in travel expenses, a RMB4.2 million decrease in meeting related expenses and a RMB1.2 million decrease in other miscellaneous general and administrative expenses.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2017

Net Revenues

	For the Year Ended December 31,			Change	
	2016	2017		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Revenues:					
Enterprise	311,106	377,013	57,946	65,907	21%
e-Government and other	60,772	102,216	15,710	41,444	68%
Less: Business tax and surcharges	(8,055)	(9,696)	(1,490)	(1,641)	20%
Net revenues	<u>363,823</u>	<u>469,533</u>	<u>72,166</u>	<u>105,710</u>	<u>29%</u>

Net revenues increased by RMB105.7 million, or 29%, from 2016 to 2017, with 21% growth in enterprise revenues and 68% growth in e-Government and other revenues. This growth was attributable to increased demand for our solutions from new and existing customers. Total customers increased 28%, to 505 customers in 2017 from 395 customers in 2016. Enterprise revenues increased RMB65.9 million due to a 35% increase in the number of enterprise customers from 331 to 447. The average enterprise customer contribution in 2016 and 2017 were consistently around RMB0.9 million and RMB0.8 million, respectively. E-Government and other revenues increased by RMB41.4 million, due to an increase in average e-Government and other customer contribution from approximately RMB0.9 million to RMB1.8 million, which was primarily driven by higher demand for our solutions, although the number of customers decreased from 64 to 58.

Cost of Revenues

	For the Year Ended December 31,			Change	
	2016	2017		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Cost of revenues	(55,707)	(94,640)	(14,546)	(38,933)	70%

Cost of revenues increased by RMB38.9 million, or 70%, from 2016 to 2017. The increase was primarily as a result of a RMB26.6 million increased outsource service fee and technical service fee and RMB3.7 million increased staff and other cost. The increase in the cost of outsource service fee primarily reflects our incremental investment to satisfy the increasing data security demand from our customers.

Gross Profit

Gross profit increased by RMB66.8 million, or 22%, from 2016 to 2017, due to net revenues increasing at a higher pace than cost of revenues, reflecting higher average customer contribution in 2017 over 2016 and better leveraging of customer support personnel. Gross margin decreased from 85% in 2016 to 80% in 2017. The lower gross margin was primarily attributable to increased cost associated with greater use of outsourcing services.

Operating Expenses

	For the Year Ended December 31,			Change	
	2016	2017		Amount	%
	RMB	RMB	US\$	RMB	
	(in thousands, except for percentages)				
Operating expenses:					
Sales and marketing expenses	(139,781)	(192,413)	(29,573)	(52,632)	38%
Research and development expenses	(160,387)	(257,921)	(39,642)	(97,534)	61%
General and administrative expenses	(88,108)	(143,743)	(22,093)	(55,635)	63%
Total operating expenses	<u>(388,276)</u>	<u>(594,077)</u>	<u>(91,308)</u>	<u>(205,801)</u>	<u>53%</u>

Sales and Marketing Expenses

Sales and marketing expenses increased by RMB52.6 million, or 38%, from 2016 to 2017, primarily due to a RMB24.6 million increase in advertising, marketing conferences, promotional events and related meals and entertainment expense, a RMB11.9 million increase in staff and related costs, including a RMB2.5 million increase in share-based compensation, and a RMB11.6 million increase in spending on industry research for business expansion.

Research and Development Expenses

Research and development expenses increased by RMB97.5 million, or 61%, from 2016 to 2017, primarily due to a RMB42.8 million increase in personnel and other costs resulting from a headcount increase from 418 to 546, a RMB35.1 million increase in outsourced cost and technical service fee, a RMB6.3 million increase in office lease fees, a RMB5.6 million increase in the depreciation and amortization expense mainly related to the computer and software acquired, and a RMB4.7 million increase in share-based compensation in 2017. Research and development expenses in 2017 remained the largest component of our operating expenses.

General and Administrative Expenses

General and administrative expenses increased by RMB55.6 million, or 63%, from 2016 to 2017, including a RMB19.1 million increase in personnel cost mainly due to a transfer of some of our senior sales employees with higher salaries to our administrative department in 2017, a RMB15.2 million increase in professional fee incurred for accounting and legal matters, a RMB7.1 million increase in allowance for doubtful accounts, and a RMB4.9 million increase in share-based compensation.

Taxation

We generate the majority of our operating loss from our PRC operations and have recorded income tax provisions for the periods presented. On a consolidated basis, we have not been profitable yet and have an operating loss carried forward. However, some of our operating entities have taxable income in the past, due to the profit before tax or permanent difference incurred by non-deductible expenses, which resulted in the income tax payment and liability. Income tax liability is calculated based on a separate return basis as if we had filed separate tax returns for all the periods presented.

Cayman Islands

We are not subject to income or capital gains tax under the current laws of the Cayman Islands. There are no other taxes likely to be material to us levied by the government of the Cayman Islands.

Hong Kong

Our subsidiary incorporated in Hong Kong, Gridsum Holding (China) Limited, is subject to Hong Kong profit tax at a rate of 16.5%. Hong Kong does not impose a withholding tax on dividends.

China

Our subsidiaries, VIEs and VIE subsidiaries in the PRC are subject to enterprise income tax on their taxable income in China at a standard rate of 25% if they are not eligible for any preferential tax treatment. Taxable income is based on the entity's global income as determined under PRC tax laws and accounting standards. According to the PRC Enterprise Income Tax Law and relevant regulations, with approval of relevant tax authorities, the income of Beijing Gridsum, Beijing Moment, Beijing Yunyang, Guoxinjunhe and the WFOE, which is determined to be generated from a high and new technology enterprise, is taxed at a preferential rate of 15%.

Our subsidiaries, VIEs and VIE subsidiaries in the PRC are also subject to Value Added Tax ("VAT") at rate of 6% and related surcharges.

Dividends that the WFOE, our wholly-owned subsidiary in China, pays to Gridsum HK, our intermediary holding company in Hong Kong, will be subject to PRC withholding tax at a rate of 10%, unless they qualify for a special exemption. If Gridsum HK satisfies all the requirements under the Arrangement Between the PRC and the Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion with Respect to Taxes on Income and receives approval from the relevant tax authority, then dividends paid by the WFOE to Gridsum HK will be subject to a withholding tax rate of 5% instead. See "Item. 3 Key Information—D. Risk Factors—Risks Relating to Doing Business in China—Any limitation on the ability of the WFOE to make distributions to us, or the tax implications thereof, could have a material adverse effect on our business or financial condition."

If our holding company in the Cayman Islands, Gridsum Cayman, were deemed to be a "PRC resident enterprise" under the Enterprise Income Tax Law, it would be subject to enterprise income tax on its global income at a rate of 25%. See "Item. 3 Key Information—D. Risk Factors—Risks Relating to Doing Business in China—We and our Hong Kong subsidiary may be classified as a 'PRC resident enterprise' for PRC enterprise income tax purposes, which would likely result in unfavorable tax consequences to us and our non-PRC shareholders."

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP, appearing elsewhere in this annual report. The preparation of these consolidated financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingent assets and liabilities. We evaluate these estimates, judgments and assumptions on an on-going basis for taxes.

Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. These estimates form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from such estimates under different assumptions or conditions.

We believe the following critical accounting policies affect the more significant judgments and estimates used in the preparation of our consolidated financial statements:

Consolidation of Variable Interest Entities

To comply with applicable PRC laws and regulations, we conduct operations in China principally through our PRC-based variable interest entity and its operating subsidiaries. One of our wholly-owned subsidiaries has entered into a series of contractual arrangements with our PRC-based variable interest entity and its shareholders. These contractual arrangements allow us to exercise effective control over, and receive substantially all of the economic benefits, of our PRC-based variable interest entity and its operating subsidiaries, and we treat it and its operating subsidiaries as variable interest entities under U.S. GAAP, the financial results of which are included in our consolidated financial statements. See "Item. 4 Information on the Company—C. Organizational Structure."

Revenue Recognition

Revenues are generated from sales of our marketing automation and e-Government and other solutions. The targeted customers for marketing automation solutions are enterprise customers and the targeted customers for e-Government and other solutions are governmental agencies and state-owned entities.

Prior to January 1, 2018, revenues are recognized when (1) persuasive evidence of an arrangement exists, (2) our platform is made available and services have been delivered to the customer, (3) the fee is fixed or determinable and (4) collection is reasonably assured.

Revenues received from incentive programs of search engine providers are based on factors determined by these providers, such as yearly growth in the amount of advertising on the provider's search engine platform that our customers purchase through our solutions, and other factors selected at the discretion of these providers. Revenues are recorded net of value-added taxes and surcharges.

In accordance with ASC 605-45, Revenue Recognition: Principal Agent Considerations, we consider several factors in determining whether we act as the principal or as an agent in the arrangement of merchandise sales and provision of various related services and thus whether it is appropriate to record our revenues and the related cost of sales on a gross basis or record the net amount earned as service fees.

Where customers purchase multiple solutions in a single contract, we allocate the total consideration to the various elements based on the relative selling price method and recognize revenues as services are rendered. In accordance with ASC 605-25, Revenue Recognition—Multiple-Element Arrangements, the following hierarchy are followed when determining the appropriate selling price for each element: (1) vendor specific objective evidence, or VSOE, (2) third party evidence, or TPE and (3) best estimate of selling price, or BEBP. We recognize revenues based on the elements delivered and defer the recognition of revenues for the fair value of the undelivered elements until the remaining obligations have been satisfied. Where all of the elements within an arrangement are delivered uniformly over the agreement period, revenues are recognized on a straight line basis over the contract period.

On January 1, 2018 we adopted Accounting Standards Update ("ASU") 2014-09 Revenue from Contracts with Customers (FASB ASC Topic 606) using the modified retrospective method for contracts that were not completed as of January 1, 2018. We did not result in an adjustment to the retained earnings upon adoption of this new guidance as our revenue was recognized based on the amount of consideration we expect to receive in exchange for satisfying the performance obligations.

The ASU requires the use of a new five-step model to recognize revenue from customer contracts. The five-step model requires that we (i) identify the contract with the customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, including variable consideration to the extent that it is probable that a significant future reversal will not occur, (iv) allocate the transaction price to the respective performance obligations in the contract, and (v) recognize revenue when (or as) we satisfy the performance obligation. The application of the five-step model to the revenue streams compared to the prior guidance did not result in significant changes in the way we record our revenue. Upon adoption, we evaluated our revenue recognition policy for all revenue streams within the scope of the ASU under previous standards and using the five-step model under the new guidance and confirmed that there were no differences in the pattern of revenue recognition.

We continue to derive our revenues from sales contracts where customers purchase multiple solutions in a single contract with we allocate the total consideration to the various elements based on the relative selling price method and recognizes revenues as services are rendered over the period of time. We continue to recognize revenues on the elements delivered and defer the recognition of revenues for the fair value of the undelivered elements until the remaining obligations have been satisfied. Where all of the elements within an arrangement are delivered uniformly over the agreement period, revenues are recognized on a straight-line basis over the contract period.

Enterprise

We generate enterprise revenue primarily by providing our marketing automation solutions, including bid management and data analysis solutions, to enterprise customers. We earn and record service fee revenues over the contractual period, in proportion to ad spending or the completion of milestones that are stipulated in the contracts. Sometimes, we receive revenues from the incentive programs of search engine providers based on factors determined by them, such as yearly growth in the amount of advertising on the provider's search engine platform that our customers purchase through our solutions and other factors selected at the discretion of these providers. Revenues from these programs are received on both a quarterly and an annual basis and are calculated in accordance with our customers' usage of the search engine providers.

In addition, we sell distribution rights of public sentiment tracking service provided by certain third-party search engine to sub-distributor, due to uncertainty of collection, the revenue is recognized when fees are collected.

With respect to the bid management services, we determined that: (i) the search engines are responsible for providing the advertisements service to the customers; (ii) we lack the latitude to determine the prices charged by the search engine providers and earns only a fixed service fee from the customers; (iii) the hosting and maintenance of the advertisements are the responsibilities of the search engine providers; (iv) the customers have the discretion in choosing the search engines; and (v) we receive revenues from incentive programs based on the search engines providers' policies. It is our responsibility to manage the customer's advertising campaign on the search engines providers, according to the terms of the customer contract, so we view ourselves as an agent and record revenues related to these services on a net basis.

e-Government and Other

We generate e-Government and other revenue by entering into service contracts with governmental agencies for our e-Government solutions. We also generate e-Government and other revenue by entering into contracts with state-owned television stations for our new media solutions, including TV Dissector, Streaming Dissector and Video Dissector.

Fair Value of our Ordinary Shares

Prior to our initial public offering in September 2016, we were a private company with no quoted market prices for our ordinary shares. We therefore needed to make estimates of the fair value of our ordinary shares at various dates for the purposes of: (i) determining the fair value of our ordinary shares at the date of issuance of convertible instruments as one of the inputs into determining the intrinsic value of the beneficial conversion features, if any; (ii) determining the fair value of preferred shares and ordinary shares at the respective issuance date; and (iii) determining the fair value of our ordinary shares at the date of grant of a share-based compensation award to our employees as one of the inputs into determining the grant date fair value of the award.

The following table sets forth the fair value of our ordinary shares estimated at different times with the assistance from an independent valuation firm.

<u>Valuation Dates</u>	<u>Fair value per share</u>	<u>Discount rate</u>	<u>DLOM</u>	<u>Type of valuation</u>
December 31, 2012	US\$1.51	22.5%	30%	Retrospective
October 1, 2013	US\$2.64	21.5%	25%	Retrospective
December 31, 2013	US\$2.75	20.0%	20%	Retrospective
July 1, 2014	US\$5.47	20.0%	20%	Retrospective
December 31, 2014	US\$6.82	20.0%	15%	Retrospective
January 30, 2015	US\$7.93	19.5%	10%	Contemporaneous
March 1, 2015	US\$7.94	19.0%	10%	Contemporaneous
June 30, 2015	US\$11.80	18.5%	7%	Contemporaneous
September 30, 2015	US\$11.84	18.5%	8%	Contemporaneous
November 18, 2015	US\$11.84	18.5%	9%	Contemporaneous

In determining the fair value of our ordinary shares, we applied the income approach/discounted cash flow analysis based on our best estimate of projected cash flow as of the valuation date. The determination of the fair value of our ordinary shares requires complex and subjective judgments to be made regarding our projected financial and operating results, our unique business risks, the liquidity of our shares and our operating history and prospects at the time of valuation.

The major assumptions used in calculating the fair value of ordinary shares included:

- Discount rates. The discount rates listed in the table above were based on the weighted average cost of capital, which was determined based on a consideration of the factors including risk-free rate, comparative industry risk, equity risk premium, company size and non-systematic risk factors.
- Comparable companies. In deriving the weighted average cost of capital used as the discount rates under the income approach, ten publicly traded companies were selected for reference as our guideline companies. The guideline companies were selected based on the following criteria: (i) they operate in digital marketing and big data analytics industry; and (ii) their shares are publicly traded in developed capital markets, including the United States.
- Discount for lack of marketability, or DLOM. DLOM was quantified by the Finnerty's (2012) Average-Strike Put Option model. Under this option pricing method, the cost of the put option, which can hedge the price change before the privately held shares can be sold, was considered as a basis to determine the DLOM. This option pricing method is one of the methods commonly used in estimating DLOM as it can take into consideration factors like timing of a liquidity event, such as an initial public offering, and estimated volatility of our shares. The farther the valuation date is from an expected liquidity event, the higher the put option value and thus the higher the implied DLOM. The lower DLOM is used for the valuation, the higher is the determined fair value of the ordinary shares.
- The income approach involves applying appropriate discount rates to estimated cash flows that are based on earnings forecasts. Our revenues and earnings growth rates, as well as major milestones that we have achieved, contributed to the increase in the fair value of our ordinary shares from December 2012 to November 2015. However, these fair values are inherently uncertain and highly subjective. The assumptions used in deriving the fair values were consistent with our business plan. These assumptions included: no material changes in the existing political, legal and economic conditions in the PRC; our ability to retain competent management, key personnel and staff to support our ongoing operations; and no material deviation in market conditions from economic forecasts. These assumptions are inherently uncertain.
- Option pricing method was used to allocate enterprise value to preferred and ordinary shares, taking into account the guideline prescribed by the AICPA Audit and Accounting Practice Aid, Valuation of Privately-Held Company Equity Securities Issued as Compensation. The method treats common stock and preferred stock as call options on the enterprise's value, with exercise prices based on the liquidation preference of the preferred stock.
- The option pricing method involves making estimates of the anticipated timing of a potential liquidity event, such as a sale of our company or an initial public offering, and estimates of the volatility of our equity securities. The anticipated timing is based on the plans of our board of directors and management. Estimating the volatility of the share price of a privately held company is complex because there is no readily available market for the shares. We estimated the volatility of our shares to range from 37.7% to 51.3% based on the historical volatilities of comparable publicly traded companies engaged in similar lines of business. Had we used different estimates of volatility, the allocations between preferred and ordinary shares would have been different.

Share-based Compensation

All share-based awards to employees and directors, including stock option awards, are measured at the grant date based on the fair value of the awards. Share-based compensation, net of forfeitures, is recognized as expense on a straight-line basis over the requisite service period, which is the vesting period. We used the binominal option pricing model to determine the fair value of stock options and account for share-based compensation expenses using an estimated forfeiture rate at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from initial estimates. Share-based compensation expenses were recorded net of estimated forfeitures such that expenses were recorded only for those share-based awards that are expected to vest. Historically, our share-based compensation expenses were relatively low.

The following table sets forth information regarding the stock options we granted as of December 31, 2018.

<u>Date of Tranche</u>	<u>Number of Options Granted</u>	<u>Exercise Price</u>	<u>Fair Value of the Options as of the Grant Date</u>	<u>Fair Value of the Underlying Ordinary Shares as of the Grant Date</u>	<u>Intrinsic Value as of the Grant Date</u>
September 1, 2013	78,125	US\$0.42	US\$2.26	US\$2.64	US\$2.22
January 1, 2014	31,250	US\$0.42	US\$2.38	US\$2.75	US\$2.33
February 10, 2014	198,893	US\$0.42	US\$2.37	US\$2.75	US\$2.33
July 1, 2014	164,000	US\$0.42	US\$5.08	US\$5.47	US\$5.05
December 10, 2014	198,893	US\$0.42	US\$6.43	US\$6.82	US\$6.40
March 1, 2015	223,000	US\$0.42	US\$7.55	US\$7.94	US\$7.52
June 30, 2015	30,000	US\$0.42	US\$11.41	US\$11.80	US\$11.38
September 30, 2015	24,000	US\$0.42	US\$11.44	US\$11.84	US\$11.42
October 16, 2015	25,000	US\$0.42	US\$11.44	US\$11.84	US\$11.42
November 18, 2015	29,000	US\$0.42	US\$11.44	US\$11.84	US\$11.42
January 17, 2017	1,320,000	US\$10.11	US\$4.93	US\$11.35	US\$1.24
June 25, 2018	320,000	US\$6.34	US\$4.31	US\$6.30	—

The fair value of each option grant is estimated on the date of grant. The following table summarizes assumptions used in the fair value estimates on the dates indicated.

<u>Date of Tranche</u>	<u>Expected Volatility⁽¹⁾</u>	<u>Risk-Free Interest Rate (Per Annum)⁽²⁾</u>	<u>Expected Dividend Yield⁽³⁾</u>	<u>Expected Term (in Years)⁽⁴⁾</u>	<u>Expected Forfeiture Rate⁽⁵⁾</u>
September 1, 2013	47%	3.56%	—	2.2	3%
January 1, 2014	52%	3.63%	—	2.2	3%
February 10, 2014	52%	3.27%	—	2.2	3%
July 1, 2014	52%	3.17%	—	2.2	3%
December 10, 2014	50%	2.77%	—	2.2	3%
March 1, 2015	49%	2.59%	—	2.2	3%
June 30, 2015	48%	2.95%	—	2.2	3%
September 30, 2015	47%	2.64%	—	2.2	3%
October 16, 2015	46%	2.63%	—	2.2	3%
November 18, 2015	46%	2.87%	—	2.2	3%
January 17, 2017	46%	3.14%	—	2.2	3%
June 25, 2018	56%	3.02%	—	2.2	3%

- (1) We estimated expected volatility based on the annualized standard deviation of the daily return embedded in historical share prices of comparable companies with a time horizon close to the expected expiration of the term.
- (2) We estimated the risk-free interest rate based on the yield of U.S. Treasury bills with maturity terms similar to the expected terms on the share-based awards.
- (3) We have never declared or paid any cash dividends on our capital stock, and we do not anticipate any dividend payments on our ordinary shares in the foreseeable future.
- (4) Expected term (in years) represents the weighted average period of time that share-based awards granted are expected to be outstanding giving consideration to historical exercise patterns. We used the simplified method to calculate the expected term.
- (5) Expected forfeiture rate is estimated based on historical employee turnover rate after each option grant.

For the purpose of determining the estimated fair value of our stock options, we believe the expected volatility and the estimated fair value of our ordinary shares are the most critical assumptions. Changes in these assumptions could significantly affect the fair value of stock options and hence the amount of share-based compensation we recognize in our combined and consolidated financial statements. Since we did not have a trading history for our shares sufficient to calculate our own historical volatility, the expected volatility of our future ordinary share price was estimated based on the price volatility of the shares of comparable public companies that operate in the same or similar business.

The following table sets forth information regarding the RSUs we granted as of December 31, 2018.

<u>Date of Tranche</u>	<u>Number of RSUs Granted</u>	<u>Fair Value of the RSUs as of the Grant Date</u>	<u>Intrinsic Value as of the Grant Date</u>
January 3, 2017	19,782	US\$10.11	US\$10.11
January 11, 2017	300	US\$11.24	US\$11.24
August 28, 2017	3,217	US\$9.37	US\$9.37
October 1, 2017	862,900	US\$9.80	US\$9.80
October 10, 2017	20,000	US\$9.40	US\$9.40
October 26, 2017	3,000	US\$8.87	US\$8.87
October 23, 2017	10,000	US\$8.20	US\$8.20
November 1, 2017	8,500	US\$8.40	US\$8.40
November 7, 2017	3,000	US\$8.64	US\$8.64
November 15, 2017	3,000	US\$8.69	US\$8.69
December 1, 2017	3,000	US\$8.57	US\$8.57
January 2, 2018	35,718	US\$9.33	US\$9.33
January 4, 2018	3,223	US\$9.54	US\$9.54
February 28, 2018	25,000	US\$10.89	US\$10.89
March 1, 2018	269,425	US\$10.26	US\$10.26
March 2, 2018	36,733	US\$10.23	US\$10.23
March 5, 2018	12,000	US\$10.22	US\$10.22
April 2, 2018	14,312	US\$8.46	US\$8.46
April 16, 2018	4,750	US\$7.70	US\$7.70
April 23, 2018	2,592	US\$6.12	US\$6.12
May 6, 2018	9,157	US\$5.66	US\$5.66
May 16, 2018	3,000	US\$6.20	US\$6.20
May 29, 2018	200,000	US\$6.27	US\$6.27
June 1, 2018	2,275	US\$6.86	US\$6.86
June 19, 2018	2,436	US\$6.39	US\$6.39
July 2, 2018	1,075	US\$6.96	US\$6.96
August 16, 2018	7,133	US\$6.10	US\$6.10
August 28, 2018	4,957	US\$5.93	US\$5.93
September 3, 2018	17,331	US\$5.91	US\$5.91

The grant date fair value of the RSUs is equal to the closing price of our ADSs on the grant date with the cost of US\$0.001 per RSU.

Income Taxes

Current income taxes are provided on the basis of net income/(loss) for financial reporting purposes, and 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 provided using the liability method. Under this method, deferred tax assets and liabilities are recognized for the tax effects of temporary differences and are determined by applying enacted statutory tax rates that will be in effect in the period in which the temporary differences are expected to reverse to the temporary differences between the financial statements' carrying amounts and the tax bases of assets and liabilities. A valuation allowance is provided to reduce the amount of deferred tax assets if, based on the weight of available evidence, it is more likely than not that some portion, or all, of the deferred tax assets will not be realized.

We apply a "more likely than not" recognition threshold in the evaluation of uncertain tax positions. We recognize the benefit of a tax position in our consolidated financial statements if the tax position is "more likely than not" to prevail based on the facts and technical merits of the position. Tax positions that meet the "more likely than not" recognition threshold are measured at the largest amount of tax benefit that has a greater than fifty percent likelihood of being realized upon settlement. Unrecognized tax benefits may be affected by changes in interpretation of laws, rulings of tax authorities, tax audits and expiry of statutory limitations. In addition, changes in facts, circumstances and new information may require us to adjust the recognition and measurement estimates with regard to individual tax positions. Accordingly, unrecognized tax benefits are periodically reviewed and re-assessed. Adjustments, if required, are recorded in our consolidated financial statements in the period in which the change that necessitates the adjustments occur. The ultimate outcome for a particular tax position may not be determined with certainty prior to the conclusion of a tax audit and, in certain circumstances, a tax appeal or litigation process.

Recently Issued Accounting Pronouncements

See Item 18 of Part III, “Financial Statements—Note 2—Principal Accounting Policies—(ee) Recent Accounting Pronouncements.”

B. Liquidity and Capital Resources

Cash Flows and Working Capital

The following table sets forth the movements of our cash and cash equivalents for the periods presented:

	For the Year Ended December 31,			
	2016	2017	2018	
	RMB	RMB	RMB	US\$
	(in thousands)			
Net cash used in operating activities	(235,177)	(306,704)	(233,130)	(33,907)
Net cash (used in)/provided by investing activities	(112,386)	42,797	(57,231)	(8,324)
Net cash provided by/(used in) financing activities	650,539	190,948	(26,953)	(3,920)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	22,955	(39,485)	(678)	(99)
Net increase/(decrease) in cash, cash equivalents and restricted cash	325,931	(112,444)	(317,992)	(46,250)
Cash, cash equivalents and restricted cash at the beginning of the year	198,523	524,454	412,010	59,924
Cash, cash equivalents and restricted cash at the end of the year	524,454	412,010	94,018	13,674

Cash, Cash Equivalents and Restricted Cash

As of December 31, 2017 and 2018, our total cash, cash equivalents and restricted cash were RMB412.0 million and RMB94.0 million (US\$13.7 million), respectively. Our cash, cash equivalents and restricted cash decreased by RMB318.0 million from December 31, 2017 to December 31, 2018, primarily due to our cash used in operating, investing and financing activities described below.

In 2017 and 2018, we entered into several short-term guaranteed loan agreements. Each of the loan agreements provides for a RMB revolving credit facility with a maturity term of twelve months. These loans were guaranteed by Guosheng Qi, our chief executive officer and chairman, Beijing Haidian Sci-tech Enterprises Financing Guarantee Co., Ltd., a third-party guarantor, or Gridsum PRC Holding.

Short-term bank loans as of December 31, 2018 amounted to RMB5.0 million (US\$0.7 million), which consisted of several bank borrowings denominated in RMB. All of these bank borrowings were repayable within one year. During 2018, we repaid RMB266.0 million (US\$38.7 million) of our short-term bank loans.

On May 5, 2018, we completed the transactions contemplated by our April 30, 2018 convertible note purchase agreement with FutureX Innovation SPC, an affiliate of FutureX. In accordance with the convertible note purchase agreement, we received US\$40 million and issued the FutureX Convertible Note that is convertible, in whole or in part, into our Class B ordinary shares at a conversion price of US\$6.50 per share, subject to customary adjustments. The FutureX Convertible Note has a term of 18 months and bears interest at 2.80% per annum. The FutureX Convertible Note includes other customary terms and covenants, including certain events of default after which the FutureX Convertible Note may be due and payable immediately. The principal amount of the note and all accrued and unpaid interest will become due on November 5, 2019, or earlier in the event of default or certain fundamental changes of our company. FutureX Innovation SPC agreed not to transfer or sell the FutureX Convertible Note, the Class B ordinary shares or any of our other securities, or enter into any swap, short sale or similar arrangements relating to such securities, for a period of six months after the issuance of the FutureX Convertible Note. In connection with this transaction, we and FutureX Innovation SPC entered into a registration rights agreement, pursuant which FutureX Innovation SPC has the right to require us, within 15 months following the issuance of the FutureX Convertible Note, to file a registration statement with the SEC covering the offer and sale of the Class B ordinary shares issued upon conversion of the FutureX Convertible Note, as well as certain customary piggyback registration rights.

As of December 31, 2018, our total cash, cash equivalents and restricted cash were approximately RMB94.0 million (US\$13.7 million). Our cash and cash equivalents decreased substantially from December 31, 2017 primarily due to our use of cash in operating, investment and financing activities, including continued investments in new market opportunities, funding our net loss and increased expenses incurred for professional accounting and legal fees. To raise additional working capital and improve our liquidity position, in March 2019, we issued and sold an aggregate of 3,461,902 newly issued Class B ordinary shares to certain equity investment firms in a private placement transaction for an aggregate price of approximately US\$11.1 million, or a per share price of US\$3.20.

We believe that we can meet our future liquidity and capital requirements for at least next twelve months from the date of this annual report. However, in the near term we may need to reduce operating expenses through restructuring, or increase our working capital through additional sales of equity or debt securities, or other borrowing arrangements. Any such restructuring activities may adversely affect our revenues, and any issuance and sale of additional equity would result in further dilution to our shareholders and holders of our ADSs. The incurrence of additional indebtedness would result in increased fixed obligations and could result in operating covenants that would restrict our operations. Failure to increase our working capital would have a material adverse effect on our business.

Our future capital requirements will depend on many factors, including our growth rate, the timing and extent of spending to support research and development efforts, the continued expansion of sales and marketing activities, the introduction of new and enhanced products, and the continued market acceptance of our products. In the event that additional external financing is required, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital when desired, our business, operating results and financial condition would be adversely affected.

In utilizing the proceeds we received from our initial public offering, the issuance of the FutureX Convertible Note, our March 2019 private placement and the other cash that we hold offshore, we may (i) make additional capital contributions to our PRC subsidiary, (ii) establish new PRC subsidiaries and make capital contributions to these new PRC subsidiaries, (iii) make loans to our PRC subsidiary or consolidated affiliated entities or (iv) acquire offshore entities with business operations in China in offshore transactions. However, most of these uses are subject to PRC regulations and approvals. For example:

- capital contributions to our PRC subsidiary or consolidated affiliated entities, whether existing or newly established ones, must be approved by the MOFCOM or its local counterparts; and
- loans by us to finance the activities of our PRC subsidiary, which is a foreign-invested enterprise, cannot exceed statutory limits and must be registered with SAFE or its local branches.

See “Item 4. Information on the Company—B. Business Overview—Regulation—Regulations on Foreign Exchange.”

Substantially all of our future revenues are likely to continue to be in the form of RMB. Under existing PRC foreign exchange regulations, payments of current account items, including profit distributions, interest payments and trade and service-related foreign exchange transactions, can be made in foreign currencies without prior SAFE approval as long as certain routine procedural requirements are fulfilled. Therefore, our PRC subsidiary is allowed to pay dividends in foreign currencies to us without prior SAFE approval by following certain routine procedural requirements. However, approval from or registration with competent government authorities is required where the RMB is to be converted into foreign currency and remitted out of China to pay capital expenses such as the repayment of loans denominated in foreign currencies. The PRC government may at its discretion restrict access to foreign currencies for current account transactions in the future. See “Item 3 Key Information—D. Risk Factors—Risks Relating to Doing Business in China—Governmental control of currency conversion may limit our ability to pay dividends and other obligations and affect the value of your investment.”

Operating Activities

Net cash used in operating activities in 2018 was RMB233.1 million (US\$33.9 million), reflecting a net loss of RMB522.5 million (US\$76.0 million), a decrease of RMB110.9 million (US\$16.1 million) in accounts payable, partially offset by a decrease of RMB184.8 million (US\$26.9 million) in accounts receivable, a decrease of RMB12.9 million (US\$1.9 million) in prepayment and other current asset, an increase of RMB52.5 million (US\$7.6 million) in accrued expenses and other liabilities, an increase of RMB22.7 million (US\$3.3 million) in deferred revenue, and an increase of RMB37.9 million (US\$5.5 million) in advance from customers. The principal non-cash items accounting for the difference between the net loss and the cash used in operating activities in 2018 were RMB34.7 million (US\$5.0 million) in depreciation and amortization expenses, RMB39.0 million (US\$5.7 million) in share-based compensation expense, and RMB16.5 million (US\$2.4 million) in provision for allowance for doubtful accounts. Net cash used in operating activities decreased from RMB306.7 million in 2017 to RMB233.1 million (US\$33.9 million) in 2018.

The amount of payments to search engine service providers on behalf of customers included in accounts receivable was RMB449.4 million and RMB283.7 million (US\$41.3 million) as of December 31, 2017 and December 31, 2018, respectively. When we provide the bid management services to our customers, customer spending on search engine service providers will pass through our accounts. The flow of the funds impacts on several accounts, including accounts receivable, accounts payable, deferred revenues and advance from customers.

Net cash used in operating activities in 2017 was RMB306.7 million, reflecting a net loss of RMB239.1 million, an increase of RMB267.6 million in accounts receivable, and an increase of RMB102.4 million in prepayments and other current assets, partially offset by an increase of RMB158.6 million in accounts payable, an increase of RMB36.5 million in tax payable, and an increase of RMB18.6 million in salary and welfare payable. The principal non-cash items accounting for the difference between the net loss and the cash used in operating activities in 2017 were RMB24.5 million in provision for allowance for doubtful accounts, RMB31.5 million in depreciation and amortization expenses, RMB22.9 million in share-based compensation expense, and RMB20.5 million in foreign currency exchange loss. Net cash used in operating activities increased from RMB235.2 million in 2016 to RMB306.7 million in 2017. The increased cash outflow was primarily attributable to investment in working capital for certain low risk customers, to which a longer credit period was granted.

Net cash used in operating activities in 2016 was RMB235.2 million, reflecting a net loss of RMB98.6 million, an increase of RMB102.0 million in accounts receivable and an increase of RMB88.5 million in prepayments and other current asset, which was in line with the increase of our revenues, and a decrease of RMB45.5 million in accounts payable and deferred revenues, advance from customers, accrued expenses and other current liabilities, partially offset by an increase of RMB40.7 million in tax payable, an increase of RMB9.3 million in salary and welfare payable. The principal non-cash items accounting for the difference between the net loss and the cash used in operating activities in 2016 were RMB23.9 million in depreciation and amortization expenses, RMB10.6 million in share-based compensation expense, RMB19.7 million in provision for allowance for doubtful accounts, and RMB1.6 million in foreign currency exchange loss.

Investing Activities

Net cash used in investing activities in 2018 was RMB57.2 million (US\$8.3 million), primarily due to purchases of property and equipment of RMB52.3 million (US\$7.6 million).

Net cash provided by investing activities in 2017 was RMB42.8 million, primarily due to maturity of time deposit of RMB67.6 million, and partially offset by purchases of property and equipment of RMB23.0 million.

Net cash used in investing activities in 2016 was RMB112.4 million, representing investment in a time deposit of RMB66.4 million and purchases of property and equipment of RMB46.0 million.

Financing Activities

Net cash used in financing activities in 2018 was RMB27.0 million (US\$3.9 million), primarily due to RMB266.0 million (US\$38.7 million) in repayment of our bank loans, partly offset by RMB234.0 million (US\$34.0 million) from convertible note, and RMB5.0 million (US\$0.7 million) proceeds from bank loans.

Net cash provided by financing activities in 2017 was RMB190.9 million, primarily due to RMB266.0 million proceeds from bank loans and net proceeds of RMB3.1 million from issuance of ordinary shares for options exercised, partly offset by RMB65.0 million in repayment of our bank loans.

Net cash provided by financing activities in 2016 was RMB650.5 million, primarily due to net proceeds of RMB615.0 million from our initial public offering and RMB65.0 million drawdown under our revolving credit facilities.

Capital Expenditures

Our capital expenditures were RMB46.0 million, RMB23.0 million and RMB52.3 million (US\$7.6 million) in 2016, 2017 and 2018, respectively, primarily related to purchase of servers, computers and other equipment for our business. We intend to continue to incur capital expenditures as our business continues to grow, and we may make acquisitions of businesses and properties that complement our operations when suitable opportunities arise. We expect to fund our future capital expenditures with our current cash, cash equivalents and time deposits and anticipated cash flow from operations.

Holding Company Structure

We are a holding company with no material operations of our own. We conduct our operations primarily through our wholly-owned subsidiary and consolidated affiliated entities established in the PRC. As a result, our ability to pay dividends depends upon dividends paid to us by the WFOE, our PRC subsidiary. If the WFOE, or any other newly formed subsidiary of ours, incurs debt on its own behalf in the future, the instruments governing its debt may restrict its ability to pay dividends to us. In addition, the WFOE is 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, the WFOE 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 its registered capital. In addition, the WFOE may allocate a portion of its after-tax profits to staff welfare and bonus funds, a discretionary surplus fund and an enterprise expansion fund at its discretion or in accordance with its articles of association.

These reserve funds and staff welfare and bonus funds are not distributable as cash dividends. In addition, registered capital and capital reserve accounts are restricted from withdrawal in the PRC, up to the amount of net assets held in such entity. As of December 31, 2018, the total restricted net assets was RMB177.4 million (US\$25.8 million). The WFOE has never paid dividends and will not be able to pay dividends until it generates accumulated profits and has satisfied the requirements for statutory reserve funds.

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

Our research and development organization is responsible for the design, development and testing of all aspects of our dashboard and suite of solutions. We invest heavily in these efforts to continuously improve, innovate and add new features to our solutions.

We deploy new features, functionality and technologies through periodic software releases or updates in order to minimize disruption and provide for constant improvement. Our product managers regularly engage with customers, partners and industry analysts, as well as other stakeholders, in functions such as sales, customer success, marketing and business development to understand customer needs as well as general trends in our industry. Once product improvements are identified, the development organization works closely together to design, develop, test and launch a solution.

The majority of our research and development team is based in our Beijing office and to a lesser degree in Shanghai, Shenzhen, Chengdu and Xi'an. To foster rapid innovation, our team is further apportioned into small agile development teams.

Our research and development expenses were RMB160.4 million, RMB257.9 million and RMB533.6 million (US\$77.6 million) for the years ended December 31, 2016, 2017 and 2018, 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 for the period from January 1, 2018 to December 31, 2018 that are reasonably likely to have a material effect on our net revenues, income, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future operating results or financial conditions.

E. Off-Balance Sheet Arrangements

As of December 31, 2018, we have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. In addition, we have not entered into any derivative contracts that are indexed to our own shares and classified as shareholder's equity, or that are not reflected in our consolidated combined 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. Moreover, 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.

F. Tabular Disclosure of Contractual Obligations

The following sets forth information regarding our aggregate payment obligations under our contracts and commercial commitments as of December 31, 2018:

	Payments Due by Period									
	Total		Less than 1 year		1-3 years		3-5 years		More than 5 years	
	RMB	US\$	RMB	US\$	RMB	US\$	RMB	US\$	RMB	US\$
	(in thousands)									
Operating lease obligations	163,357	23,759	45,428	6,607	74,656	10,858	43,273	6,294	—	—
FutureX Convertible Note	275,020	40,000	275,020	40,000	—	—	—	—	—	—
Other commitments	37,785	5,495	20,359	2,961	15,658	2,277	1,768	257	—	—
Total	476,162	69,254	340,807	49,568	90,314	13,135	45,041	6,551	—	—

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. The business address of each of our directors and executive officers is Beijing Gridsum Technology Co., Ltd., South Wing, High Technology Building, No. 229 North 4th Ring Road, Haidian District, Beijing 100083, People's Republic of China.

Directors and Executive Officers	Age	Position/Title
Guosheng Qi	34	Chairman of the Board, Chief Executive Officer
Guofa Yu	45	Director, Chief Operating Officer
Herman Fong	46	Director, Co-President
Yanchun Bai	52	Director
Xudong Gao	53	Director
Feng Lu	63	Director
Dannis Cheuk Yin Lee	48	Director
Michael Peng Zhang	49	Co-Chief Financial Officer
Ravi Sarathy	48	Co-Chief Financial Officer
John Jiyang Liu	54	Chief Technology Officer
Aaron Feng Li	45	Co-President
Michael Yang Xu	48	Co-President
Xijian Liu	61	Chief Strategy Officer

Guosheng Qi is one of our co-founders and has served as our chief executive officer and chairman of our Board of Directors since our inception. Mr. Qi founded Beijing Gridsum in 2005 when he was a student at Tsinghua University. Mr. Qi holds a bachelor's degree in computer software from Tsinghua University.

Guofa Yu is one of our co-founders and has served as our chief operating officer and a member of our Board of Directors since 2005. Mr. Yu served as the operation director of Dyne Junhui, an information technology company, in 2005. Prior to that, Mr. Yu served as a project director of Founder Group, an information technology company, from 2002 to 2005. From 2000 to 2002, Mr. Yu served in technology and management roles in several small technology companies. From 1998 to 2000, Mr. Yu served as a software engineer at Neusoft Group, a software company. Mr. Yu holds a bachelor's degree in management information systems from Central South University.

Herman Fong has served as our co-president and a member of our Board of Directors since February 2019. From 2011 to October 2018, he was a partner and Chief Investment Officer of Public Markets Strategy at Pacific Alliance Group, or PAG, an investment management firm in Hong Kong. He was Managing Director and CIO of Asia Pacific liquid trading strategies from 2005 to 2008, and has held a variety of senior roles in trading across Asia, including at ABN AMRO Bank, Credit Agricole Indosuez, Lehman Brothers, and Salomon Brothers. Mr. Fong received a Master of Science in operations research from Stanford University and a Bachelor of Science in mechanical engineering from University of California, Berkeley.

Yanchun Bai has served as a member of our Board of Directors since 2012. Mr. Bai has been a partner at the Commerce & Finance Law Offices, a law firm, since May 2013. Prior to that, Mr. Bai was a partner at King & Wood Mallesons, a law firm, from 1993 to May 2013. Mr. Bai currently serves as a member of the board of directors of Baoshan Iron & Steel Co. Ltd., a company listed on Shanghai Stock Exchange, NETAC Technology Co., Ltd., a company listed on Shenzhen Stock Exchange, Shijiazhuang Changshan Beiming Technology Co., Ltd., a company listed on Shenzhen Stock Exchange, and certain other private company. Mr. Bai holds a bachelor's degree in law from China University of Political Science and Law and an LL.M. degree from Stanford Law School.

Xudong Gao has served as a member of our Board of Directors since 2006. Mr. Gao has served as the vice director of Tsinghua University Research Center for Technological Innovation since 2011. Mr. Gao has been a member of the Ministry of Industry and Information Technology's Expert Committee of Telecom Economy since January 2010. Mr. Gao also served as a director of the Tsinghua MBA program from 2008 to 2011. Mr. Gao is currently a professor at the School of Economics and Management and the Schwarzman College of Tsinghua University. Mr. Gao holds a bachelor's degree in industrial engineering from Harbin Institute of Technology, a master's degree in economics from Renmin University of China and a Ph.D. degree in management from Massachusetts Institute of Technology.

Feng Lu has served as a member of our Board of Directors since April 2019. Mr. Lu has been a professor of the School of Government at Peking University since 2003. Prior to that, Mr. Lu had been an associate professor of the School of Public Policy and Management at Tsinghua University from 1999 to 2003. Mr. Lu also served as an officer at the Research Center of the Finance and Commerce Office of Beijing Municipal Government from 1984 to 1986, as an officer at the Finance and Commerce Bureau of the PRC State Economic Commission from 1986 to 1988, and as an officer at the Consumer Market Department and Comprehensive Planning Department of the PRC State Planning Commission from 1988 to 1991. Since 2008, Mr. Lu has served on the board of directors of Chery Automobile Co., Ltd., a China-based automobile manufacturer. Mr. Lu holds a bachelor's degree in philosophy from the Central Institute of Nationalities of the PRC, and a Ph.D. degree in political science from Columbia University.

Dannis Cheuk Yin Lee has served as a member of our Board of Directors since April 2019. Mr. Lee is a managing director of DLK Advisory Limited, a company engaged in company positioning, investor communications and related advisory services, which he joined in 2010. Mr. Lee held various management positions at AMVIG Holdings Limited, a tobacco packaging business, from 2001 to 2010. Previously, Mr. Lee served senior accounting or audit roles at Arthur Andersen LLP and Philip Morris Asia Limited. Mr. Lee is an associate member of the Hong Kong Institute of Certified Public Accountants and a member of the American Institute of Certified Public Accountants. Mr. Lee is an independent director of Geely Automobile Holdings Limited, an automobile manufacturer listed on the Hong Kong Stock Exchange, chairman of its audit committee and member of its remuneration and nomination committees. He is also a member of the boards of directors of several companies listed on the Hong Kong Stock Exchange. Mr. Lee holds a bachelor's degree in business administration from Texas A&M University.

Michael Peng Zhang has served as our co-chief financial officer since April 2017 and was our chief financial officer from 2014 to April 2017. Prior to joining us, Mr. Zhang served as a managing director of Cowen & Company, an investment banking firm, from 2008 to 2013. Prior to that, Mr. Zhang served as a principal of ThinkEquity Partners LLC, an investment banking firm, from 2005 to 2007. Mr. Zhang also held management and operational positions at China Guangdong Nuclear Power Holding, a clean energy company, Shenzhen Techlink Science & Technologies, a technology company, and Stephens Inc., a financial services firm. Mr. Zhang holds a bachelor's degree in economics from Renmin University of China and a master's degree in business administration from Wake Forest University. Mr. Zhang is a Certified Public Accountant and a CFA charterholder.

Ravi Sarathy has served as our co-chief financial officer since April 2017 and was our chief strategy officer from October 2016 to April 2017. Prior to joining us, Mr. Sarathy served as a managing director and the head of APAC Internet and software equity research at Citigroup from 2010. Prior to that, Mr. Sarathy was the co-founder and served as president of iRealityGroup, an Asia-focused investment advisory firm since 2000. Mr. Sarathy also served as the head of global internet research and head of Asia internet, media and telecommunications research at Lehman Brothers from 1996 to 2000. Mr. Sarathy holds a bachelor's degree and a master's degree, both in economics, from Peterhouse, Cambridge University.

John Jiyang Liu has served as our chief technology officer since December 2014. Prior to joining us, Mr. Liu was an engineer, research manager and R&D director of Microsoft Corporation, a software company, from 1998 to December 2014, and an engineer at Hewlett-Packard Company, a computer company, from 1994 to 1998. Mr. Liu served as a researcher at University of Paderborn from 1989 to 1990. Mr. Liu holds a bachelor's degree in computer science from Tsinghua University and a master's degree in computer science from University of Pittsburgh.

Aaron Feng Li has served as our co-president since 2009. Prior to joining us, Mr. Li served as the general manager of the key account division and general manager of the East China branch of Baidu, Inc. from 2004 to 2008. Prior to that, Mr. Li was the sales director of China eNet Internet Co., an internet media company, from 2000 to 2004. Mr. Li served as the chief representative of the Beijing region of Xiamen Powerlong Industrial Co., Ltd., a technology company, from 1991 to 1995. Mr. Li holds a bachelor's degree in industrial analysis from Qiqihar University and a Global Executive MBA degree from China Europe International Business School.

Michael Yang Xu has served as our co-president since 2008. Prior to that, Mr. Xu served as the general manager of multiple divisions of Sinochem Tianjin Co Limited, a subsidiary of Sinochem Group, from 2005 to 2007. Mr. Xu also held various investment and management positions at Sinochem Group, a Chinese state-owned chemical enterprise, from 1994 to 1999, including serving as financial controller of Zhonghuan Jinyuan Real Estate Co Limited, a subsidiary of Sinochem Group. Mr. Xu is currently the International Ambassador of Search Engine Marketing Professional Organization, also known as SEMPO, and the chairman of SEMPO's Greater China working group. Mr. Xu holds a bachelor's degree in accounting from Renmin University of China, a master's degree in telecommunication systems from California State University, East Bay, and an MBA degree from California State University, East Bay.

Xijian Liu has served as our chief strategy officer since August 2017. Prior to joining us, Mr. Liu served as the director of the information management department of China National Petroleum Corporation and the general manager of the information management department of PetroChina Company Limited from September 2005 to July 2017. Mr. Liu was the general manager of the technology and information management department of PetroChina Company Limited from October 1999 to August 2005. Mr. Liu holds a bachelor's degree in engineering from Daqing Petroleum Institute, and a master's degree in business administration from the School of Management of University at Buffalo.

B. Compensation

For 2018, we paid an aggregate of approximately RMB13.0 million (US\$1.9 million) in cash to our executive officers and directors as a group. Our PRC subsidiary and consolidated affiliated entities are required by law to make contributions equal to certain percentages of each employee's salary for his or her pension insurance, medical insurance, housing fund, unemployment and other statutory benefits. Our executive officers and directors also received equity incentive compensation in the form of equity awards. For 2018, we granted an aggregate of 4,957 restricted share units to our executive officers and directors. For details on the share incentive grants to our executive officers and directors, see "—Share Incentive Plans."

Share Incentive Plans

Gridsum Holding Inc. Stock Option Plan

Our stock option plan was originally adopted in 2011 and amended in 2014 and 2017. This plan, which we refer to as our Stock Option Plan, is intended to promote our success and shareholder value by attracting, motivating and retaining selected employees and other eligible participants through awards of stock options.

A maximum of 2,500,000 ordinary shares were issuable pursuant to awards under our Stock Option Plan. As of March 31, 2019, 1,298,907 Class B ordinary shares were issuable pursuant to stock options outstanding under our Stock Option Plan. After the completion of our initial public offering, awards were no longer made under the Stock Option Plan, and were made under a successor equity plan known as Gridsum Holding Inc. Equity Incentive Plan, or our Equity Incentive Plan.

Eligibility. Our Stock Option Plan provides for the grant of stock options to our employees or employees of related entities, such as a parent or subsidiary corporation.

Administration. Subject to the terms of our Stock Option Plan, either our Board of Directors or the Compensation Committee has the discretion to make all decisions implementing our Stock Option Plan.

Stock Options. Stock options are granted pursuant to stock option agreements. In general, the Board or Compensation Committee determined the purchase price and the vesting and exercise schedule of each stock option, which are set forth in the stock option agreements with each optionee. Stock options may not be transferred, except by will or by the laws of descent or distribution, unless the Board or Compensation Committee otherwise determines.

Changes to Capitalization. In the event that there is a specified type of change in our capital structure not involving the receipt of consideration by us, our Stock Option Plan provides for the proportional adjustment of the number of shares reserved under our Stock Option Plan and the number of shares and exercise or purchase price, if applicable, of all outstanding options.

Change in Control Transactions. Unless otherwise provided in the option agreement or provided by the Board of Directors or Compensation Committee, in the event of certain change in control transactions, any or all outstanding stock options under our Stock Option Plan may be assumed or replaced by any surviving entity or will otherwise terminate without vesting acceleration.

Additional Provisions. Our Board of Directors has the authority to amend, alter, suspend or terminate our Stock Option Plan. However, no amendment or termination of the plan may adversely affect any rights under awards already granted to a participant without the affected participant's consent and certain changes may require shareholder approval.

Gridsum Holding Inc. Equity Incentive Plan

We adopted our Equity Incentive Plan upon the completion of our initial public offering in September 2016, and the Equity Incentive Plan was amended in 2017. The maximum number of shares which may be issued pursuant to all awards under our Equity Incentive Plan was 2,500,000 initially. The number of shares reserved for issuance under our Equity Incentive Plan has increased automatically on January 1, 2017, 2018 and 2019, and will increase automatically on January 1 of each of 2020 through 2026 by the number of shares equal to 2.5% of the aggregate number of outstanding Class B ordinary shares as of the immediately preceding December 31. However, our Board of Directors may reduce the amount of the increase in any particular year. In addition, the following Class B ordinary shares will again be available for grant and issuance under our Equity Incentive Plan:

- ordinary shares subject to options or share appreciation rights granted under our Equity Incentive Plan that cease to be subject to the option or stock appreciation right for any reason other than exercise of the option or share appreciation right;
- ordinary shares subject to awards granted under our Equity Incentive Plan that are subsequently forfeited or repurchased by us at the original issue price;
- ordinary shares subject to awards granted under our Equity Incentive Plan that otherwise terminate without ordinary shares being issued; and
- ordinary shares surrendered, cancelled or exchanged for cash or a different award (or combination thereof).

Shares that otherwise become available for grant and issuance because of the provisions above will not include shares subject to awards that initially became available due to our substitution of outstanding awards granted by another company in an acquisition of that company or otherwise.

As of March 31, 2019, 2,915,000 Class B ordinary shares may be issued pursuant to outstanding stock options and 1,372,801 Class B ordinary shares may be issued pursuant to outstanding RSUs under our Equity Incentive Plan, and there were 154,257 Class B ordinary shares reserved for future issuance.

Eligibility. Our Equity Incentive Plan provides for the grant of incentive stock options to our employees and any parent and subsidiary corporations' employees and for the grant of nonqualified share options, restricted shares, RSUs, share appreciation rights, share bonuses and performance awards to our employees, directors and consultants and our parent and subsidiary corporations' employees and consultants. No more than 5,000,000 shares may be issued as incentive stock options under our Equity Incentive Plan.

Administration. Our Equity Incentive Plan will be administered by the Board of Directors or by our Compensation Committee; in this plan description we refer to the Board of Directors or Compensation Committee as the plan administrator. The plan administrator determines the terms of all awards.

Types of Awards. Our Equity Incentive Plan will allow for the grant of options, restricted shares, RSUs, share appreciation rights, share bonuses and performance awards.

Award Agreements. All awards under our Equity Incentive Plan will be evidenced by an award agreement which shall set forth the number of ordinary shares subject to the award and terms and conditions of the award, which shall be consistent with our Equity Incentive Plan.

Term of Awards. The term of awards granted under our Equity Incentive Plan shall not exceed ten years from the date of grant. Subject to the foregoing, the plan administrator will be authorized to extend the term of any outstanding award.

Vesting Schedule and Price. The plan administrator will have sole discretion in setting the vesting period and, if applicable, exercise schedule of an award, determining that an award may not vest for a specified period after it is granted and accelerating the vesting period of an award. The plan administrator determines the exercise or purchase price of each award, to the extent applicable.

Transferability. Unless the plan administrator provides otherwise, our Equity Incentive Plan does not allow for the transfer of awards other than by will or the laws of descent and distribution. Unless otherwise permitted by the plan administrator, options may be exercised during the lifetime of the optionee only by the optionee or the optionee's guardian or legal representative.

Changes in Capitalization. In the event there is a specified type of change in our capital structure without our receipt of consideration, such as a share split, or if required by applicable law, appropriate adjustments will be made to the share maximums and exercise prices, as applicable, of outstanding awards under our Equity Incentive Plan.

Change in Control Transactions. In the event of specified types of mergers or consolidations, a sale, lease, or other disposition of all or substantially all of our assets or a corporate transaction, outstanding awards under our Equity Incentive Plan may be assumed or replaced by any surviving or acquiring corporation; the surviving or acquiring corporation may substitute similar awards for those outstanding under our Equity Incentive Plan; outstanding awards may be settled for the full value of such outstanding award (whether or not then vested or exercisable) in cash, cash equivalents, or securities (or a combination thereof) of the successor entity with payment deferred until the date or dates the award would have become exercisable or vested; or outstanding awards may be terminated for no consideration. The plan administrator, may, on a discretionary basis, accelerate, in full or in part, the vesting and exercisability of the awards.

Compliance with Law. Ordinary shares will not be issued under an award unless the issuance is permitted by applicable law.

Amendment and Termination. Our Equity Incentive Plan will terminate ten years from the date it is adopted by our Board of Directors, unless it is terminated earlier by our Board of Directors. Our Board of Directors may amend or terminate our Equity Incentive Plan at any time. Our Board of Directors generally may amend our Equity Incentive Plan, without shareholder approval unless required by applicable law.

The following table summarizes outstanding options held by our executive officers and directors as of March 31, 2019.

<u>Name</u>	<u>Class B Ordinary Shares Underlying Options Awarded</u>	<u>Exercise Price (US\$/Share)</u>	<u>Date of Grant</u>	<u>Date of Expiration</u>
Guosheng Qi	500,000	10.11	January 3, 2017	January 3, 2027
Xudong Gao	*	0.42	January 1, 2011	January 1, 2021
	*	0.42	July 1, 2011	July 1, 2021
Yanchun Bai	*	0.42	September 1, 2012	September 1, 2022
	*	0.42	September 1, 2013	September 1, 2023
Michael Peng Zhang	*	0.42	February 10, 2014	February 10, 2024
	*	10.11	January 3, 2017	January 3, 2027
Ravi Sarathy	300,000	10.11	January 3, 2017	January 3, 2027
	400,000	2.23	February 1, 2019	January 31, 2029
John Jiyang Liu	*	0.42	December 10, 2014	December 10, 2024
	*	10.11	January 3, 2017	January 3, 2027
Herman Fong	925,000	2.23	February 1, 2019	January 31, 2029

* Upon exercise of all options granted and vesting of all restricted share units, would beneficially own less than 1% of our outstanding ordinary shares.

The following table summarizes outstanding RSUs held by our executive officers and directors under our Equity Incentive Plan as of March 31, 2019.

<u>Name</u>	<u>Class B Ordinary Shares Underlying Options Awarded</u>	<u>Date of Grant</u>	<u>Date of Expiration</u>
Xijian Liu	*	August 28, 2017	August 28, 2027
	*	August 28, 2018	August 28, 2028

* Upon exercise of all options granted and vesting of all restricted share units, would beneficially own less than 1% of our outstanding ordinary shares.

As of March 31, 2019, other individuals as a group hold options to purchase 1,218,621 Class B ordinary shares, with a weighted average exercise price of US\$2.24 per ordinary share; other individuals as a group hold RSUs for 1,364,627 Class B ordinary shares upon vesting.

C. Board Practices

Board of Directors

Our Board of Directors currently consists of seven directors. Under Cayman Islands law, a director is not required to hold any shares in the company to qualify to serve as a director. A director may vote in respect of any contract or transaction in which he or she is interested, provided that the director shall disclose the nature of his or her interest in such contract or transaction at or prior to its consideration and any vote thereon. Our Board of Directors may exercise all the powers of our company to borrow money and to mortgage or charge its undertaking, property and uncalled capital or any part thereof, and to issue debentures whether outright or as security for any debt, liability or obligation of our company or of any third party. We have no service contract with any of our directors providing for benefits upon termination of employment.

Committee of the Board of Directors

We have established three committees of the Board of Directors. The committees are the Audit Committee, the Compensation Committee and the Nominating and Corporate Governance Committee. We have adopted a charter for each of these committees. We are relying on home country practices whereby our Compensation Committee and Nominating and Corporate Governance Committee need not consist of all independent directors. Each committee's members and functions are described below:

Audit Committee

Our Audit Committee consists of Mr. Gao, Mr. Lee and Mr. Lu, and is chaired by Mr. Lee. We have determined that Mr. Gao, Mr. Lee and Mr. Lu each satisfy the independence requirements of The Nasdaq Stock Market and Rule 10A-3 under the Exchange Act. Mr. Lee meets the criteria of an audit committee financial expert as set forth under the applicable rules of the SEC.

The Audit Committee oversees our accounting and financial reporting processes and the audits of the financial statements of our company. It is responsible for, among other things:

- appointing the independent auditor and pre-approving all auditing and non-auditing services permitted to be performed by the independent auditor;
- reviewing with the independent auditor any audit problems or difficulties and management's response;
- reviewing and approving all proposed related party transactions;
- reviewing and discussing audited annual financial statements with management and the independent auditor;

- reviewing major issues as to the adequacy of our internal controls and any special audit steps adopted in light of material control deficiencies;
- annually reviewing and reassessing the adequacy of our Audit Committee charter;
- meeting separately and periodically with management and the independent auditor; and
- reporting regularly to the Board of Directors.

Compensation Committee

Our Compensation Committee consists of Mr. Gao and Mr. Lee, and is chaired by Mr. Gao. We have determined that Mr. Gao and Mr. Lee each satisfy the independence requirements of The Nasdaq Stock Market for compensation committee members set forth in Rule 5605(d)(2)(A).

The Compensation Committee assists the Board of Directors in reviewing and approving the compensation structure, including all forms of compensation, relating to our directors and executive officers. The Compensation Committee is responsible for, among other things:

- reviewing and approving, or recommending to the Board of Directors for its approval, the compensation of our chief executive officer and other executive officers;
- reviewing and approving, or recommending to the Board of Directors for its approval, the compensation of our directors; and
- reviewing periodically and making recommendations to the Board of Directors regarding any long-term incentive compensation or equity plans, programs or similar arrangements, annual bonuses, employee pension and welfare benefit plans; and
- selecting compensation consultant, legal counsel or other advisers for the committee after taking into consideration all factors relevant to that person's independence from management.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee consists of Mr. Gao, Mr. Qi and Mr. Lu, and is chaired by Mr. Lu. We have determined that Mr. Gao and Mr. Lu each satisfy the independence requirements of The Nasdaq Stock Market. The Nominating and Corporate Governance Committee assists the Board of Directors in selecting individuals qualified to serve on the Board of Directors and in determining the composition of the Board of Directors and its committees. The Nominating and Corporate Governance Committee is responsible for, among other things:

- identifying and recommending to the Board nominees for election by the shareholders or appointment by the Board of Directors;
- reviewing annually with the Board of Directors the current composition of the Board of Directors with regard to characteristics such as independence, knowledge, skills, experience and diversity;
- making recommendations on the frequency and structure of Board of Directors meetings and monitoring the functioning of Board of Directors committees; and
- advising the Board of Directors periodically about significant developments in the law and practice of corporate governance as well as our compliance with applicable laws and regulations and making recommendations to the Board of Directors on all matters of corporate governance.

Duties of Directors

Under Cayman Islands law, our directors have a fiduciary duty to act honestly in good faith with a view to our best interests. Our directors also have a duty to exercise the skill they actually possess and such care and diligence that a reasonably prudent person would exercise in comparable circumstances. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association. A shareholder may have the right to seek damages if a duty owed by our directors is breached. See “Item 10. Additional Information—B. Memorandum and Articles of Association—Differences in Corporate Law” for additional information on our standard of corporate governance under Cayman Islands law.

Terms of Directors and Officers

Our officers are elected by and serve at the discretion of the Board of Directors. 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 a special resolution of our shareholders. A director will be removed from office automatically if, among other things, the director becomes bankrupt or makes any arrangement or composition with his creditors generally, or dies or is found by our company to be of unsound mind.

Employment Agreements and Indemnification Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, we may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction of a criminal offense, fraud or dishonesty, material misconduct or material failure to discharge the officer’s duties to our detriment. An executive officer may terminate his employment at any time with a thirty-day prior written notice.

Each executive officer has agreed to hold in strict confidence and not to use or disclose to any person, corporation or other entity any of our proprietary information or trade secrets. Each executive officer has also agreed to assign to our company all inventions and works of authorship which the executive officer develops during the period of his or her employment with us that are either related to the scope of the employment or make use of the resources of our company. In addition, all executive officers have agreed to be bound by non-competition restrictions set forth in their agreements during the term of employment.

We have entered into indemnification agreements with each of our directors and executive officers, under which we agree to indemnify them against certain liabilities and expenses they may incur in connection with claims made by reason of their being our directors or executive officers.

D. Employees

We had 929, 1,078 and 1,192 employees as of December 31, 2016, 2017 and 2018, respectively. All of our employees are based in China.

The following table sets out the breakdown of our employees by function as of December 31, 2018:

<u>Function</u>	<u>Number of employees</u>
Sales and marketing	571
Research and development	491
General and administrative	130
Total	1,192

We enter into standard employment agreements and standard confidentiality agreements with all of our employees. We also entered into non-competition agreement with certain of our key employees upon termination of their employment agreement, which provide with a non-compete restricted period typically expiring one year after the termination of employment, and we agreed to provide reasonable compensation to the employees during the restricted period.

In accordance with Chinese regulations, we participate in various employee social security plans that are organized by municipal and provincial governments, including pension insurance, medical insurance, unemployment insurance, maternity insurance, job-related injury insurance and housing fund. We are required by PRC laws to make contributions to employee social security 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.

None of our employees are covered by collective bargaining agreements, and we consider our relations with our employees to be good.

E. Share Ownership

The following table sets forth information concerning the beneficial ownership of our ordinary shares, as of March 31, 2019, by:

- each of our directors and executive officers; and
- each person known to us to beneficially own more than 5% of our ordinary shares.

The calculations in the table below are based on 34,302,710 ordinary shares outstanding as of March 31, 2019, comprising (i) 4,543,461 Class A ordinary shares, and (ii) 29,759,249 Class B ordinary shares (excluding 794,358 Class B ordinary shares issued to our depository bank for bulk issuance of ADSs reserved for future issuances upon the exercise or vesting of awards granted under our share incentive plans).

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 within 60 days of March 31, 2019, 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.

	Ordinary shares beneficially owned				
	Class A ordinary shares	Class B ordinary shares	Total ordinary shares on as- converted basis	% of total ordinary shares on as- converted basis	% of aggregate voting power ⁽²⁾
Directors and Executive Officers: ⁽¹⁾					
Guosheng Qi ⁽³⁾	4,543,461	4,792,667	9,336,128	27.0	66.5
Guofa Yu ⁽⁴⁾	—	1,393,038	1,393,038	4.1	1.9
Herman Fong	—	—	—	—	—
Yanchun Bai	—	*	*	*	*
Xudong Gao	—	*	*	*	*
Dannis Cheuk Yin Lee	—	—	—	—	—
Feng Lu	—	—	—	—	—
Michael Peng Zhang	—	*	*	*	*
Ravi Sarathy	—	*	*	*	*
John Jiyang Liu	—	*	*	*	*
Aaron Feng Li ⁽⁵⁾	—	1,200,000	1,200,000	3.5	1.6
Michael Yang Xu ⁽⁶⁾	—	515,000	515,000	1.5	0.7
Xijian Liu	—	*	*	*	*
All directors and executive officers as a group (13 persons)	4,543,461	7,165,731	11,709,192	32.9	68.8
Principal Shareholders:					
Generation Gospel Limited ⁽⁷⁾	4,543,461	1,167,707	5,711,168	16.5	61.7
FutureX Innovation SPC ⁽⁸⁾	—	6,153,846	6,153,846	17.9	8.2
Fairy Spirit Limited ⁽⁹⁾	—	3,563,501	3,563,501	10.4	4.7

	Ordinary shares beneficially owned				
	Class A ordinary shares	Class B ordinary shares	Total ordinary shares on as- converted basis	% of total ordinary shares on as- converted basis	% of aggregate voting power ⁽²⁾
Steamboat Ventures Asia, L.P. ⁽¹⁰⁾	—	3,439,340	3,439,340	10.0	4.6
Hammer Capital Private Investments Limited ⁽¹¹⁾	—	3,125,000	3,125,000	9.1	4.2
Light Street Capital Management, LLC ⁽¹²⁾	—	2,608,528	2,608,528	7.6	3.5
Moon Capital Management LP ⁽¹³⁾	—	2,374,675	2,374,675	6.9	3.2
Entities affiliated with Goldman Sachs ⁽¹⁴⁾	—	2,275,157	2,275,157	6.6	3.0
Garden Enterprises Ltd. ⁽¹⁵⁾	—	1,393,038	1,393,038	4.1	1.9

* Represents less than 1%.

- (1) The business address of our directors and executive officers is South Wing, High Technology Building, No. 229 North 4th Ring Road, Haidian District, Beijing 100083, People's Republic of China.
- (2) For each person or group included in this column, the percentage of total voting power represents voting power based on all ordinary shares beneficially owned by such person or group. Each Class A ordinary share is entitled to ten votes and is convertible at any time into one Class B ordinary share. Each Class B ordinary share is entitled to one vote and is not convertible into Class A ordinary shares under any circumstances.
- (3) Represents (i) 4,543,461 Class A ordinary shares held by Generation Gospel Limited, as described in footnote (7); (ii) 937,500 Class B ordinary shares directly held by Mr. Qi or held by Generation Gospel Limited, as described in footnote (7); (iii) 3,563,501 Class B ordinary shares held by Fairy Spirit Limited, as described in footnote (9) below; and (iii) 291,666 Class B ordinary shares that Mr. Qi or Generation Gospel Limited is entitled to acquire upon exercise of options held by it under our Stock Option Plan, as described in footnote (7) below.
- (4) Represents 1,393,038 Class B ordinary shares held by Garden Enterprises Ltd., as described in footnote (15) below.
- (5) Represents 1,200,000 Class B ordinary shares beneficially owned by Mr. Li through Fairy Spirit Limited, as described in footnote (9) below.
- (6) Represents 515,000 Class B ordinary shares beneficially owned by Mr. Xu through Fairy Spirit Limited, as described in footnote (9) below.
- (7) Represents (i) 4,543,461 Class A ordinary shares, (ii) 890,625 Class B ordinary shares, and (ii) 277,082 Class B ordinary shares that Generation Gospel Limited is entitled to acquire upon exercise of options held by it under our Stock Option Plan. Generation Gospel Limited, a British Virgin Islands company, is wholly owned by Guosheng Qi, our chief executive officer and chairman. The registered address of Generation Gospel Limited is Geneva Place, Waterfront Drive, P.O. Box 3469, Road Town, Tortola, British Virgin Islands.
- (8) Represents 6,153,846 Class B ordinary shares issuable upon conversion of the US\$40,000,000 convertible note issued by us to FutureX Innovation SPC (on behalf of and for the account of New Technology Fund II SP as one of its segregated portfolios), as reported in a Schedule 13D jointly filed on May 15, 2018 by FutureX Innovation SPC (on behalf of and for the account of New Technology Fund II SP as one of its segregated portfolios), FutureX Capital Limited, FutureX Asset Management Limited, Qian Zhang and Yuqian Rong. According to the Schedule 13D filing, FutureX Capital Limited is the sole management shareholder of FutureX Innovation SPC and the sole shareholder of FutureX Asset Management Limited. FutureX Asset Management Limited acts as the investment manager of FutureX Innovation SPC. Qian Zhang is a director of FutureX Innovation SPC, and a director and the sole shareholder of FutureX Capital Limited. Yuqian Rong is a director of FutureX Capital Limited and the sole director of FutureX Asset Management Limited. The business address of these entities and persons is Unit 1602, Cheung Kong Center, 2 Queen's Road, Central, Hong Kong.
- (9) Represents 3,563,501 Class B ordinary shares held by Fairy Spirit Limited, a British Virgin Islands company owned by certain key employees of our company, including Aaron Feng Li and Michael Yang Xu, and controlled by Guosheng Qi, our chief executive officer and chairman. The registered address of Fairy Spirit Limited is Geneva Place, Waterfront Drive, P.O. Box 3469, Road Town, Tortola, British Virgin Islands.
- (10) Represents 3,439,340 Class B ordinary shares owned by Steamboat Ventures Asia, L.P., as reported in a Schedule 13G jointly filed on February 14, 2019 by Steamboat Ventures Asia, L.P., Steamboat Ventures Asia Manager, L.P., Steamboat Ventures Asia GP, Ltd., John R. Ball and Liping Fan. According to the Schedule 13G filing, the general partner of Steamboat Ventures Asia, L.P. is Steamboat Ventures Asia Managers, L.P. The general partner of Steamboat Ventures Asia Managers, L.P. is Steamboat Ventures Asia GP, Ltd. John R. Ball and Liping Fan are directors of Steamboat Ventures Asia GP, Ltd., and may be deemed to have share power to vote and dispose of these shares. The business address of these entities and persons is Steamboat Ventures Asia, c/o Campbell's Corporate Services Limited, Floor 4, Willow House, Cricket Square, P.O. Box 268, Grand Cayman KY1-9010, Cayman Islands.

- (11) Hammer Capital Private Investments Limited, a British Virgin Islands company, acquired 3,125,000 Class B ordinary shares on March 4, 2019 pursuant to a share subscription agreement dated February 28, 2019. The registered address of Hammer Capital Private Investments Limited is Mandar House, 3rd Floor, Johnson's Ghut, Tortola, British Virgin Islands.
- (12) Represents (i) 2,535,146 Class B ordinary shares held in the form of ADSs for the account of Light Street Mercury Master Fund, L.P., or Mercury, and (ii) 73,382 Class B ordinary shares held in the form of ADSs for the account of Light Street Tungsten Master Fund, L.P., or Tungsten, as reported in a Schedule 13G jointly filed on February 14, 2019 by Light Street Capital Management, LLC, or LSCM, Glen Thomas Kacher and Mercury. LSCM serves as investment adviser and general partner to each of Mercury and Tungsten, and, in such capacity, exercises voting and investment power over the shares held in the accounts for each of Mercury and Tungsten. Glen Thomas Kacher is the chief investment officer of LSCM. The business address for these entities and persons is 525 University Avenue, Suite 300, Palo Alto, CA 94301.
- (13) Represents 151,403 Class B ordinary shares directly owned by Moon Capital Master Fund Ltd., or the Flagship Fund, and 2,195,569 Class B ordinary shares owned directly by Moon Capital Partners Master Fund Ltd., or the Partners Fund, and 17,703 Class B ordinary shares directly owned by Moon Capital Performance Plus Master Fund Ltd., or the Performance Plus Fund, as reported in a Schedule 13G jointly filed on February 13, 2019 by Moon Capital Management LP, JWM Capital LLC, John W. Moon, the Flagship Fund, the Partnership Fund and the Performance Plus Fund. According to the Schedule 13G filing, Moon Capital Management LP serves as the investment manager of the Flagship Fund, the Partners Fund and the Performance Plus Fund. JWM Capital LLC serves as the general partner to Moon Capital Management LP, with respect to the Class B ordinary shares directly owned by the Flagship Fund and the Partners Fund. John W. Moon serves as the managing member of JWM Capital LLC with respect to the Class B ordinary shares directly owned by the Flagship Fund and the Partners Fund. The business address for these entities and persons is 499 Park Avenue, 8th Floor, New York, NY 10022.
- (14) The number of ordinary shares beneficially owned is as of December 31, 2018, as reported in a Schedule 13G jointly filed on February 11, 2019 by The Goldman Sachs Group, Inc., Goldman, Sachs & Co. LLC and certain other entities. The ordinary shares beneficially owned by entities affiliated with Goldman Sachs include (i) 1,657,444 Class B ordinary shares held by Broad Street Principal Investments, L.L.C., (ii) 258,332 Class B ordinary shares held by Bridge Street 2015, L.P., (iii) 96,231 Class B ordinary shares held by Bridge Street 2015 Offshore, L.P., (iv) 66,539 Class B ordinary shares held by MBD 2015, L.P., (v) 23,933 Class B ordinary shares held by MBD 2015 Offshore, L.P., (vi) 75,377 Class B ordinary shares held by Stone Street 2015, L.P., (vii) 32,069 Class B ordinary shares held by Stone Street 2015 Offshore L.P., and (viii) the Goldman Sachs Group, Inc. and Goldman, Sachs & Co. may also be deemed to beneficially own 65,232 Class B ordinary shares in the form of ADS held by certain other investment entities of which Goldman, Sachs & Co. acts as the investment manager. The Goldman Sachs Group, Inc. is the parent holding company of the entities in abovementioned item (i) to (vii). The business address of these entities is 200 West Street, New York, NY 10282.
- (15) Represents 1,393,038 Class B ordinary shares held by Garden Enterprises Ltd., a British Virgin Islands company wholly owned by Guofa Yu, our director and chief operating officer. The registered address of Garden Enterprises Ltd. is Geneva Place, Waterfront Drive, PO Box 3469, Road Town, Tortola, British Virgin Islands.

To our knowledge, as of March 31, 2019, four shareholders in the United States held an aggregate of 900,248 Class B ordinary shares, representing approximately 2.6% of our total outstanding ordinary shares on record as of March 31, 2019, and none of our outstanding Class A ordinary shares were held by record holders in the United States. In addition, Citi (Nominees) Limited, the custodian of our depository bank, held 17,953,700 Class B ordinary shares on record (excluding 794,358 Class B ordinary shares issued to it for bulk issuance of ADSs reserved for future issuances upon the exercise or vesting of awards granted under our share incentive plans), representing approximately 52.3% of our total outstanding shares on record as of March 31, 2019. 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 ordinary shares in the United States. We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our company, other than the previously announced proposed going private transaction described in "Item 4. Information on the Company—A. History and Development of the Company."

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

See "Item 6. Directors, Senior Management and Employees—E. Share Ownership."

B. Related Party Transactions

Contractual Arrangements

See "Item 4. Information on the Company—C. Organizational Structure" for a description of the contractual arrangements between the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding.

Shareholders Agreement

On June 30, 2015, we entered into a second amended and restated shareholders agreement with our then existing shareholders. Pursuant to the agreement, we have granted certain registration rights to holders of our registrable securities, which include our ordinary shares issued or issuable upon conversion of preferred shares, ordinary shares owned or acquired by the holders of our preferred shares, and ordinary shares issued as a dividend or distribution of, in exchange for, or in replacement of, the ordinary shares mentioned above. Set forth below is a description of the registration rights granted under the agreement.

Demand Registration Rights. Holders of at least 25% of then outstanding registrable securities have the right to demand in writing that we file a registration statement covering the offer and sale of their securities. We, however, are not obligated to effect more than two demand registrations, unless the sale of all registrable securities sought to be included in such registration is not consummated for reasons not attributable to the requesting holders.

Form F-3 or Form S-3 Registration Rights. When we are eligible for registration on Form F-3 or Form S-3, any holder of our then outstanding registrable securities has the right to request that we file a registration statement under Form F-3. We, however, are not obligated to effect more than two registrations within any 12-month period pursuant to this registration right, unless the sale of all registrable securities sought to be included in such registration is not consummated for reasons not attributable to the requesting holders.

Deferral of Registration. We are not obligated to effect the above demand registration or Form F-3 or Form S-3 registration, (i) if, within ten days of the receipt of any registration request, we give notice to the requesting holders of our intention to effect the filing for our own account of a registration statement of ordinary shares within 60 days of receipt of such request, and we are actively employing in good faith our best efforts to cause such registration statement to become effective within such 60-day period or (ii) during the period starting with the date of filing by us of, and ending six months following the effective date of, any registration statement pertaining to our ordinary shares, provided that in either case, the holders of registrable securities are entitled to join such registration subject to the piggyback registration rights described below. Furthermore, we have the right to defer filing of a registration statement for up to 90 days if we provide the requesting holders a certificate signed by our chief executive officer stating that in the good faith judgment of our Board of Directors that filing of a registration statement in the near future will be materially detrimental to us and our shareholders, but we cannot exercise the deferral right more than once in any 12-month period, nor can we register any other securities during the period the requested registration is deferred.

Piggyback Registration Rights. If we propose to file a registration statement for a public offering of our equity securities, either for our own account or for the account of any shareholder other than a holder of registrable securities, other than, among other things, relating to the sale of securities to participate in our share plan or a corporate reorganization, then we must use our best efforts to include in the registration any registrable securities requested by their holder to be registered. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in the registration statement.

Expenses of Registration. We will pay all expenses, other than underwriting discounts and commissions, relating to any demand, Form F-3 or Form S-3 or piggyback registration. We are not required to pay for any expenses of any registration proceeding begun in response to holders' exercise of their registration rights if the registration request is subsequently withdrawn at the request of the holders of a majority of the registrable securities to be registered.

Termination of Obligations. The registration rights described above shall terminate on the earlier of (i) the date that is five years after the closing of our initial public offering or (ii) with respect to any holder of registrable securities, the date on which such holder may sell all of such holder's registrable securities under Rule 144 of the Securities Act in any 90-day period without registration.

All of the rights provided to our preferred shareholders under the shareholders agreement, except for registration rights, have automatically terminated upon the completion of our initial public offering in September 2016.

Loan Guarantee

In 2017 and 2018, we entered into several short-term guaranteed loan agreements. Each of the loan agreements provides for a RMB revolving credit facility with a maturity term within twelve months. Guosheng Qi, our chief executive officer and chairman, provided guarantees for some of these credit facilities.

Employment Agreements and Indemnification Agreements

See “Item 6. Directors, Senior Management and Employees—C. Board Practices—Employment Agreements and Indemnification Agreements.”

Share Incentives

See “Item 6. Directors, Senior Management and Employees—B. Compensation—Share Incentive Plans.”

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

Financial Statements

Please see “Item 18. Financial Statements.”

Legal Proceedings

From time to time we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business.

On April 25, 2018 and June 25, 2018, purported securities class action complaints were filed in the United States District Court for the Southern District of New York against us, Guosheng Qi, our chief executive officer and chairman, and Michael Peng Zhang, our co-chief financial officer, among other defendants. These lawsuits, which are captioned Xu v. Gridsum Holding Inc., et al., Case No. 18-CV-3655, and Li v. Gridsum Holding Inc., et al., Case No. 18-CV-5749, alleged, among other things, that “false and/or misleading statements” were made “and/or” we failed to disclose our lack of effective controls over financial reporting, in connection with our announcement on April 23, 2018 that our financial statements for the year ended December 31, 2016 should no longer be relied upon. On September 17, 2018, the court appointed a lead plaintiff pursuant to the Private Securities Litigation Reform Act of 1995 and ordered the lawsuits consolidated. A consolidated amended complaint was filed on November 30, 2018 that variously alleges violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, Rule 10b-5 of the Securities Exchange Act of 1934, and Sections 11 and 15 of the Securities Act for a putative class period between September 22, 2016 to April 20, 2018, against us and our current and former officers and directors, among other defendants. On March 1, 2019, the lead plaintiff filed a second amended class action complaint, or the SAC. The court has entered a schedule for the defendants’ motions to dismiss the SAC, and the briefing on defendants’ motions is now underway.

On July 2, 2018, a third purported securities class action complaint was filed in the Supreme Court of the State of New York against us and certain of our current and former directors and executive officers, among other defendants, variously alleging violations of Sections 11, 12(a)(2) and 15 of the Securities Act against them. The lawsuit, captioned, Gordon v. Gridsum Holding Inc., et al., Index No. 18-653342, is brought on behalf of a putative class of shareholders who “purchased or otherwise acquired” ADSs in our initial public offering on September 23, 2016, and are based on substantially the same allegations as the consolidated proceeding described above. On January 22, 2019, an amended complaint was filed. On April 10, 2019, the court granted our motion to stay this action pending the determination of the federal action, and this action remains stayed.

We believe that the claims against us are without merit and intend to vigorously defend against the litigation.

Except for the shareholder class action lawsuits described above, there were no legal or arbitration proceedings that have had in the recent past, or to our knowledge may have, a material adverse effect on our financial position, profitability or cash flows.

Dividend Policy

We have not previously declared or paid cash dividends and have no plan to declare or pay any dividends on our shares or ADSs for the foreseeable future. We currently intend to retain most, if not all, of our available funds and any future earnings to operate and expand our business.

We are a holding company incorporated in the Cayman Islands. We rely principally on dividends from our PRC subsidiary for our cash requirements, including any payment of dividends to our shareholders. PRC regulations may restrict the ability of our PRC subsidiary to pay dividends to us. See “Item 3. Key Information—D. Risk Factors—Risks Relating to Doing Business in China—Any limitation on the ability of the WFOE to make distributions to us, or the tax implications thereof, could have a material adverse effect on our business or financial condition.”

Our Board of Directors has discretion as to whether to distribute dividends, subject to applicable laws. 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 the ADS holders to the same extent as holders of our ordinary 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 ordinary 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. Offer and Listing Details

Our ADSs have been quoted on The Nasdaq Stock Market under the symbol “GSUM” since September 23, 2016. Each ADS represents one Class B ordinary share. On April 23, 2019, the last reported sale price of our ADSs on The Nasdaq Stock Market was US\$3.20.

B. Plan of Distribution

Not applicable.

C. Markets

Our ADSs have been listed on The Nasdaq Stock Market under the symbol “GSUM” since September 23, 2016.

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

Company Objects and Purposes

We are a Cayman Islands exempted company and our affairs are governed by our memorandum and articles of association, as amended and restated from time to time, the Companies Law (2018 Revision) of the Cayman Islands, which is referred to below as the Companies Law, and the common law of the Cayman Islands. A Cayman Islands exempted company is a company that conducts its business outside of the Cayman Islands, is exempted from certain requirements of the Companies Law, including a filing of an annual return of its shareholders with the Registrar of Companies, does not have to make its register of shareholders open to inspection and may obtain an undertaking against the imposition of any future taxation.

According to our fifth amended and restated memorandum and articles of association, the objects for which we are established are unrestricted and we have full power and authority to carry out any object not prohibited by the Companies Law or any other law of the Cayman Islands.

The following are summaries of material terms and provisions of our fifth amended and restated memorandum and articles of association and the Companies Law insofar as they relate to the material terms of our ordinary shares. These summaries are not complete, and you should read our fifth amended and restated memorandum and articles of association, which was filed as exhibits to our registration statement on Form F-1 (file number: 333-213348).

The holders of our ADSs will not be treated as our shareholders and will be required to surrender their ADSs for cancellation and withdrawal from the depository facility in which the ordinary shares are held in order to exercise shareholders' rights in respect of the ordinary shares. The depository will agree, so far as it is practical, to vote or cause to be voted the amount of ordinary shares represented by ADSs in accordance with the non-discretionary written instructions of the holder of such ADSs.

Registered Office

Our registered office in the Cayman Islands is located at the offices of International Corporation Services Ltd., Harbour Place 2nd Floor, 103 South Church Street, P.O. Box 472, George Town, Grand Cayman KY1-1106.

Board of Directors

See "Item 6. Directors, Senior Management and Employees—C. Board Practices."

Ordinary Shares

General

As of the date of this annual report, our authorized share capital is US\$200,000 divided into 200,000,000 ordinary shares, par value of US\$0.001 per share, which is divided into 20,000,000 Class A ordinary shares, par value of US\$0.001 per share, and 180,000,000 Class B ordinary shares, par value of US\$0.001 per share. Holders of Class A ordinary shares and Class B ordinary shares have the same rights except for voting and conversion rights. All of our outstanding ordinary shares are fully paid up and non-assessable. Certificates representing the ordinary shares are issued in registered form. Our shareholders who are non-residents of the Cayman Islands may freely hold and vote their shares.

Dividends

The holders of our ordinary shares are entitled to such dividends as may be declared by our Board of Directors. Holders of Class A ordinary shares and Class B ordinary shares are entitled to the same amount of dividends, if declared.

Voting Rights

In respect of all matters subject to a shareholders' vote, each Class A ordinary share is entitled to ten votes, and each Class B ordinary share is entitled to one vote, voting together as one class. Voting at any shareholders' meeting is by show of hands unless a poll is demanded. A poll may be demanded by the chairman or any shareholder(s) present in person or by proxy holding at least 10% of the voting share capital of our company. Actions that may be taken at a general meeting may also be taken by a unanimous resolution of the shareholders in writing.

A quorum of shareholders for a general meeting consists of the holders of at least 50% of the aggregate voting power of all outstanding ordinary shares, being entitled to vote, attend and vote at the general meeting. An ordinary resolution to be passed at a general meeting requires the affirmative vote of a simple majority of the votes cast, while a special resolution requires the affirmative vote of at least two-thirds of votes cast at a general meeting. A special resolution will be required for important matters.

An annual general meeting may be held each year. Extraordinary general meetings may be held at such times as may be determined by our board of directors, and must be held upon requisition by shareholders holding at least one-third of the aggregate voting power of our issued and outstanding shares. Advance notice of at least 14 calendar days is required for any general meetings.

Conversion

Each Class A ordinary share is convertible into one Class B ordinary share at any time by the holder thereof. Class B ordinary shares are not convertible into Class A ordinary shares under any circumstances. Upon any transfer of Class A ordinary shares by the holder or beneficial owner thereof to any person that is not affiliated with such holder or beneficial owner, such Class A ordinary shares will be automatically and immediately converted into an equal number of Class B ordinary shares.

Transfer of Ordinary Shares

Subject to the restrictions set out below, any of our shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in the usual or common form or any other form approved by our Board of Directors.

Our Board of Directors may, in its sole discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which we have a lien. Our directors may also decline to register any transfer of any ordinary share unless (a) the instrument of transfer is lodged with us, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as our Board of Directors may reasonably require to show the right of the transferor to make the transfer; (b) the instrument of transfer is in respect of only one class of ordinary shares; (c) the instrument of transfer is properly stamped, if required; (d) in the case of a transfer to joint holders, the number of joint holders to whom the ordinary share is to be transferred does not exceed four; and (e) any fee related to the transfer has been paid to us.

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, with 14 days' prior notice, be suspended and the register closed at such times and for such periods as our Board of 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.

Liquidation

On a return of capital on winding up or otherwise (other than on conversion, redemption or purchase of shares), assets available for distribution among the holders of ordinary shares shall be distributed among the holders of the ordinary shares on a pro rata basis. If our assets available for distribution are insufficient to repay all of the paid up capital, the assets will be distributed so that the losses are borne by our shareholders proportionately.

Calls on Ordinary Shares and Forfeiture of Ordinary Shares

Our Board of Directors may from time to time make calls upon shareholders for any amounts unpaid on their ordinary shares in a notice served to such shareholders at least 14 days prior to the specified time and place of payment. The shares that have been called upon and remain unpaid on the specified time are subject to forfeiture.

Redemption of Shares

We may issue shares on terms that are subject to redemption, at our option or at the option of the holders, on such terms and in such manner as may be determined by our Board of Directors.

Variations of Rights of Shares

All or any of the special rights attached to any class of shares may, be varied with the sanction of a special resolution passed at a general meeting of the holders of the shares of that class. Consequently, the rights of any class of shares cannot be altered without a majority of two-thirds of the votes cast at such meeting.

Inspection of Books and Records

Holders of our ordinary shares will have no general right under Cayman Islands law to inspect or obtain copies of our list of shareholders or our corporate records. However, we will provide our shareholders with annual audited financial statements.

Issuance of Additional Shares

Our fifth amended and restated memorandum and articles of association authorizes our Board of Directors to issue additional ordinary shares from time to time as our Board of Directors shall determine, to the extent of available authorized but unissued shares.

Our fifth amended and restated memorandum and articles of association also authorizes our Board of Directors to establish from time to time one or more series of preferred shares and to determine, with respect to any series of preferred shares, the terms and rights of that series, including:

- the designation of the series;
- the number of shares of the series;
- the dividend rights, dividend rates, conversion rights, voting rights; and
- the rights and terms of redemption and liquidation preferences.

Our Board of Directors may issue preferred shares without action by our shareholders to the extent authorized but unissued. Issuance of these shares may dilute the voting power of holders of ordinary shares.

Differences in Corporate Law

The Companies Law is derived, to a large extent, from the older Companies Acts of England but does not follow recent United Kingdom statutory enactments, and accordingly there are significant differences between the Companies Law and the current Companies Act of England. In addition, the Companies Law differs from laws applicable to United States corporations and their shareholders. Set forth below is a summary of the significant differences between the provisions of the Companies Law applicable to us and the laws applicable to companies incorporated in the United States and their shareholders.

Mergers and Similar Arrangements

The Companies Law 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 combined 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 written plan of merger or consolidation must be filed with the Registrar of Companies together with a certificate of good standing, a declaration as to the solvency of the consolidated or surviving company and a further director declaration that the merger or consolidation is bona fide and covering such other matters as required by the Companies Law, including 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. Dissenting shareholders have the right to be paid the fair value of their shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) if they follow the required procedures, subject to certain exceptions. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

In addition, there are statutory provisions that facilitate the reconstruction and amalgamation of companies, provided that the arrangement is approved by a majority in number of each class of shareholders or 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 Law.

When a takeover 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 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, the dissenting shareholder would have no rights comparable to appraisal rights, 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

Generally legal proceedings can be originated in the Grand Court of the Cayman Islands. In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company and a derivative action may ordinarily not be brought by a minority shareholder. However, based on English authority, which would in all likelihood be of persuasive authority in the Cayman Islands, the Cayman Islands courts can be expected (and have had occasion) to follow and apply the common law principles (namely the rule in *Foss v. Harbottle* and the exceptions thereto) so that a non-controlling shareholder may be permitted to commence a class action against, or derivative actions in the name of, our company to challenge:

- an act which is illegal or ultra vires and is therefore incapable of ratification by the shareholders;
- an act which requires a resolution with a qualified or special majority which has not been obtained; and
- an act which constitutes a fraud against the minority where the wrongdoers are themselves in control of the company.

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 fifth amended and restated memorandum and articles of association require us to indemnify our officers and directors for losses, damages, costs and expenses incurred in their capacities as such unless such losses or damages arise from dishonesty, willful default 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 fifth amended and restated 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.

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 or she reasonably believes to be in the best interests of the corporation. He or she 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 or she owes the following duties to the company—a duty to act in good faith in the best interests of the company, a duty not to make a personal profit based on his position as director (unless the company permits him to do so), 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 and a duty to exercise powers for the purpose for which such powers were intended. 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. Cayman Islands law and our fifth amended and restated articles of association provide that shareholders may approve corporate matters by way of a unanimous written resolution signed by or on behalf of each shareholder who would have been entitled to vote on such matter at a general meeting without a meeting being held.

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.

Cayman Islands law 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. However, these rights may be provided in a company's articles of association. Our fifth amended and restated articles of association allow our shareholders holding at least one-third of the aggregate voting power of our issued and outstanding shares to requisition a general meeting. However, our fifth amended and restated articles of association do not provide our shareholders with any right to put proposal before a general meeting.

As a Cayman Islands exempted company, we are not obliged by the Companies Law to call shareholders' annual general meetings. Our fifth amended memorandum and articles of association provide that we may (but are not obliged to) in each year hold a general meeting at such time and place as may be determined by our 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. As permitted under Cayman Islands law, our fifth amended and restated articles of association do not provide for cumulative voting. 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 fifth amended and restated articles of association, directors may be removed with or without cause, by a special resolution of our shareholders.

Transactions with Interested Shareholders

The Delaware General Corporation Law contains a business combination statute applicable to Delaware public 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 shares 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 for a proper purpose 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. Under the Companies Law, our company may be dissolved, liquidated or wound up by a special resolution of our shareholders or by an ordinary resolution on the basis that our company is unable to pay its debts as they fall due.

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 Cayman Islands law and our fifth amended and restated articles of association, the rights attached to any class or series of our shares may be varied with a special resolution passed at a general meeting of the holders of the shares of that class or series.

Amendment of Governing Documents

Under the Delaware General Corporation Law, a corporation's certificate of incorporation may be amended only if adopted and declared advisable by the board of directors and approved by a majority of the outstanding shares entitled to vote, and the bylaws may be amended with the approval of a majority of the outstanding shares entitled to vote and may, if so provided in the certificate of incorporation, also be amended by the board of directors. Under the Companies Law, our memorandum and articles of association may only be amended by special resolution or the unanimous written resolution of all shareholders.

Rights of Non-resident or Foreign Shareholders

There are no limitations imposed by our fifth amended and restated 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 fifth amended and restated memorandum and articles of association governing the ownership threshold above which shareholder ownership must be disclosed.

C. Material Contracts

We have not entered into any material contracts other than in the ordinary course of business and other than those described in "Item 4. Information on the Company," "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions," or elsewhere in this annual report.

D. Exchange Controls

Foreign Currency Exchange

See "Item 4. Information on the Company—B. Business Overview—Regulation—Regulations on Foreign Exchange."

Dividend Distribution

See "Item 4. Information on the Company—B. Business Overview—Regulation—Regulations on Dividend Distribution."

E. Taxation

The following is a summary of material Cayman Islands, PRC and U.S. federal income tax consequences of an investment in our ADSs or Class B ordinary shares. It is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change. This summary does not deal with all possible tax consequences relating to an investment in our ADSs or Class B ordinary shares, such as the tax consequences under state, local and other tax laws.

Cayman Islands Taxation

The Cayman Islands currently levies no taxes on individuals or corporations based upon profits, income, gains or appreciation 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 brought within, the jurisdiction of the Cayman Islands. The Cayman Islands is not party to any double tax treaties which are applicable to any payments made by or to our company. There are no exchange control regulations or currency restrictions in the Cayman Islands.

People's Republic of China Taxation

The PRC Enterprise Income Tax Law, or the EIT Law, which became effective on January 1, 2008 and was most recently amended on December 29, 2018, 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 is treated as a PRC resident enterprise for PRC tax purposes and consequently is subject to PRC enterprise income tax at the rate of 25% on its global income. On April 22, 2009, the SAT issued 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 the PRC. Furthermore, the SAT issued Bulletin No. 45, which became effective on September 1, 2011 and was most recently amended on June 15, 2018, to provide more guidance on the implementation of Circular 82. Bulletin No. 45 clarified certain issues in the areas of resident status determination, post-determination administration and competent tax authorities procedures. According to 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 the PRC only if all of the following conditions are met: (a) the senior management and core management departments in charge of its daily operations are located 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) at least half of the enterprise’s directors or senior management with voting rights habitually reside in the PRC. Although Circular 82 and Bulletin No. 45 only apply to offshore incorporated enterprises controlled by PRC enterprises or PRC enterprise groups and not those controlled by PRC individuals or foreigners, the determination criteria set forth therein may reflect the 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 believe that neither Gridsum Cayman nor Gridsum HK is a PRC resident enterprise for PRC tax purposes, because neither of them meets all of the criteria described above. Neither is controlled by a PRC enterprise or PRC enterprise group. Their records (including the resolutions of the board of directors and the resolutions of shareholders) are maintained outside the PRC. However, an enterprise’s tax resident status is subject to determination by the PRC tax authorities and uncertainties remain with respect to the interpretation of the term “de facto management body” when applied to our offshore entities.

If the PRC tax authorities determine that we are a PRC resident enterprise, we will be subject to PRC enterprise income tax at 25% on our global income. In addition, dividends paid by us to our non-PRC shareholders may be subject to PRC withholding tax, and gains realized on the sale or other disposition of our ADSs or Class B ordinary shares may be subject to PRC tax, at a rate of 0% in the case of non-PRC corporate shareholders that are deemed PRC resident enterprises, 10% in the case of non-PRC corporate shareholders that are deemed non-resident enterprises or 20% in the case of non-PRC individual shareholders (in each case, subject to any applicable tax treaty), if such dividends or gains are deemed to be from sources within the PRC. A holder of our Class B ordinary shares or our ADSs (other than our depository bank who is a nominee shareholder) may be deemed a “non-resident enterprise” if (a) its “de facto management body” is outside the PRC, and (b) it meets one of the following conditions: (i) it has establishment or place of business within the PRC, or (ii) it does not have establishment or place of business within the PRC but has received income from PRC sources. As a result, you may be subject to PRC withholding tax on dividends distributed by us or gains realized on the disposition of our ADSs or Class B ordinary shares, unless the jurisdiction of your incorporation has a tax treaty with China that provides for a different withholding arrangement. The Cayman Islands does not have such tax treaty with China. Any such tax may reduce the returns on your investment in the ADSs. Furthermore, if we are a PRC resident enterprise and the dividends paid by us to our non-PRC shareholders are subject to PRC withholding tax, we will be obligated to withhold and pay such tax in respect of the dividends actually paid by us to our non-PRC shareholders, and failure to so withhold and pay may subject us to a penalty of up to three times of the unpaid tax imposed by the relevant PRC tax authority.

If we are deemed a “non-resident enterprise” by the PRC tax authorities, the dividends paid to us by our PRC subsidiary will be subject to a 10% withholding tax (or a 5% withholding tax in certain circumstances discussed below). The EIT Law imposes a withholding income tax of 10% on dividends distributed by a foreign-invested enterprises to its immediate holding company outside of the PRC, if such immediate holding company is considered as a non-resident enterprise without any establishment or place of business within the PRC or if the received dividends have no connection with the establishment or place of business of such immediate holding company within the PRC, unless such immediate holding company’s jurisdiction of incorporation has a tax treaty with the PRC that provides for a different withholding arrangement. Under the Arrangement Between the PRC and the Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion With Respect to Taxes on Income, the dividend withholding tax rate may be reduced to 5%, if a Hong Kong resident enterprise that receives the dividends is considered a “non-resident enterprise” and holds at least 25% of the equity interests in the PRC enterprise distributing the dividends, subject to approval of the PRC local tax authority. However, if the Hong Kong resident enterprise is not considered to be the beneficial owner of such dividends under applicable PRC tax regulations, such dividends may remain subject to withholding tax at a rate of 10%. Accordingly, dividends received by Gridsum HK from our PRC subsidiary will be subject to PRC withholding tax, the rate of which might be reduced from 10% to 5% if Gridsum HK satisfies the relevant conditions under applicable PRC tax regulations and obtains the approvals as required.

Material United States Federal Income Tax Considerations

The following is a discussion of material U.S. federal income tax considerations relating to the acquisition, ownership and disposition of our ADSs or Class B ordinary shares by U.S. Holders (as defined below) that hold our ADSs or Class B ordinary shares as “capital assets” (generally, property held for investment) as of the date hereof and under the U.S. Internal Revenue Code of 1986, as amended, or the Code. This discussion is based upon applicable provisions of the Code, Treasury regulations promulgated thereunder, pertinent judicial decisions, interpretive rulings of the Internal Revenue Service, or the IRS, and such other authorities as are relevant, all as of the date hereof, and all of which are subject to change, possibly with retroactive effect. In addition, this discussion is based, in part, upon representations made by the depositary to us and assumes that the deposit agreement, and all other related agreements, will be performed in accordance with their terms. This discussion does not address all aspects of U.S. federal income taxation that may be important to particular investors in light of their individual investment circumstances, including investors subject to special tax rules (for example, certain financial institutions, insurance companies, broker-dealers, pension plans, regulated investment companies, real estate investment trusts, cooperatives, 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, investors that hold our ADSs or Class B ordinary shares as part of a straddle, hedge, conversion, constructive sale or other integrated transaction for U.S. federal income tax purposes, investors that are traders in securities that have elected the mark-to-market method of accounting or investors that have a functional currency other than the U.S. Dollar), all of whom may be subject to tax rules that differ significantly from those discussed below.

In addition, this discussion does not address any non-U.S., state, local or any U.S. federal estate, gift or alternative minimum tax considerations. Each U.S. Holder is urged to consult its tax advisors regarding the U.S. federal, state, local and non-U.S. income and other tax considerations of an investment in ADSs or Class B ordinary shares.

General

The discussion below of U.S. federal income tax consequences to “U.S. Holders” will apply to you if you are a beneficial owner of our ADSs or Class B ordinary shares and you are, for U.S. 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 U.S. 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 U.S. 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 U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (B) that has otherwise validly elected to be treated as a U.S. person under the Code.

If you are a partner in a partnership or other entity treated as a partnership for U.S. federal income tax purposes that holds our ADSs or Class B ordinary shares, your tax treatment generally will depend on your status (including, for example, whether you are a U.S. Holder) and the activities of the partnership. Partners in a partnership holding our ADSs or Class B ordinary shares should consult their tax advisers regarding the tax consequences of an investment in our ADSs or Class B ordinary shares.

If you own (directly, indirectly or constructively) 10% or more of our stock by vote or value, due to changes in U.S. tax laws under the 2017 Act, you could be subject to unexpected and extremely unfavorable U.S. tax consequences. Such holders should consult their tax advisers regarding the tax consequences of an investment in our stock.

ADSs

If you hold ADSs, for U.S. federal income tax purposes, you generally will be treated as the owner of the underlying Class B ordinary shares that are represented by such ADSs. Accordingly, deposits or withdrawals of Class B ordinary shares for ADSs, or vice versa, will not be subject to U.S. federal income tax.

Dividends

Subject to the discussion under “—Passive Foreign Investment Company Rules” below, any cash distributions (including the amount of any PRC tax withheld if we are deemed to be a PRC resident enterprise under PRC tax law) paid on our ADSs or Class B ordinary shares out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, will generally be includible in your gross income as dividend income on the day actually or constructively received by you, in the case of Class B ordinary shares, or by the depositary, in the case of ADSs. Dividends received on our ADSs or Class B ordinary shares will not be eligible for the dividends received deduction allowed to corporations under the Code.

A non-corporate recipient of dividends will be subject to tax at the reduced tax rate applicable to “qualified dividend income,” provided that certain conditions are satisfied, including that (1) our ADSs are readily tradable on an established securities market in the United States, or, in the event that we are deemed to be a PRC resident enterprise under the PRC tax law, we are eligible for the benefit of the United States-PRC income tax treaty, or the Treaty, (2) we are neither a passive foreign investment company nor treated as such with respect to a U.S. Holder (as discussed below) for the taxable year in which the dividend was paid or the preceding taxable year and (3) certain holding period requirements are met.

Our ADSs are listed on the Nasdaq Global Select Market. United States Treasury Department guidance indicates that the ADSs, when they are listed on the Nasdaq Global Select Market, are readily tradable on an established securities market in the United States. Thus, provided we are not classified as a PFIC subject to the U.S. federal income tax rules governing PFICs summarized in the discussion below under “—Passive Foreign Investment Company Rules” and certain holding period requirements are met, we believe that dividends we pay on our ADSs will meet the conditions required for the reduced tax rate applicable to “qualified dividend income.” However, since we do not expect that our Class B ordinary shares will be listed on an established securities market, we do not believe that dividends that we pay on our Class B ordinary shares that are not represented by ADSs currently meet the conditions required for these reduced tax rates (unless we are eligible for the benefit of the Treaty as discussed below).

In the event that we are deemed to be a PRC resident enterprise under PRC tax law, you may be subject to PRC withholding taxes on dividends paid on our ADSs or Class B ordinary shares. If we are deemed to be a PRC resident enterprise, we may, however, be eligible for the benefits of the Treaty. If we are eligible for such benefits, dividends we pay on our Class B ordinary shares, regardless of whether such shares are represented by the ADSs, would be eligible for the reduced rates of taxation applicable to qualified dividend income, as discussed above. Determining eligibility for benefits under U.S. income tax treaties is complex. You should consult your tax advisor if you intend to rely on our eligibility for the benefits of the Treaty to claim a reduced rate of tax on dividends.

For U.S. foreign tax credit purposes, dividends generally will be treated as income from foreign sources and generally will constitute passive category income. Depending on your particular circumstances, you 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 our ADSs or Class B ordinary shares. If you do not elect to claim a foreign tax credit for foreign tax withheld, you are permitted instead to claim a deduction, for U.S. federal income tax purposes, for the foreign tax withheld, but only for a year in which you elect to do so for all creditable foreign income taxes. The rules governing the foreign tax credit are complex. You are urged to consult your tax advisor regarding the availability of the foreign tax credit under your particular circumstances.

To the extent that the amount of any distribution exceeds our current and accumulated earnings and profits for a taxable year, as determined under U.S. federal income tax principles, the distribution will first be treated as a tax-free return of capital, causing a reduction in the adjusted basis of our ADSs or Class B ordinary shares, and to the extent the amount of the distribution exceeds your tax basis, the excess will be taxed as capital gain recognized on a sale or exchange. Because we do not intend to determine our earnings and profits under U.S. federal income tax principles, any distribution paid will generally be treated as a “dividend” for U.S. federal income tax purposes (as discussed above). Consequently, your taxable dividend income may be greater than it would be if we determined our earnings and profits under U.S. federal income tax purposes.

Sale or Other Disposition of ADSs or Class B Ordinary Shares

Subject to the discussion under “—Passive Foreign Investment Company Rules” below, you generally will recognize capital gain or loss upon the sale or other disposition of our ADSs or Class B ordinary shares in an amount equal to the difference, if any, between the amount realized upon the disposition and your adjusted basis in such ADSs or Class B ordinary shares. Any capital gain or loss will be long-term capital gain or loss if you have held our ADSs or Class B ordinary shares for more than one year and will generally be U.S.-source gain or loss for U.S. foreign tax credit purposes. In the event that we are deemed to be a PRC resident enterprise under PRC tax law and gain from the disposition of our ADSs or Class B ordinary shares would be subject to tax in the PRC, you generally can elect to treat the gain as PRC-source gain for U.S. foreign tax credit purposes under the Treaty. The deductibility of a capital loss may be subject to limitations. You are urged to consult your tax advisor regarding the tax consequences if a foreign tax is imposed on a disposition of our ADSs or Class B ordinary shares, including any election to treat the gain on disposition as having a PRC source under the Treaty and the availability of the foreign tax credit under your particular circumstances.

Passive Foreign Investment Company Rules

A non-U.S. corporation, such as our company, will be classified as a “passive foreign investment company,” or PFIC, for U.S. 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 the value of its assets (determined on the basis of a quarterly average) during such year produce or are held for the production of passive income. Passive income generally includes dividends, interest, royalties, rents, annuities, net gains from the sale or exchange of property producing such income and net foreign currency gains. For this purpose, cash is categorized as a passive asset and the company’s unbooked intangibles associated with active business activity are taken into account as a non-passive asset. 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, at least 25% (by value) of the stock.

Although the law in this regard is unclear, we intend to treat our VIE as being owned by us for U.S. federal income tax purposes, not only because we exercise effective control over the operation of such entity but also because we are entitled to substantially all of its economic benefits and burdens, and, as a result, we consolidate its results of operation in our consolidated financial statements. If it were determined, however, that we are not the owner of our VIE for U.S. federal income tax purposes, the PFIC rules would apply differently to us, and as a result, we could be treated as a PFIC for our current taxable year and/or future taxable years.

Assuming we are the owner of our VIE for U.S. federal income tax purposes, based on our current income and assets and the value of our ADSs and Class B ordinary shares, we do not believe we were a PFIC for the 2018 taxable year or for prior years, and we presently do not expect to be classified as a PFIC for the current taxable year and we do not anticipate becoming a PFIC in future taxable years. While we do not anticipate becoming a PFIC, changes in the nature of our income or assets or the value of our ADSs and Class B ordinary shares may cause us to become a PFIC for the current or any subsequent taxable year. Under circumstances where revenues from activities that produce passive income significantly increase relative to our revenues from activities that produce non-passive income or where we determine not to deploy significant amounts of cash, our risk of becoming classified as a PFIC may substantially increase.

The discussion above under “—Dividends” and “—Sale or Other Disposition of ADSs or Class B Ordinary Shares” assumes that we will not be classified as a PFIC for U.S. federal income tax purposes.

If we were classified as a PFIC in any year with respect to which a U.S. Holder holds ADSs or Class B ordinary shares, we would continue to be treated as a PFIC with respect to the U.S. Holder in all succeeding years during which the U.S. Holder owns our ADSs or Class B ordinary shares, regardless of whether we continue to meet the tests described above.

If we were treated as a PFIC for any taxable year during which a taxable U.S. Holder held the ADS or Class B ordinary shares, gain recognized by the U.S. Holder on a sale or other disposition (including certain pledges) of our ADSs or Class B ordinary shares would be allocated ratably over the U.S. Holder’s holding period for our ADSs or Class B ordinary shares. The amounts allocated to the taxable year of the sale or other disposition and to any year before we became a PFIC would be taxed as ordinary income. The amount allocated to each other taxable year would be subject to tax at the highest rate in effect for individuals or corporations, as appropriate, for that taxable year, and an interest charge would be imposed on the amount allocated to that taxable year. Further, to the extent that any dividend or other distribution received by a U.S. Holder on its ADSs or Class B ordinary shares exceeded 125% of the average of the annual distributions received by the U.S. Holder on its ADSs or Class B ordinary shares during the preceding three years or the U.S. Holder’s holding period, whichever is shorter, that distribution (referred to as “excess distribution”) would be subject to taxation in the same manner as gain, described immediately above.

Thus, if we were treated as a PFIC, gains on disposition of ADSs or Class B ordinary shares, and excess distributions thereon, would be taxed at ordinary income rates and subject to an interest charge, which generally results in a significantly greater amount of U.S. tax than would otherwise be imposed if the PFIC rules did not apply.

Certain elections may be available that would result in alternative treatments of our ADSs or Class B ordinary shares. However, we do not expect that we will prepare or provide to U.S. Holders a “PFIC annual information statement,” which would enable a U.S. Holder to make one type of election, a “qualified electing fund” or “QEF” election.

If our ADSs were considered “marketable stock” (as defined below), U.S. Holders generally would be eligible to make a different type of election, a “mark-to-market” election, to elect out of the tax treatment discussed in the preceding paragraphs. If you make a valid mark-to-market election for the ADSs, you generally will include in income for each year we are a PFIC, as ordinary income, an amount equal to the excess of the fair market value of our ADSs at the end of the year over your adjusted tax basis, and you will be allowed an ordinary deduction for any excess of your adjusted tax basis over the fair market value of the ADSs at the end of the year. However, deductions will be allowable only to the extent of any net mark-to-market income you reported on our ADSs in prior years. Gain on the sale or other disposition of our ADSs will also be treated as ordinary income. Loss on sale will be treated as ordinary loss to the extent of any net mark-to-market gains you reported on the ADSs. Your basis in our ADSs will be adjusted to reflect any annual mark-to-market income or loss amounts. If you make a mark-to-market election, any distributions we make would generally be subject to the rules discussed above under “—Dividends,” except the lower rate applicable to qualified dividend income would not apply.

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 Treasury regulations. Our ADSs are listed on the Nasdaq Global Select Market, which is a qualified exchange for these purposes, and, consequently, assuming that our ADSs are regularly traded, if you are a holder of ADSs, it is expected that the mark-to-market election would be available to you if we were to become a PFIC. It should be noted that only our ADSs and not the Class B ordinary shares are listed on the Nasdaq Global Select Market. Consequently, if you are a U.S. Holder of Class B ordinary shares that are not represented by ADSs, you generally will not be eligible to make a mark-to-market election if we are or were to become a PFIC.

Each U.S. Holder of a PFIC is generally required to file an annual report containing such information as the U.S. Department of the Treasury may require.

U.S. Holders are strongly urged to consult their own tax advisors regarding the details of the PFIC rules and any elections that may be available.

Medicare Tax

U.S. Holders that are individuals, estates or trusts and whose income exceeds certain thresholds will generally be subject to a 3.8% Medicare tax (in addition to the regular income tax) on certain investment income, including dividends and gains from the sale, exchange or other taxable disposition of an ADS or Class B ordinary share. You are urged to consult your tax advisors regarding the applicability of the Medicare tax to your income and gains in respect of an investment in our ADSs or Class B ordinary shares.

Information Reporting and Backup Withholding

You may be required to submit to the IRS certain information with respect to your beneficial ownership of our ADSs or Class B ordinary shares, if such ADSs or Class B ordinary shares are not held on your behalf by a financial institution. This law also imposes penalties if you are required to submit such information to the IRS and fail to do so.

Dividend payments with respect to ADSs or Class B ordinary shares and proceeds from the sale, exchange or redemption of ADSs or Class B ordinary shares may be subject to information reporting to the IRS and possible U.S. backup withholding. Backup withholding will not apply, however, to a U.S. Holder who furnishes a correct taxpayer identification number and makes any other required certification or who is otherwise exempt from backup withholding and in the case of dividend payments, reports the full amount of dividend income. U.S. Holders who are required to establish their exempt status must provide such certification on IRS Form W-9.

Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against your U.S. federal income tax liability, and you may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the IRS and furnishing any required information. You are urged to consult your tax advisors regarding the application of the U.S. information reporting and backup withholding rules.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

We file annual reports with and furnish other information to the SEC as may be applicable from time to time. You may read and copy any documents filed or furnished by us at the SEC's public reference room in Washington, D.C. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

In accordance with Nasdaq Stock Market Rule 5250(d), we will post this annual report on Form 20-F on our website at www.gridsun.com. In addition, we will provide physical copies of our annual report free of charge to shareholders and ADS holders upon request.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Exchange Risk

Substantially all of our revenues and costs are denominated in RMB, and substantially all of our financial assets are also denominated in RMB. We do not believe that we currently have any significant direct foreign exchange risk and we have not entered into any hedging transactions in an effort to reduce our exposure to foreign currency exchange risk. Although in general our exposure to foreign exchange risks should be limited, the value of your investment in our ADSs will be affected by the exchange rate between the U.S. Dollar and the RMB because the value of our business is effectively denominated in RMB, while our ADSs will be traded in U.S. Dollars.

The value of the RMB against the U.S. Dollar and other currencies is affected by changes in China's political and economic conditions and China's foreign exchange policies, among other things. On July 21, 2005, the PRC government changed its decades-old policy of pegging the value of the RMB to the U.S. Dollar, and the RMB appreciated by more than 20% against the U.S. Dollar over the following three years. Between July 2008 and June 2010, this appreciation halted and the exchange rate between the RMB and the U.S. Dollar remained within a narrow band. Since June 2010, the RMB has fluctuated against the U.S. Dollar, at times significantly and unpredictably, and in recent years the RMB has depreciated significantly against the U.S. Dollar. Since October 1, 2016, the RMB has joined the International Monetary Fund's basket of currencies that make up the Special Drawing Right (SDR), along with the U.S. Dollar, Euro, Japanese yen and British pound. In 2016 and 2017, the value of the RMB depreciated by approximately 7.2% and appreciated by approximately 6.7% against the U.S. Dollar, respectively. From the end of 2017 through the end of 2018, the value of the RMB depreciated by approximately 5.4% against the U.S. Dollar. With the development of the foreign exchange market and progress towards interest rate liberalization and RMB internationalization, the PRC government may in the future announce further changes to the exchange rate system and there is no guarantee that the RMB will not appreciate or depreciate significantly in value against the U.S. Dollar in the future. It is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. Dollar in the future.

To the extent that we need to convert U.S. Dollars into RMB for our operations, appreciation of the RMB against the U.S. Dollar would have an adverse effect on the RMB amount we receive from the conversion. Conversely, if we decide to convert RMB into U.S. Dollars for the purpose of making payments for dividends on our ordinary shares or ADSs or for other business purposes, appreciation of the U.S. Dollar against the RMB would have a negative effect on the U.S. Dollar amounts available to us.

As of December 31, 2018, we had RMB-denominated cash and cash equivalents of RMB53.8 million, and U.S. Dollar-denominated cash and cash equivalents of US\$5.7 million. Assuming we had converted RMB53.8 million into U.S. Dollars at the exchange rate of RMB6.8755 for US\$1.00 as of December 31, 2018, our U.S. Dollar cash and cash equivalents would have been US\$13.5 million. If the RMB had depreciated by 10% against the U.S. Dollar, our U.S. Dollar cash and cash equivalents would have been US\$12.7 million instead. Assuming we had converted US\$5.7 million into RMB at the exchange rate of RMB6.8755 for US\$1.00 as of December 31, 2018, our RMB cash and cash equivalents would have been RMB92.7 million. If the RMB had appreciated by 10% against the U.S. Dollar, our RMB cash and cash equivalents would have been RMB89.1 million instead.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expenses incurred by our short-term borrowings and the interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. We have not used derivative financial instruments in our investment portfolio. 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, due to changes in market interest rates, our future interest expense may increase and our future interest income may fall short of expectations.

Inflation Risk

To date, inflation in China has not materially impacted our results of operations. According to the PRC National Bureau of Statistics, the year-over-year percent changes in the consumer price index for December 2016, 2017 and 2018 were increases of 2.1%, 1.8% and 1.9%, respectively. Although we have not been materially affected by inflation in the past, we can provide no assurance that we will not be affected in the future by higher rates of inflation in China.

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 holder will be required to pay the following fees under the terms of the deposit agreement:

<u>Service</u>	<u>Fees</u>
• Issuance of ADSs (i.e., an issuance of ADS upon a deposit of shares or upon a change in the ADS-to-share ratio), excluding ADS issuances as a result of distributions of shares	Up to US\$5.00 per 100 ADSs issued
• Cancellation of ADSs (i.e., a cancellation of ADSs for delivery of deposited property or upon a change in the ADS-to-share ratio)	Up to US\$5.00 per 100 ADSs cancelled
• Distribution of cash dividends or other cash distributions (i.e., upon a sale of rights and other entitlements)	Up to US\$5.00 per 100 ADSs held
• Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions, or (ii) exercise of rights to purchase additional ADSs	Up to US\$5.00 per 100 ADSs held
• Distribution of securities other than ADSs or rights to purchase additional ADSs (i.e., upon a spin-off)	Up to US\$5.00 per 100 ADSs held
• ADS Services	Up to US\$5.00 per 100 ADSs held on the applicable record date(s) established by the depository bank

As an ADS holder you will also be responsible to pay certain charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;
- the registration fees as may from time to time be in effect for the registration of shares or other deposited securities on the share register and applicable to transfers of shares or other deposited securities to or from the name of the custodian, the depositary bank or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the depositary bank in the conversion of foreign currency;
- the fees and expenses incurred by the depositary bank in connection with compliance with exchange control regulations and other regulatory requirements applicable to shares, deposited securities, ADSs and ADRs; and
- 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 payable upon (i) the issuance of ADSs, and (ii) the cancellation of ADSs are charged to the person to whom the ADSs are issued (in the case of ADS issuances) and to the person whose ADSs are cancelled (in the case of ADS cancellations). In the case of ADSs issued by the depositary bank into DTC, the ADS issuance and cancellation fees and charges may be deducted from distributions made through DTC, and may be charged to the DTC participant(s) receiving the ADSs being issued 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 of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participants as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are charged to the holders as of the applicable ADS record date. 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, holders as of the ADS record date will be invoiced for the amount of the ADS fees and charges and such ADS fees and charges may be deducted from distributions made to holders of ADSs. 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 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. The fees and charges holders of ADSs may be required to pay may vary over time and may be changed by us and the depositary bank. Holders of ADSs will receive prior notice of such changes.

The obligations of holders of ADSs to pay ADS fees and charges will survive the termination of the deposit agreement. Upon the resignation or removal of the depositary bank, the depositary bank will retain the right to collect ADS fees and charges incurred prior to such resignation or removal.

Fees and Payments from the Depositary to Us

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. We did not receive any reimbursement from the depositary for the expenses related to the administration and maintenance of the facility for the year ended December 31, 2018.

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—B. Memorandum and Articles of Association—Ordinary Shares” for a description of the rights of securities holders, which remain unchanged.

Use of Proceeds

The following “Use of Proceeds” information relates to the registration statement on Form F-1 (file number: 333-213348), which was declared effective by the SEC on September 22, 2016, in relation to our initial public offering. The aggregate price of shares issued and sold in our initial public offering was approximately US\$100.2 million, of which we received net proceeds of approximately US\$87.1 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by our company.

For the period from September 22, 2016, the date that the F-1 registration statement was declared effective by the SEC, to December 31, 2018, we have used all of the net proceeds from our initial public offering for general corporate purposes which include working capital, improvement of corporate facilities, sales and marketing activities, business acquisition and other general and administrative matters. None of the net proceeds from our initial public offering were directly or indirectly paid to the directors, officers, general partners of our company or their associates, persons owning 10% or more of our Class A or Class B ordinary shares, or our affiliates.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our chief executive officer and our co-chief financial officers, we carried out an evaluation of the effectiveness of our disclosure controls and procedures, which is defined in Rule 13a-15(e) of the Exchange Act, as of December 31, 2018.

Based upon that evaluation, our management has concluded that, due to the outstanding material weaknesses and other control deficiencies described below, as of December 31, 2018, our disclosure controls and procedures were not 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 was accumulated and communicated to our management, including our chief executive officer and co-chief financial officers, as appropriate, 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 such term is defined in Exchange Act Rule 13a-15(f), for our company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with generally accepted accounting principles, 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 our assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with U.S. GAAP and that a company’s receipts and expenditures are being made only in accordance with authorizations of our management and directors, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on our consolidated financial statements.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance with respect to consolidated financial statements preparation and presentation and 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.

As required by Section 404 of the Sarbanes-Oxley Act of 2002 and related rules as promulgated by the Securities and Exchange Commission, our management including our chief executive officer and co-chief financial officers assessed the effectiveness of internal control over financial reporting as of December 31, 2018 using the criteria set forth in the report “Internal Control—Integrated Framework” published by the Committee of Sponsoring Organizations of the Treadway Commission (known as COSO).

Based on this evaluation, our management identified two material weaknesses and certain other control deficiencies in our internal controls, as defined in the standards established by U.S. Public Company Accounting Oversight Board, in our internal control over financial reporting as of December 31, 2018. A material weakness is a deficiency, or combination of deficiencies, in internal controls, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The two material weaknesses relate to: (1) our lack of sufficient financial reporting and accounting personnel with appropriate knowledge of U.S. GAAP and the SEC reporting requirements to properly address complex accounting issues and prepare and review our financial statements and related disclosures in accordance with U.S. GAAP and SEC financial reporting requirements; and (2) the lack of written policies and procedures sufficient to timely record revenues and expenses in our financial statements.

Based on this assessment, our management has concluded that our internal control over financial reporting was not effective as of December 31, 2018. These material weaknesses resulted in the restatement of our financial statements as of and for the years ended December 31, 2015 and 2016.

Changes in Internal Control over Financial Reporting

Since January 1, 2018, we have taken initiatives to improve our internal control over financial reporting to address the material weaknesses and certain other control deficiencies that have been identified, including:

- In 2018 we engaged the founder and chairman of one of China’s largest audit and consulting firms as our advisor;
- In 2018 we distributed internal policies and handbooks on topics such as contract management, vendor management, reimbursement management and risk control management to our employees, and conducted training seminars to ensure effective implementation;
- In 2018 we engaged an independent external consulting firm with extensive U.S. GAAP reporting experience to assist our U.S. GAAP reporting team in preparation of this annual report;
- In 2018 we conducted a comprehensive “as is” and gap analysis of our IT systems and approved procurement of a customized ERP system. A committee consisting of all our senior executives was organized to facilitate the assessment and implement any necessary changes; and
- In 2018 we engaged an independent third-party consultant to provide accounting and financial training to our senior employees.

Except for the matters described above to improve our internal control over financial reporting, there were no changes in our internal control over financial reporting that occurred during the period covered by this annual report on Form 20-F that have materially affected, or are 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. Lee, the chairman of our Audit Committee and an independent director, qualifies as an “audit committee financial expert” as defined in Item 16A of Form 20-F.

ITEM 16B. CODE OF ETHICS

We have adopted a Code of Business Conduct and Ethics that applies to all of our directors, officers and employees. We have never granted a waiver for non-compliance with the policies and procedures set forth in the code of ethics for any director, officer or employee of our company or any of our subsidiaries.

A copy of our Code of Business Conduct and Ethics is available on our website at www.gridsum.com.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate fees in connection with professional services rendered by Shandong Haoxin Certified Public Accountants Co. Ltd., Marcum Bernstein & Pinchuk LLP and PricewaterhouseCoopers Zhong Tian LLP, each an independent registered public accounting firm, for the periods indicated.

	For the Year Ended December 31,	
	2017	2018
	(in thousands)	(in thousands)
Audit Fees	US\$1,068	US\$1,357
Audit-Related Fees	US\$283	US\$600
Tax Fees	—	—
All Other Fees	—	US\$28
Total	US\$1,351	US\$1,985

Audit Fees means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal auditors for the audit of our annual financial statements and assistance with and review of documents filed with the SEC.

Audit-Related Fees means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal auditors for the assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and not reported under “Audit Fees.”

Tax Fees means the aggregate fees billed in each of the fiscal years listed for the professional services rendered by our principal auditors for tax compliance, tax advice and tax planning.

All Other Fees. There were no other fees billed for the fiscal years ended December 31, 2017 and 2018, respectively.

The policy of our Audit Committee is to pre-approve all audit and non-audit services provided by our independent registered public accounting firms, including audit services, audit-related services, tax services and other services as described above, other than those for de minimis services which are approved by the Audit Committee prior to the completion of the audit.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT’S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

We are incorporated in the Cayman Islands and our corporate governance practices are governed by applicable Cayman Islands law. In addition, because our ADSs are listed on The Nasdaq Stock Market, we are subject to Nasdaq's corporate governance requirements.

Nasdaq Marketplace Rule 5615(a)(3) permits a foreign private issuer like us to follow home country practices in lieu of certain requirements of Rule 5600, provided that such foreign private issuer discloses in its annual report filed with the SEC each requirement of Rule 5600 that it does not follow and describes the home country practice followed in lieu of such requirement.

We currently follow our home country practices that does not require a majority of our directors to be independent and that does not require us to solicit proxy and hold meetings of our shareholders every year. In addition, our Chief Executive Officer, who is not an independent director, serves as a member of our nominating and corporate governance committee, and our independent directors do not hold regularly scheduled meetings at which only independent directors are present. As a result, we may have less independent oversight over the management than other companies that are listed on The Nasdaq Stock Market. Other than the practices described above, there are no significant differences between our corporate governance practices and those followed by U.S. domestic companies under the rules of The Nasdaq Stock Market.

ITEM 16H. MINE SAFETY DISCLOSURE

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 Gridsum Holding Inc., its subsidiaries and its consolidated affiliated entities are included at the end of this annual report.

ITEM 19. EXHIBITS

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Exhibit Title</u>	<u>Incorporated by Reference</u>			
		<u>Form</u>	<u>File No.</u>	<u>Exhibit No.</u>	<u>Filing Date</u>
1.1	<u>Fifth Amended and Restated Memorandum and Articles of Association of the registrant</u>	F-1	333-213348	3.3	August 26, 2016
2.1	<u>Specimen Certificate for Class B ordinary shares</u>	F-1	333-213348	4.2	August 26, 2016
2.2	<u>Deposit Agreement among the registrant, the depository and all holders and beneficial owners of the American Depositary Shares issued thereunder</u>	S-8	333-216798	4.3	March 17, 2017
2.3	<u>Specimen American Depositary Receipt (included in Exhibit 2.2)</u>				
2.4	<u>Second Amended and Restated Shareholders' Agreement dated June 30, 2015 among the registrant and certain other parties</u>	F-1	333-213348	4.4	August 26, 2016

2.5	<u>Registration Rights Agreement dated May 5, 2018 between the registrant and FutureX Innovation SPC</u>	6-K	001-37871	99.3	May 7, 2018
4.1	<u>Gridsum Holding Inc. Stock Option Plan</u>	6-K	001-37871	99.1	March 17, 2017
4.2	<u>Gridsum Holding Inc. Equity Incentive Plan</u>	6-K	001-37871	99.2	March 17, 2017
4.3	<u>Form of Indemnification Agreement between the registrant and members of its board of directors and its executive officers</u>	F-1	333-213348	10.3	August 26, 2016
4.4	<u>Form of Employment Agreement between the registrant and its executive officers</u>	F-1	333-213348	10.4	August 26, 2016
4.5	<u>Exclusive Business Cooperation Agreement dated December 22, 2014 between Dissector (Beijing) Technology Co., Ltd. and Gridsum Holding (Beijing) Co., Ltd.</u>	F-1	333-213348	10.5	August 26, 2016
4.6	<u>Exclusive Option Agreements dated December 22, 2014 among Dissector (Beijing) Technology Co., Ltd., Gridsum Holding (Beijing) Co., Ltd. and the shareholders of Gridsum Holding (Beijing) Co., Ltd.</u>	F-1	333-213348	10.6	August 26, 2016
4.7	<u>Shareholders' Voting Rights Proxy Agreements dated December 22, 2014 among Dissector (Beijing) Technology Co., Ltd., Gridsum Holding (Beijing) Co., Ltd. and the shareholders of Gridsum Holding (Beijing) Co., Ltd.</u>	F-1	333-213348	10.7	August 26, 2016
4.8	<u>Equity Pledge Agreements dated December 22, 2014 among Dissector (Beijing) Technology Co., Ltd., Gridsum Holding (Beijing) Co., Ltd. and the shareholders of Gridsum Holding (Beijing) Co., Ltd.</u>	F-1	333-213348	10.8	August 26, 2016
4.9	<u>English Translation of the Cooperation Agreement, dated March 16, 2012, by and between Beijing Gridsum Technology Co., Ltd. and the State Information Center of China</u>	F-1	333-213348	10.9	August 26, 2016
4.10	<u>US\$40 Million Convertible Note issued by the registrant, dated May 5, 2018</u>	6-K	001-37871	99.2	May 7, 2018
4.11	<u>Convertible Note Purchase Agreement dated April 30, 2018 by and between the registrant and FutureX Innovation SPC (on behalf of and for the account of New Technology Fund II SP as one of its segregated portfolios)</u>	20-F	001-37871	4.13	January 7, 2019
4.12	<u>Registration Rights Agreement dated March 4, 2019 between the registrant and certain other parties</u>	6-K	001-37871	99.1	March 4, 2019
8.1*	<u>List of significant subsidiaries and consolidated affiliated entities</u>				
12.1*	<u>CEO Certification required by Rule 13a-14(a)</u>				
12.2*	<u>Co-CFO Certification required by Rule 13a-14(a)</u>				
12.3*	<u>Co-CFO Certification required by Rule 13a-14(a)</u>				

- 13.1** [CEO Certification required by Rule 13a-14\(b\)](#)
- 13.2** [Co-CFO Certification required by Rule 13a-14\(b\)](#)
- 13.3** [Co-CFO Certification required by Rule 13a-14\(b\)](#)
- 15.1* [Consent of Independent Registered Public Accounting Firm](#)
- 15.2* [Consent of Merits & Tree Law Offices](#)
- 101.INS* XBRL Instance Document.
- 101.SCH* XBRL Taxonomy Extension Schema Document.
- 101.CAL* XBRL Taxonomy Extension Calculation Linkbase Document.
- 101.DEF* XBRL Taxonomy Extension Definition Linkbase Document.
- 101.LAB* XBRL Taxonomy Extension Label Linkbase Document.
- 101.PRE* XBRL Taxonomy Extension Presentation Linkbase Document.

* Filed herewith

** Furnished herewith

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.

Gridsum Holding Inc.

By: /s/ Guosheng Qi

Name: Guosheng Qi

Title: Chief Executive Officer and Chairman

Date: April 24, 2019

Gridsum Holding Inc.

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Report of Independent Registered Public Accounting Firm

To the shareholders and the board of directors of Gridsum Holding Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Gridsum Holding Inc. and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related statements of consolidated statements of comprehensive loss, shareholders’ equity and cash flows, for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Shandong Haoxin Certified Public Accountants Co., Ltd.

Shandong Haoxin Certified Public Accountants Co., Ltd.

We have served as the Company’s auditor since 2019.

Weifang, the People’s Republic of China

April 24, 2019

Gridsum Holding Inc.

CONSOLIDATED BALANCE SHEETS

As of December 31, 2017 and 2018
(In thousands, except for share and per share data)

	As of December 31,		
	2017 RMB	2018 RMB	2018 US\$
ASSETS			
Current assets:			
Cash and cash equivalents	166,690	92,684	13,480
Time deposit	—	—	—
Restricted cash	245,320	1,334	194
Notes Receivable	6,000	—	—
Accounts receivable, net	599,280	397,969	57,882
Prepayments and other current assets	306,092	294,904	42,892
Total current assets	1,323,382	786,891	114,448
Non-current assets:			
Investment in associates	—	5,000	727
Property and equipment, net	50,873	62,328	9,065
Intangible assets, net	9,426	13,840	2,013
Goodwill	537	537	78
Deferred tax assets	18,392	46,359	6,742
Other non-current assets	487	435	63
Total non-current assets	79,715	128,499	18,688
Total assets	1,403,097	915,390	133,136
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Short-term bank loans	266,019	5,000	727
Accounts payable	208,152	97,293	14,150
Salary and welfare payables	60,696	65,451	9,519
Taxes payable	103,331	110,529	16,076
Deferred revenues	13,391	36,126	5,254
Advances from customers	116,847	154,731	22,504
Accrued expenses and other current liabilities	90,721	147,940	21,517
Derivative liabilities	—	596	87
Convertible note	—	242,702	35,300
Total current liabilities	859,157	860,368	125,134
Non-current liabilities:			
Deferred tax liabilities	249	212	30
Total non-current liabilities	249	212	30
Total liabilities	859,406	860,580	125,164

Gridsum Holding Inc.

CONSOLIDATED BALANCE SHEETS

As of December 31, 2017 and 2018
(In thousands, except for share and per share data)

	As of December 31,		
	2017 RMB	2018 RMB	2018 US\$
Commitments and contingencies			
Shareholders' equity:			
Ordinary shares—Class A (US\$0.001 par value; 20,000,000 shares authorized, 4,543,461 shares issued and outstanding as of December 31, 2017 and 2018)	31	31	5
Ordinary shares—Class B (US\$0.001 par value; 180,000,000 shares authorized; 26,280,367 and 26,289,929 shares issued and outstanding as of December 31, 2017 and 2018, respectively)	176	177	26
Additional paid-in capital	1,107,201	1,146,253	166,715
Statutory reserve	6,730	12,903	1,877
Accumulated other comprehensive loss	(30,539)	(35,496)	(5,163)
Accumulated deficit	(549,911)	(1,077,409)	(156,703)
Total Gridsum's shareholders' equity	533,688	46,459	6,757
Non-controlling interests	10,003	8,351	1,215
Total shareholders' equity	543,691	54,810	7,972
Total liabilities and shareholders' equity	1,403,097	915,390	133,136

The accompanying notes are an integral part of these consolidated financial statements.

Gridsum Holding Inc.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

For the Years Ended December 31, 2016, 2017 and 2018

(In thousands, except for share and per share data)

	For the Year Ended December 31,			
	2016 RMB	2017 RMB	2018 RMB	2018 US\$
Revenues:				
Enterprise	311,106	377,013	387,574	56,370
e-Government and other	60,772	102,216	53,117	7,726
Less: Business tax and surcharges	(8,055)	(9,696)	(9,444)	(1,374)
Net revenues	363,823	469,533	431,247	62,722
Cost of revenues ⁽¹⁾	(55,707)	(94,640)	(100,867)	(14,670)
Gross profit	308,116	374,893	330,380	48,052
Operating expenses⁽¹⁾:				
Sales and marketing expenses	(139,781)	(192,413)	(166,176)	(24,169)
Research and development expenses	(160,387)	(257,921)	(533,586)	(77,607)
General and administrative expenses	(88,108)	(143,743)	(182,289)	(26,513)
Total operating expenses	(388,276)	(594,077)	(882,051)	(128,289)
Losses from operations	(80,160)	(219,184)	(551,671)	(80,237)
Other income/(expense):				
Foreign currency exchange loss	(1,600)	(8,552)	(9,719)	(1,414)
Interest income/(expense), net	(614)	(5,430)	(9,878)	(1,437)
Other income/(expense), net	(1,452)	(1,683)	1,005	146
Amortization of debt discount	—	—	(25,337)	(3,685)
Gain on change in fair value of derivative liabilities	—	—	57,890	8,420
Loss before income tax	(83,826)	(234,849)	(537,710)	(78,207)
Income tax (expense)/benefit	(14,801)	(4,275)	15,165	2,206
Net loss	(98,627)	(239,124)	(522,545)	(76,001)
Less: Net loss attributable to non-controlling interests	(53)	(128)	(1,220)	(177)
Net loss attributable to Gridsum Holding Inc.	(98,574)	(238,996)	(521,325)	(75,824)
Accretion to preferred shares redemption value	(16,725)	—	—	—
Cumulative dividend to preferred shareholders	(12,990)	—	—	—
Net loss attributable to Gridsum's ordinary shareholders	(128,289)	(238,996)	(521,325)	(75,824)
Net loss	(98,627)	(239,124)	(522,545)	(76,001)
Foreign currency translation adjustment, net of tax	8,923	(20,452)	(4,957)	(721)
Comprehensive loss	(89,704)	(259,576)	(527,502)	(76,722)
Less: Comprehensive loss attributable to non-controlling interests	(53)	(128)	(1,220)	(177)
Comprehensive loss attributable to Gridsum Holding Inc.	(89,651)	(259,448)	(526,282)	(76,545)
Net loss per share attributable to Gridsum's ordinary shareholders, basic and diluted	(8.52)	(7.90)	(16.91)	(2.46)
Weighted average shares outstanding used in computing net loss per share attributable to Gridsum's ordinary shareholders	15,054,865	30,243,250	30,827,600	30,827,600

Note:

(1) Share-based compensation expenses were allocated in cost of revenues and operating expenses as follows:

	For the Year Ended December 31,			
	2016 RMB	2017 RMB	2018 RMB	2018 US\$
Cost of revenues	319	501	801	117
Sales and marketing expenses	2,252	4,739	6,810	990
Research and development expenses	3,955	8,641	16,310	2,372
General and administrative expenses	4,104	9,046	15,105	2,197

The accompanying notes are an integral part of these consolidated financial statements.

Gridsum Holding Inc.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

For the Years Ended December 31, 2016, 2017 and 2018
(In thousands, except for share and per share data)

	Ordinary Shares Shares	Amount RMB	Additional Paid-in Capital RMB	Statutory reserve RMB	Accumulated Other Comprehensive Income /(Loss) RMB	Accumulated Deficit RMB	Non-controlling Interests RMB	Total Shareholders' (Deficit)/Equity RMB
Balances as of January 1, 2016	10,000,000	68	—	—	(19,010)	(196,866)	384	(215,424)
Preferred shares accretion	—	—	(7,980)	—	—	(8,745)	—	(16,725)
Share-based compensation expenses	—	—	10,630	—	—	—	—	10,630
Appropriation of statutory reserves	—	—	—	6,662	—	(6,662)	—	—
Net loss	—	—	—	—	—	(98,574)	(53)	(98,627)
Issuance of ordinary shares upon Initial public offering (“IPO”)	7,705,000	51	614,981	—	—	—	—	615,032
Initial public offering costs	—	—	(33,887)	—	—	—	—	(33,887)
Conversion of preferred shares to Class B ordinary shares	12,030,166	80	507,247	—	—	—	—	507,327
Foreign currency translation adjustments, net of tax	—	—	—	—	8,923	—	—	8,923
Balances as of December 31, 2016	29,735,166	199	1,090,991	6,662	(10,087)	(310,847)	331	777,249
Share-based compensation expenses	—	—	22,927	—	—	—	—	22,927
Appropriation of statutory reserves	—	—	—	68	—	(68)	—	—
Net loss	—	—	—	—	—	(238,996)	(128)	(239,124)
Issuance of ordinary shares upon exercise of share options and restricted stock units	1,088,662	8	3,083	—	—	—	—	3,091
Consolidation of Hainatianchuang	—	—	(9,800)	—	—	—	9,800	—
Foreign currency translation adjustments, net of tax	—	—	—	—	(20,452)	—	—	(20,452)
Balances as of December 31, 2017	30,823,828	207	1,107,201	6,730	(30,539)	(549,911)	10,003	543,691
Share-based compensation expenses	—	—	39,026	—	—	—	—	39,026
Appropriation of statutory reserves	—	—	—	6,173	—	(6,173)	—	—
Net loss	—	—	—	—	—	(521,325)	(1,220)	(522,545)
Issuance of ordinary shares upon exercise of share options and restricted stock units	9,562	1	26	—	—	—	—	27
Purchase of equity shares of Guoxinwangyan	—	—	—	—	—	—	(432)	(432)
Foreign currency translation adjustments, net of tax	—	—	—	—	(4,957)	—	—	(4,957)
Balances as of December 31, 2018	30,833,390	208	1,146,253	12,903	(35,496)	(1,077,409)	8,351	54,810

The accompanying notes are an integral part of these consolidated financial statements.

Gridsum Holding Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2016, 2017 and 2018
(In thousands, except for share and per share data)

	For the Year Ended December 31,			
	2016 RMB	2017 RMB	2018 RMB	2018 US\$
Cash flows from operating activities:				
Net Loss	(98,627)	(239,124)	(522,545)	(76,001)
Adjustments to reconcile net loss to net cash used in operating activities:				
Provision for allowance for doubtful accounts	19,695	24,490	16,532	2,404
Share-based compensation expenses	10,630	22,927	39,026	5,676
Depreciation and amortization expenses	23,893	31,474	34,701	5,047
Deferred tax expenses	(7,118)	(11,296)	(28,004)	(4,073)
Foreign currency exchange (gain)/loss, net	1,600	20,452	4,957	721
Loss on disposal of equipment and leasehold improvement	786	138	4,284	623
Changes in operating assets and liabilities:				
Accounts receivable	(102,039)	(267,554)	184,779	26,875
Notes receivable	—	(6,000)	6,000	873
Prepayments and other current assets	(88,546)	(102,361)	12,946	1,883
Accounts payable	(49,996)	158,588	(110,862)	(16,124)
Amounts due to related parties	—	—	—	—
Salary and welfare payable	9,281	18,570	4,756	692
Taxes payable	40,739	36,473	7,198	1,047
Deferred revenues	2,689	(7,666)	22,735	3,307
Advances from customers	(3,401)	7,465	37,884	5,510
Accrued expenses and other current liabilities	5,237	6,720	52,483	7,633
Net cash used in operating activities	(235,177)	(306,704)	(233,130)	(33,907)
Cash flows from investing activities:				
Purchase of property, equipment and software	(45,980)	(22,951)	(52,275)	(7,603)
Proceeds from disposal of property, equipment and software	12	31	44	6
Transfer to time deposit	(66,418)	—	—	—
Maturity of time deposit	—	67,574	—	—
Acquisition of subsidiaries, net of cash acquired	—	(1,857)	—	—
Long term investment	—	—	(5,000)	(727)
Net cash provided by/(used in) investing activities	(112,386)	42,797	(57,231)	(8,324)
Cash flows from financing activities:				
Proceeds of bank loans	65,000	266,019	5,000	727
Repayment of bank loan	—	(65,000)	(266,019)	(38,691)
Proceeds from issuance of ordinary shares	615,031	3,091	27	4
Payment for IPO costs	(29,892)	(3,362)	—	—
Capital injection from non-controlling interests	400	(9,800)	—	—
Convertible note	—	—	234,039	34,040
Net cash provided by/(used in) financing activities	650,539	190,948	(26,953)	(3,920)
Effect of exchange rate changes on Cash, cash equivalents and restricted cash	22,955	(39,485)	(678)	(99)
Net increase/(decrease) in Cash, cash equivalents and restricted cash	325,931	(112,444)	(317,992)	(46,250)
Cash, cash equivalents and restricted cash at the beginning of the year	198,523	524,454	412,010	59,924
Cash, cash equivalents and restricted cash at the end of the year	524,454	412,010	94,018	13,674
Supplemental disclosures of cash flow information:				
Cash paid for income taxes	182	1,820	114	17
Cash paid for interest	707	5,614	649	94
Supplemental schedule of non-cash investing activities:				
Property and equipment purchases financed by accrued expenses and other current liabilities	2,144	6,033	4,371	636
Property and equipment purchases transferred from other non-current assets	611	3,460	35,524	5,167
Supplemental schedule of non-cash financing activities:				
Accretions to preferred shares redemption value	16,725	—	—	—
The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the statement of financial position that sum to the total of the same amounts shown in the statement of cash flows:				
Cash and cash equivalents	520,452	166,690	92,684	13,480
Restricted cash	4,002	245,320	1,334	194
Total cash, cash equivalents, and restricted cash shown in the consolidated statements of cash flows	<u>524,454</u>	<u>412,010</u>	<u>94,018</u>	<u>13,674</u>

The accompanying notes are an integral part of these consolidated financial statements

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(In thousands, except for share and per share data)

1. Organization and Principal Activities

(a) Principal activities

Gridsum Holding Inc. (“Company”), through its consolidated subsidiaries and variable interest entities (“VIEs”) (collectively referred to as the “Group”), provides sophisticated data analysis software for multinational and domestic enterprises and government agencies in the People’s Republic of China (“PRC”).

The accompanying consolidated financial statements include the financial statements of the Company, its subsidiaries, VIEs and VIE subsidiaries. As of December 31, 2018, the Company’s operating subsidiaries, operating VIE and operating VIE subsidiaries were as follows:

<u>Operating Subsidiaries</u>	<u>Equity interests held</u>	<u>Place and Date of Incorporation</u>
Gridsum Holding (China) Limited	100%	Hong Kong, July 2014
Dissector (Beijing) Technology Co., Ltd.	100%	PRC, October 2014

<u>Operating VIE</u>	<u>Economic interests held</u>	<u>Place and Date of Incorporation</u>
Gridsum Holding (Beijing) Co., Ltd	100%	PRC, August 2014

<u>Operating VIE Subsidiaries</u>	<u>Economic interests held</u>	<u>Place and Date of Incorporation</u>
Beijing Gridsum Technology Co., Ltd.	100%	PRC, December 2005
Beijing Moment Everlasting Ad Co., Ltd.	100%	PRC, January 2011
Guoxinjunhe (Beijing) Technology Co., Ltd.	100%	PRC, April 2012
Beijing Yunyang Ad Co., Ltd.	100%	PRC, March 2013
Beijing Guoxinwangyan Technology Co., Ltd.	100%	PRC, August 2015
Beijing Gridsum Yizhun Technology Co., Ltd.	100%	PRC, February 2016
Beijing Zhixunylong Software Co., Ltd.	100%	PRC, May 2017
Beijing Gridsum Wang’an Technology Co., Ltd.	100%	PRC, June 2017
Beijing Hainatianchuang Technology Development Co., Ltd.	51%	PRC, August 2017
Beijing Gridsum Hulian Technology Co., Ltd.	100%	PRC, March 2018

(b) Reorganization

The Company was incorporated in the Cayman Islands on July 21, 2014.

The Group began operations in December 2005 through Beijing Gridsum Technology Co., Ltd (“Beijing Gridsum”), a PRC domestic company established by our founders. Beijing Gridsum established two wholly owned subsidiaries, Beijing Moment Everlasting Ad Co., Ltd. (“Beijing Moment”) and Guoxinjunhe (Beijing) Technology Co., Ltd. (“Guoxinjunhe”), in January 2011 and April 2012, respectively. Beijing Moment established a wholly owned subsidiary, Beijing Yunyang Ad Co., Ltd. (“Beijing Yunyang”) in March 2013.

From July to December 2014, the Group undertook a reorganization (“2014 Restructuring”) and established the Company under the laws of the Cayman Islands; the Company established a wholly owned Hong Kong subsidiary, Gridsum Holding (China) Limited (“Gridsum HK”), which in turn established a wholly owned subsidiary in China, Dissector (Beijing) Technology Co. Ltd. (“WFOE”). Also as part of this 2014 Restructuring, Gridsum Holding (Beijing) Co., Ltd. (“Gridsum PRC Holding”) was established to acquire full ownership of Beijing Gridsum, Beijing Moment and Guoxinjunhe from Beijing Gridsum.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

On December 22, 2014, the WFOE entered into a series of contractual agreements (“VIE agreements”) with Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, as a result of which Gridsum PRC Holding became a VIE of which the Company is the primary beneficiary, and the Company consolidates the financial results of Gridsum PRC Holding and its subsidiaries. Prior to the 2014 Restructuring, the Group was controlled by a predecessor Cayman Islands entity, which through another restructuring in 2010 (“2010 Restructuring”) controlled the Group entities in China according to a set of contractual arrangements containing terms and conditions identical to those of the VIE agreements. The 2010 Restructuring was undertaken in order to facilitate an international financing completed in September 2010 as well as to comply with relevant government regulations and policies in the PRC. The VIE agreements have superseded the 2010 contractual arrangements. Prior to the 2010 Restructuring, the Group’s founders and management held 100% of the beneficial ownership interest in Beijing Gridsum. In the 2010 Restructuring, the predecessor Cayman Islands entity was established with the same beneficial ownership structure as Beijing Gridsum. Therefore, the Group’s founders and management held 100% of the beneficial ownership interests in, and maintained control of, the Group immediately before and after the 2010 restructuring.

In the 2014 Restructuring, the Company was established with the same beneficial ownership structure as the predecessor Cayman Islands entity. Therefore, the Group’s founders, management and the then outstanding Preferred Shareholders held 100% of the beneficial ownership interests in, and maintained control of, the Group immediately before and after the 2014 restructuring.

The entities included in the 2010 Restructuring and 2014 Restructuring were under common control and the two reorganizations have been accounted for in a manner akin to a pooling of interest as if the Company, through its wholly owned subsidiaries, had been in existence and been the primary beneficiary of the VIEs throughout the periods presented in the consolidated financial statements.

(c) Contracts with Variable Interest Entities

To comply with applicable PRC laws and regulations, the Group conducts operations in China principally through Beijing Gridsum, Beijing Moment, Guoxinjunhe, Beijing Yunyang, Beijing Guoxinwangyan Technology Co., Ltd. and Beijing Gridsum Yizhun Technology Co., Ltd. The WFOE has entered into a series of contractual arrangements with the parent of these companies, Gridsum PRC Holding, and the shareholders of Gridsum PRC Holding. These contractual arrangements allow the Company to exercise effective control over Gridsum PRC Holding and to receive substantially all of the economic benefits of Gridsum PRC Holding. As a result of these contractual arrangements, the Company is the primary beneficiary of Gridsum PRC Holding, and the Company treats it as a VIE in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”). The following is a summary of the currently effective contractual arrangements among the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding:

Exclusive Business Cooperation Agreement. Under the Exclusive Business Cooperation Agreement dated December 22, 2014, between the WFOE and Gridsum PRC Holding, Gridsum PRC Holding has appointed the WFOE as its exclusive provider of technical support, business support and related consulting services and has agreed to accept all consultations and services provided by the WFOE and, without prior written consent of the WFOE, not to accept the same or any similar consultations and/or services provided by, or establish similar cooperation relationships with, any third party. In consideration of the services provided by the WFOE, Gridsum PRC Holding has agreed to pay the WFOE, on a quarterly basis, service fees equal to 90% of Gridsum PRC Holding’s net income (which equals gross income less mutually agreed costs). The parties can reasonably adjust the calculation of such service fees. The WFOE shall have exclusive and proprietary rights and interests in all rights, ownership, interests and intellectual property owned and used by the WFOE during the performance of the agreement. The term of the agreement is 10 years and may be extended if confirmed in writing by the WFOE prior to expiration (and Gridsum PRC Holding shall unconditionally accept such extension). Gridsum PRC Holding shall not terminate the agreement prior to its expiration, unless the WFOE commits gross negligence or fraudulent act against Gridsum PRC Holding, whereas the WFOE may terminate the agreement upon giving 30 days’ prior written notice to Gridsum PRC Holding at any time.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

Exclusive Option Agreements. Under the Exclusive Option Agreements dated December 22, 2014, between the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding granted to the WFOE an irrevocable and exclusive right to purchase, or designate other person(s) to purchase, to the extent permitted by PRC laws, at any time all or part of such shareholders' equity interests in Gridsum PRC Holding. The purchase price shall be equal to the registered capital of Gridsum PRC Holding multiplied by the portion of equity interests to be purchased and RMB10.00, or, if there is any mandatory provision regarding the purchase price under PRC laws, the lowest price permitted by PRC laws. Without prior written consent of the WFOE, Gridsum PRC Holding shall not: (i) supplement, change or amend its articles of association, increase or decrease its registered capital or change its capital structure in any manner, (ii) sell, transfer, mortgage or dispose of or create security interest on, its assets, business or legal right to collect interests, (iii) create, succeed to, guarantee or permit any debt, except for debts arising in the course of the ordinary or daily business operation, (iv) enter into any material contract (i.e., any contract with a value exceeding RMB1,000,000), or (v) provide loan or credit to Gridsum PRC Holding's shareholders in any form; and the shareholders of Gridsum PRC Holding shall not sell, transfer, mortgage or dispose of or create security interest on, such shareholders' legal or beneficial interest in the equity interests in Gridsum PRC Holding. The term of these agreements is 10 years and may be renewed at the WFOE's election.

Shareholders' Voting Rights Proxy Agreements. Under the Shareholders' Voting Rights Proxy Agreements dated December 22, 2014, between the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding irrevocably authorize the WFOE or its designee to act on their behalf as their exclusive agent and attorney with respect to all matters concerning their shareholder rights, including, without limitation, to propose, convene and attend shareholder meetings as the proxy of such shareholders and to exercise all of such shareholder's voting rights provided under PRC laws or the articles of association of Gridsum PRC Holding. Each agreement will remain effective until the equity interest of the respective shareholder in Gridsum PRC Holding is transferred to the WFOE.

Equity Pledge Agreements. Under the Equity Pledge Agreements dated December 22, 2014, between the WFOE, Gridsum PRC Holding and the shareholders of Gridsum PRC Holding, the shareholders of Gridsum PRC Holding pledge all of their equity interests in Gridsum PRC Holding to the WFOE as security for the performance of the obligations of Gridsum PRC Holding and its shareholders under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreements and the Shareholders' Voting Rights Proxy Agreements. In the event of breach of any secured obligation by Gridsum PRC Holding or the respective shareholder, the WFOE is entitled to all remedial rights and powers afforded under PRC laws, including to receive proceeds from auctions or sale-offs of the pledged equity. No dividend or distribution can be paid or made to the shareholders in respect of the pledged equity unless consented by the WFOE, and the dividends or distributions received by the shareholders shall first be applied to satisfy the secured obligations. The pledges will be released upon the full and complete performance of the secured obligations and the full payment of losses and fees resulted from a breach of those agreements by Gridsum PRC Holding or its shareholders. The equity pledges have been registered with the registration authorities of industry and commerce in accordance with PRC laws.

In addition to the contractual agreements described above, the Company has entered into an Exclusive Rights Arrangement with the predecessor Cayman Islands entity on December 22, 2014. Under this agreement, the Company exercises effective control over the predecessor Cayman Islands entity and receives substantially all of the economic benefits of the predecessor Cayman Islands entity. As a result of this agreement, the Company is the primary beneficiary of the predecessor Cayman Islands entity, and the Company treats it as a VIE. The Company consolidates the financial results of the predecessor Cayman Islands entity and its subsidiaries in the Company's consolidated financial statements. The following is a summary of the Exclusive Rights Arrangement among the Company, the predecessor Cayman Islands entity and the shareholders of the predecessor Cayman Islands entity that was in effect until termination on August 10, 2015 in connection with the completion of the 2014 restructuring.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

All the shareholders agreed to irrevocably assign and entrust to the Company any and all of their respective voting rights and dividends rights with respect to any and all of the equity securities they held in the predecessor Cayman Islands entity. All the actions associated with any shareholder's voting rights conducted by the Company shall be deemed as such shareholders' own actions, and all the shareholders' resolutions executed by the Company shall be deemed to be executed by all of the shareholders themselves. Each shareholder agreed to refrain from exercising any of the voting rights associated with its shareholding in the predecessor Cayman Islands entity, all of which have been authorized and entrusted to the Company. If a dividend or other distribution is declared, paid or set aside, each shareholder shall immediately transfer to the Company any and all of such dividend or distribution. No dividend or distribution, whether in cash, in property or in any other equity securities of the predecessor Cayman Islands entity, shall be declared, paid, set aside or made without the written consent of the Company.

Risks in relation to the VIE structure

In the opinion of the Company's management, the contractual arrangements discussed above have resulted in the Company and the WFOE having the power to direct activities that most significantly impact the VIEs and VIE subsidiaries, including appointing key management, setting up operating policies, exerting financial controls and transferring profit or assets out of the VIEs and VIE subsidiaries at its discretion. The Company and the WFOE believe they have the right to receive all the benefits and assets of the VIEs and VIE subsidiaries, except for registered capital of the VIEs and VIE subsidiaries totaling RMB146,000 and RMB236,000 as of December 31, 2017 and 2018, respectively. As the VIEs and VIE subsidiaries organized in the PRC were established as limited liability companies under PRC law, their creditors do not have recourse to the general credit of the WFOE for the liabilities of these VIEs and VIE subsidiaries, and the WFOE does not have the obligation to assume the liabilities of these VIEs and VIE subsidiaries.

The Company believes that its contractual arrangements with the VIEs are in compliance with PRC law and are legally enforceable. In addition, the shareholders of Gridsum PRC Holding are also beneficial owners of the Company and therefore have no current interest in seeking to act contrary to the contractual arrangements. However, uncertainties in the PRC legal system could limit the Group's ability to enforce the VIE agreements.

On January 19, 2015, the Ministry of Commerce ("MOFCOM"), released for public comment a proposed PRC law, the Draft FIE Law, that appears to include VIEs within the scope of entities that could be considered to be foreign invested enterprises, or FIEs, that would be subject to restrictions under existing PRC law on foreign investment in certain categories of industry. Specifically, the Draft FIE Law introduces the concept of "actual control" for determining whether an entity is considered to be an FIE. In addition to control through direct or indirect ownership or equity, the Draft FIE Law includes control through contractual arrangements within the definition of "actual control." If the Draft FIE Law is passed by the People's Congress of the PRC and goes into effect in its current form, these provisions regarding control through contractual arrangements could be construed to reach our VIE arrangements, and as a result our PRC-organized VIEs could become explicitly subject to the current restrictions on foreign investment in certain categories of industry. The Draft FIE Law includes provisions that would exempt from the definition of foreign invested enterprises entities where the ultimate controlling shareholders are either entities organized under PRC law or individuals who are PRC citizens. The Draft FIE Law is silent as to what type of enforcement action might be taken against existing VIEs, such as Gridsum PRC Holding, that operate in restricted or prohibited industries and are not controlled by entities organized under PRC law or individuals who are PRC citizens. If the restrictions and prohibitions on foreign invested enterprises included in the Draft FIE Law are enacted and enforced in their current form, our ability to use our VIE arrangements and our ability to conduct business through them could be severely limited.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

The Company's ability to control Gridsum PRC Holding and its subsidiaries also depends on the WFOE's rights, under the Shareholders' Voting Rights Proxy Agreements, to vote on all matters requiring shareholder approval. As noted above, the Company believes these Shareholders' Voting Rights Proxy Agreements are legally enforceable, but yet they may not be as effective as direct equity ownership. In addition, if the corporate structure of the Group or the contractual arrangements between the WFOE, Gridsum PRC Holding and their respective shareholders were found to be in violation of any existing PRC laws and regulations, the relevant PRC regulatory authorities could:

- revoke the Group's business and operating licenses;
- require the Group to discontinue or restrict its operations;
- restrict the Group's right to collect revenues;
- block Group websites;
- require the Group to restructure the operations, re-apply for the necessary licenses or relocate its businesses, staff and assets;
- impose additional conditions or requirements with which the Group may not be able to comply; or
- 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 may result in a material adverse effect on the Group's ability to conduct its business. In addition, if the imposition of any of these restrictions causes the Company to lose the right to direct the activities of the Gridsum PRC Holding or the right to receive its economic benefits, the Company would no longer be able to consolidate the financial statements of Gridsum PRC Holding and its subsidiaries. The Company believes the likelihood of losing the benefits of the Group's current ownership structure and contractual arrangements with Gridsum PRC Holding is remote based on the current facts and circumstances.

There is no VIE in which the Company has a variable interest but is not the primary beneficiary. Currently there is no contractual arrangement that could require the Company to provide additional financial support to the VIEs.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

The consolidated financial information of the VIEs and VIE subsidiaries, including the inter-group transactions with other entities in the Group, has been included in the accompanying consolidated financial statements of the Group as follows:

	As of December 31,		
	2017	2018	
	RMB	RMB	
Total assets	1,054,865	864,934	
Total liabilities	996,074	937,801	

	For the year ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Net revenues	533,681	558,393	722,022
Net income/(loss)	105,597	160,550	(131,658)

	For the year ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Net cash provided by/(used in) operating activities	(105,837)	(150,686)	268,946
Net cash used in investing activities	(45,968)	(22,920)	(57,231)
Net cash provided by/(used in) financing activities	62,151	201,019	(261,019)

In accordance with various contractual agreements, the Company has the power to direct the activities of the VIEs and can have assets transferred out of the VIEs. Therefore, the Company considers that there are no assets in the consolidated VIEs that can be used only to settle obligations of the consolidated VIEs, except for registered capital of the VIEs and VIE subsidiaries totaling RMB146,000 and RMB236,000 as of December 31, 2017 and 2018, respectively. As the consolidated VIEs are incorporated as limited liability companies under the Company Law of the People's Republic of China, creditors do not have recourse to the general credit of the Company for the liabilities of the consolidated VIEs.

Liquidity

The Group has been incurring recurring losses from operations since inception. Accumulated losses from operations were RMB549,911 and RMB1,077,409 as of December 31, 2017 and 2018, respectively. The net cash used in operating activities was RMB235,177, RMB306,704 and RMB233,130 for the years ended December 31, 2016, 2017 and 2018, respectively.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

1. Organization and Principal Activities (continued)

The Group's ability to fund operations is based on its ability to generate cash, its ability to attract investors and its ability to borrow funds on reasonable economic terms. Historically, the Group has relied principally on operational sources of cash and non-operational sources of financing from investors and banks to fund its operations and business development. The Group depends on management's ability to successfully execute its business plan, which includes increasing revenues while controlling operating expenses, as well as generating operational cash flows and continuing to gain support from outside sources of financing. The Group completed its initial public offering in September 2016 (see Note 13) and completed a US\$40 million convertible note issuance on May 5, 2018 (see Note 10). On February 28, 2019, the Company entered into a share subscription agreement, pursuant to which the Company issued and sold an aggregate of 3,461,902 Class B ordinary shares to certain equity investment firms for an aggregate price of approximately US\$11.1 million (see Note 19). In addition, the Group obtained bank loans from time to time to fund its working capital needs. The Group believes that it can meet the future liquidity and capital requirements for at least next twelve months from April 2019 by generating cash from operations, obtaining various financial arrangements, as well as controlling the Group's operating expenses, etc. Based on the above considerations, the Company's consolidated financial statements have been prepared on a basis that contemplates the realization of assets and liquidation of liabilities in the normal course of business.

(d) Initial Public Offering

The Company completed its initial public offering ("IPO") on September 23, 2016 on The Nasdaq Stock Market and the underwriters subsequently exercised their over-allotment option on October 3, 2016. The Company issued and sold a total of 7,705,000 American Depositary Shares ("ADSs") pursuant to these transactions. Each ADS represents one Class B ordinary share of the Company. The net proceeds received by the Company, after deducting commissions and offering expenses, amounted to approximately US\$87.1 million. Upon the completion of the IPO, all of the Company's outstanding preferred shares were converted into Class B ordinary shares immediately as of the same date.

2. Principal Accounting Policies

(a) Basis of Presentation

The Company's consolidated financial statements have been prepared in accordance with U.S. GAAP. Significant accounting policies followed by the Company in the preparation of the accompanying consolidated financial statements are summarized below.

(b) Principles of Consolidation

The consolidated financial statements of the Company have been prepared in accordance with U.S. GAAP. The consolidated financial statements include the financial statements of the Company, its subsidiaries, VIEs and VIE subsidiaries for which the Company is the ultimate primary beneficiary.

Subsidiaries are those entities in which the Company, directly or indirectly, controls more than one half of the voting power or has the power to govern the financial and operating policies, 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. A VIE is an entity in which the Company, or its subsidiary, through contractual arrangement exercises effective control over the activities that most impact economic performance and bears the risks of and enjoys the rewards normally associated with ownership of the entity, so that the Company or its subsidiary is the primary beneficiary of the entity. All transactions and balances among the Company, its subsidiaries, VIEs and VIE subsidiaries have been eliminated upon consolidation.

.GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(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 and liabilities, related disclosures of contingent liabilities at the balance sheet date and the reported revenues and expenses during the reported period in the consolidated financial statements and accompanying notes. Significant accounting estimates include, but are not limited to, revenue recognition, share-based compensation, redemption value of the redeemable preferred shares, realization of deferred tax assets and determination of the estimated useful lives of property and equipment. Actual results could differ materially from such estimates.

(d) Foreign Currency Translation

The Company used U.S. Dollar as its reporting currency, and subsequently changed to RMB effective January 1, 2016 which applied retrospectively. The functional currency of the Company and its subsidiaries incorporated in Hong Kong is U.S. Dollars, while the functional currency of the other entities in the Group is RMB. Assets and liabilities are translated at the applicable exchange rates on the balance sheet date. Equity amounts are translated at historical exchange rates. Revenues, expenses, gains and losses are translated using the average exchange rate for the periods. 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 consolidated statement of changes in shareholders' equity.

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 gain/(loss), net in the consolidated statements of operations and comprehensive loss.

(e) Convenience Translation

Translations of balances in the consolidated balance sheets, consolidated statements of operation and comprehensive loss and statements of cash flows from RMB into U.S. Dollars as of and for the year ended December 31, 2018 are solely for the convenience of the reader and were calculated at the rate of US\$1.00 = RMB 6.8755, representing the noon buying rate in The City of New York for cable transfers of RMB as certified for customs purposes by the Federal Reserve Bank of New York on December 31, 2018. No representation is made that the RMB amounts represent or could have been, or could be, converted, realized or settled in U.S. Dollars at that rate on December 31, 2018, or at any other rate.

(f) Cash and Cash Equivalents

Cash and cash equivalents represent cash on hand and demand deposits with term less than three months which are unrestricted as to withdrawal and use.

(g) Restricted Cash

Cash that is restricted as to withdrawal or is used or pledged as security is reported separately on the face of the Consolidated Balance Sheets. The Group's restricted cash mainly represents (a) security deposits held in designated bank accounts for issuance of bank acceptance and letter of guarantee; (b) time deposits that are pledged for short-term bank loans.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (230): Restricted Cash. The amendments in this Update require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. For public business entities, the amendments in this update are effective for fiscal years beginning after December 15, 2017, and interim periods within those annual periods. Earlier adoption is permitted. The amendments in this Update should be applied using a retrospective transition method to each period presented. On January 1, 2018, the Group adopted this guidance on a retrospective basis and has applied the changes to the consolidated statement of cash flows starting from the year ended December 31, 2016.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(h) Time Deposit

Time deposit represent demand deposits placed with banks with original maturities of more than three months but less than one year. Interest earned is recorded as interest income in the consolidated statements of comprehensive loss during the periods. Time deposit are valued based on the prevailing interest rates in the market.

(i) Accounts Receivable, net

Accounts receivable mainly represent amounts due from customers, including revenues earned, output VAT and amounts paid, or will pay, to search engines on behalf of customers, and are recorded net of an allowance for doubtful accounts, if any. The Company considers many factors in assessing the collectability of its accounts receivable, such as the age of the amounts due, the payment history, credit worthiness and the financial condition of the debtor. The Company also makes a specific allowance if there is strong evidence indicating that an accounts receivable is likely to be unrecoverable. Accounts receivable balances are written off after all collection efforts have been exhausted.

(j) Property and Equipment, net

Property and equipment are stated at cost less accumulated depreciation and amortization and impairment. Property and equipment are depreciated at rates sufficient to write off their costs less impairment and residual value (estimated at 5% of cost) over their estimated useful lives on a straight-line basis. Leasehold improvements are depreciated on a straight-line basis over the period of the lease or their estimated useful lives, if shorter. The estimated useful lives are as follows:

Computers	3 years
Furniture, fixtures and equipment	5 years
Vehicles	5 years
Leasehold improvements	Over the shorter of lease terms or the estimated useful lives of assets

Expenditures for repairs and maintenance are expensed as incurred, whereas the costs of renewals and betterment that extends the useful lives of property and equipment are capitalized as additions to the related assets. Retirements, sales and disposals of assets are recorded by removing the costs, accumulated depreciation and amortization and impairment with any resulting gain or loss recognized in the consolidated statements of operations and comprehensive loss.

(k) Impairment of Long-lived Assets

Long-lived assets are evaluated for impairment whenever events or changes in circumstances (such as a significant adverse change to market conditions that will impact the future use of the assets) indicate that the carrying value of an asset may not be fully recoverable or that the useful life is shorter than the Group had originally estimated. When these events occur, the Group evaluates the impairment for the long-lived assets by comparing the carrying value of the assets to an estimate of future undiscounted cash flows expected to be generated from the use of the assets and their eventual disposition. Such assets are considered to be impaired, if the sum of the expected future undiscounted cash flows is less than the carrying value of the assets. The impairment to be recognized is then measured by the amount by which the carrying amounts of the assets exceed the fair value of the assets based on the discounted cash flow. No impairment charge was recognized for any of the periods presented.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(l) Intangible Assets with Finite Useful Life

Intangible assets, comprising acquired computer software, customer relationship and other finite-lived intangible assets, which are separable from the fixed assets, are stated at cost less accumulated amortization. Amortization is computed using the straight-line method over the estimated useful lives of the assets. Acquired customer relationship arising from business combinations (Note 15) is stated at fair value upon acquisition less accumulated amortization, which is recognized using the straight-line method over the estimated useful lives of the assets. The carrying amounts of the finite-lived intangible assets are reviewed for impairment when indicators of impairment are present in accordance with ASC 360-10. In accordance with ASC 360-10, an impairment loss is recognized if the carrying amount of an intangible asset is not recoverable and its carrying amount exceeds its fair value. No impairment loss has been identified for the years ended December 31, 2016, 2017 and 2018.

The estimated economic lives are as follows:

Software and other intangible assets	3 -10 years
Acquired customer relationship	10 years

(m) Goodwill

Goodwill represents the excess of the purchase price over the fair value of the identifiable assets and liabilities of Beijing Zhixunylong Software Co., Ltd (“Zhixun”) when it was acquired by the Group in May 2017.

Goodwill is not depreciated or amortized but is tested for impairment at the reporting unit level on an annual basis every December 31, and in between annual tests when an event occurs or circumstances change that could indicate that the asset might be impaired. Commencing September 2011, in accordance with the FASB revised guidance on “Testing of Goodwill for Impairment,” a company first has the option to assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If the company decides, as a result of its qualitative assessment, that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test is mandatory. Otherwise, no further testing is required. The quantitative impairment test consists of a comparison of the fair value of each reporting unit with its carrying amount, including goodwill. If the carrying amount of each reporting unit exceeds its fair value, an impairment charge equal to the difference between the implied fair value of the reporting unit’s goodwill and the carrying amount of goodwill will be recorded. Application of a goodwill impairment test requires significant management judgment, including the identification of reporting units, assigning assets and liabilities to reporting units, assigning goodwill to reporting units, and determining the fair value of each reporting unit.

The Group as a whole, including recently acquired entities, is determined to be one reporting unit for goodwill impairment testing. The Group directly applied the quantitative assessment and performed the goodwill impairment test by quantitatively comparing the fair values of the reporting unit to its carrying amounts, and no impairment loss has been identified for the year ended December 31, 2018.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(n) Fair Value

Fair value represents the price that would be received from selling an asset, or that would be paid to transfer a liability, in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability.

Accounting guidance defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. Accounting guidance establishes a three-level fair value hierarchy and 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. The three levels of inputs are:

Level 1— Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2— Other inputs that are directly or indirectly observable in the marketplace.

Level 3— Unobservable inputs which are supported by little or no market activity.

Accounting guidance also describes three main approaches to measuring 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.

Financial assets and liabilities of the Group primarily consist of cash and cash equivalents, restricted cash, accounts receivable, prepayments and other current assets, accounts payable, amounts due to related parties, taxes payable, advances from customers and accrued expenses and other current liabilities. As of December 31, 2017 and 2018, the carrying values of these financial instruments approximated their fair values due to the short-term maturity of these instruments.

(o) Financial Instruments

The Group analyzes all financial instruments with features of both liabilities and equity under FASB Accounting Standards Codification ("ASC") Topic 480 "Distinguishing Liabilities from Equity" and FASB ASC Topic 815 "Derivatives and Hedging". The embedded conversion features of convertible debentures that are classified as derivative liabilities are recorded at fair value as a discount from the face amount of the respective debt instrument. The discount is being amortized to interest expense over the life of the note using the straight-line method, which approximates the effective interest method. These instruments are accounted for as derivative liabilities and marked-to-market each reporting period. The change in the value of the derivative liabilities is charged against or credited to income in the captioned "Gain/(loss) on change in fair value of derivative liabilities" in the accompanying consolidated statements of operations and comprehensive loss.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(p) Revenue Recognition

Revenues are generated from sales of the Group's marketing automation solutions and e-Government and other solutions. The targeted customers for marketing automation solutions are enterprise customers and the targeted customers for e-Government and other solutions are governmental agencies and state-owned entities.

Prior to January 1, 2018, revenues are recognized when 1) persuasive evidence of an arrangement exists, 2) the Group's platform is made available and services have been delivered to the customer, 3) the fee is fixed or determinable and 4) collection is reasonably assured.

Revenues received from the incentive programs of search engine providers are based on factors determined by these providers, such as yearly growth in the amount of advertising on the provider's search engine platform that the Company's customers purchase through its solutions, and other factors selected at the discretion of these providers. Revenues are recorded net of value-added taxes and surcharges.

In accordance with ASC 605-45, Revenue Recognition: Principal Agent Considerations, the Company considers several factors in determining whether it acts as the principal or as an agent in the arrangement of merchandise sales and provision of various related services and thus whether it is appropriate to record the revenues and the related cost of sales on a gross basis or record the net amount earned as service fees.

Where customers purchase multiple solutions in a single contract, the Company allocates the total consideration to the various elements based on the relative selling price method and recognizes revenues as services are rendered. In accordance with ASC 605-25, Revenue Recognition—Multiple-Element Arrangements, the following hierarchy are followed when determining the appropriate selling price for each element: (1) vendor specific objective evidence ("VSOE"), (2) third party evidence ("TPE") and (3) best estimate of selling price ("BESP"). The Company recognizes revenues on the elements delivered and defers the recognition of revenues for the fair value of the undelivered elements until the remaining obligations have been satisfied. Where all of the elements within an arrangement are delivered uniformly over the agreement period, revenues are recognized on a straight-line basis over the contract period.

On January 1, 2018, we adopted Accounting Standards Update ("ASU") 2014-09 Revenue from Contracts with Customers (FASB ASC Topic 606) using the modified retrospective method for contracts that were not completed as of January 1, 2018. We did not result in an adjustment to the retained earnings upon adoption of this new guidance as the Company's revenue was recognized based on the amount of consideration we expect to receive in exchange for satisfying the performance obligations.

The ASU requires the use of a new five-step model to recognize revenue from customer contracts. The five-step model requires that the Company (i) identify the contract with the customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, including variable consideration to the extent that it is probable that a significant future reversal will not occur, (iv) allocate the transaction price to the respective performance obligations in the contract, and (v) recognize revenue when (or as) the Company satisfies the performance obligation. The application of the five-step model to the revenue streams compared to the prior guidance did not result in significant changes in the way the Company records its revenue. Upon adoption, the Company evaluated its revenue recognition policy for all revenue streams within the scope of the ASU under previous standards and using the five-step model under the new guidance and confirmed that there were no differences in the pattern of revenue recognition.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

The Group continues to derive its revenues from sales contracts where customers purchase multiple solutions in a single contract with the Group allocates the total consideration to the various elements based on the relative selling price method and recognizes revenues as services are rendered over the period of time. The Company continues to recognize revenues on the elements delivered and defers the recognition of revenues for the fair value of the undelivered elements until the remaining obligations have been satisfied. Where all of the elements within an arrangement are delivered uniformly over the agreement period, revenues are recognized on a straight-line basis over the contract period.

Enterprise

The Group generates enterprise revenue primarily by providing marketing automation solutions including bid management and data analysis solutions to enterprise customers. The Company earns and records service fee revenues over the contractual period. For certain application development contracts, the Company recognizes revenue upon completion of performance that is stipulated in the contracts. Sometimes, the Company receives revenues from the incentive programs of search engine providers based on factors determined by these providers, such as yearly growth in the amount of advertising on the provider's search engine platform that the Company's customers purchase through its solutions, and other factors selected at the discretion of these providers. Revenues from these programs are received on both a quarterly and an annual basis and are calculated in accordance with the Company's customers' usage of the search engine providers. In addition, the Company sells distribution rights of public sentiment tracking service provided by certain third party search engine to sub-distributor, due to uncertainty of collection, the revenue is recognized when fees are collected.

With respect to the bid management services, the Group considered that: (i) the search engines are responsible for providing the advertisements service to the customers; (ii) the Group lacks the latitude to determine the prices charged by the search engine providers and earns only the fixed service fee from the customers; (iii) the hosting and maintenance of the advertisements are the responsibilities of the search engine providers; (iv) the customers have the discretion in choosing the search engines selection; (v) we receive revenues from incentive programs based on the search engine providers' policies. The Group's responsibility is to manage the customer's advertising campaign on the search engines, according to the terms of the customer contracts so the Group views itself as an agent, and records revenues related to these services on a net basis.

e-Government and Other

The Group generates e-Government and other revenues by entering into service contracts with governmental agencies for its e-government solutions, including Law Dissector solutions for the court systems and other law communities beginning in 2015. The Group also generates e-Government and other revenues by entering into contracts with state-owned television stations for its new media solutions, including TV Dissector, Streaming Dissector and Video Dissector.

(q) Advances from Customers and Deferred Revenues

Upon the entering of contracts, customers pay the contractual balance as prepayments. The Company allocates the prepayments into advances from customers and deferred revenues. Advances from customers are the balance of the advertising campaign spending that would be recognized as the cost payable to search engine providers when advertisements are placed. Deferred revenues are the revenues to be earned by the Group for services and is recognized as revenue according to the prescribed revenue recognition criteria and policies described above.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(r) Cost of Revenues

Cost of revenues primarily consists of costs related to hosting the Company's cloud-based platform, providing implementation and ongoing customer support, data communications expenses, salaries and benefits of operations and support personnel, costs associated with website development activities, allocated overhead and property and equipment depreciation.

(s) Research and Development Expenses

Research and development costs include payroll, stock-based compensation expense and other operating costs such as outside services, supplies and allocated overhead costs. Research and development costs are expensed as incurred.

The Group expenses all costs that are incurred in connection with the planning and implementation phases of development and costs that are associated with repair or maintenance of the existing websites or the development of software and website content. Costs incurred in the development phase are capitalized and amortized over the estimated product life. However, since the inception of the Company, the amount of costs qualifying for capitalization has been insignificant and as a result, all software development costs have been expensed as incurred.

(t) Marketing Expenses

Marketing expenses mainly consist of advertising costs, promotion expenses, payroll and related expenses for personnel engaged in marketing activities. Marketing expenses are expensed when the services are received. Advertising expenses are recorded as sales and marketing expenses when incurred, and totaled RMB6,094, RMB14,886 and nil for the years ended December 31, 2016, 2017 and 2018, respectively.

(u) General and Administrative Expenses

General and administrative expenses mainly consist of payroll and related costs for employees involved in general corporate functions, including accounting, finance, tax, legal and human resources, professional fees and other general corporate expenses as well as costs associated with the use by these functions of facilities and equipment, such as depreciation and rental expenses.

(v) Operating Leases

Leases where substantially all the rewards and risks of ownership of assets remain with the lessor are accounted for as operating leases. Payments made under operating leases are charged to the consolidated statements of operations and comprehensive loss on a straight-line basis over the terms of underlying lease.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(w) Share-based Compensation

All share-based awards to employees and directors, including stock option awards, are measured at the grant date based on the fair value of the awards. Share-based compensation, net of forfeitures, is recognized as expense on a straight-line basis over the requisite service period, which is the vesting period.

The Group uses the binominal option pricing model to determine the fair value of stock options and account for share-based compensation expenses using an estimated forfeiture rate at the time of grant and revising, if necessary, in subsequent periods if actual forfeitures differ from initial estimates. Share-based compensation expenses are recorded net of estimated forfeitures such that expenses are recorded only for those share-based awards that are expected to vest.

(x) Employee Benefits

The Company's subsidiaries, VIEs and VIE subsidiaries established in the PRC participate in a government-mandated, multiemployer, defined contribution plan, pursuant to which certain retirement, medical, housing and other welfare benefits are provided to employees. PRC labor laws require the entities incorporated in mainland China to pay to the local labor bureau a monthly contribution calculated at a stated contribution rate on the monthly basic compensation of qualified employees. The Group has no further commitments beyond its monthly contribution. The fair value of the employee benefits liabilities approximates their carrying value due to the short-term nature of these liabilities. The employee benefits payable amounts to RMB2,709 and RMB3,660 as of December 31, 2017 and 2018, respectively.

Employee social benefits included as expenses in the accompanying consolidated statements of operations and comprehensive loss amounted to RMB49,557, RMB66,511 and RMB75,031 for the years ended December 31, 2016, 2017 and 2018, respectively.

(y) Non-controlling Interests

The non-controlling interests are presented in the consolidated balance sheets, separately from equity attributable to the shareholders of the Company. Non-controlling interests are presented on the face of the consolidated statement of operations and comprehensive loss as an allocation of the total income or loss for the year between non-controlling interest holders and the shareholders of the Group.

(z) Income Tax

Current income taxes are provided on the basis of net income (loss) for financial reporting purposes and 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 provided using the liability method. Under this method, deferred tax assets and liabilities are recognized for the tax effects of temporary differences and are determined by applying enacted statutory tax rates that will be in effect in the period in which the temporary differences are expected to reverse to the temporary differences between the financial statements' carrying amounts and the tax bases of assets and liabilities. A valuation allowance is provided to reduce the amount of deferred tax assets if based on the weight of available evidence, it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. The effect on deferred taxes arising from a change in tax rates is recognized in the consolidated statements of operations and comprehensive loss in the period of change.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

The Group applies a “more likely than not” recognition threshold in the evaluation of uncertain tax positions. The Company recognizes the benefit of a tax position in its consolidated financial statements if the tax position is more likely than not to prevail based on the facts and technical merits of the position. Tax positions that meet the “more likely than not” recognition threshold are measured at the largest amount of tax benefit that has a greater than fifty percent likelihood of being realized upon settlement. Unrecognized tax benefits may be affected by changes in interpretation of laws, rulings of tax authorities, tax audits and expiry of statutory limitations. In addition, changes in facts, circumstances and new information may require the Group to adjust the recognition and measurement estimates with regard to uncertain tax positions. Accordingly, unrecognized tax benefits are periodically reviewed and re-assessed. Adjustments, if required, are recorded in the Company’s consolidated financial statements in the period in which the change that necessitates the adjustments occurs. The ultimate outcome for a particular tax position may not be determined with certainty prior to the conclusion of a tax audit and, in certain circumstances, a tax appeal or litigation process. As of December 31, 2016, 2017 and 2018, the Group did not have any significant unrecognized uncertain tax positions.

(aa) Comprehensive Loss

Comprehensive loss is defined to include all changes in deficit of the Group during a period arising from transactions and other events and circumstances other than those resulting from investments by shareholders and distributions to shareholders. For the years ended December 31, 2016, 2017 and 2018, the Group’s comprehensive loss included net loss and foreign currency translation adjustments.

(bb) Loss per Share

Basic loss per share is computed by dividing net loss attributable to holders of ordinary shares, considering the accretions to redemption value of the preferred shares, by the weighted average number of ordinary shares outstanding during the period using the two-class method. Under the two-class method, net loss is allocated between ordinary shares and other participating securities based on their participating rights. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders, as adjusted for the accretion and allocation of net income related to the preferred shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalent shares outstanding during the period. Ordinary equivalent shares consist of shares issuable upon the conversion of the preferred shares using the if-converted method and ordinary shares issuable upon the exercise of outstanding stock option (using the treasury stock method). Ordinary equivalent shares are not included in the denominator of the diluted earnings per share calculation when inclusion of such shares would be anti-dilutive.

(cc) Segment Reporting

The Group provided various services to its customers, commercial companies and also government agencies or state-owned entities, including keyword bidding, graphical and non-graphical advertisements placement services, website quality analysis services, subscription for using multiple suites of the Dissector solutions service. The Group’s chief operating decision maker has been identified as the chief executive officer, who reviews consolidated results when making decisions about allocating resources and assessing performance of the Group. The Group does not distinguish between markets or segments for the purpose of internal reporting. Hence, the Group has only one operating segment. As the Group’s assets and liabilities are substantially located in the PRC, substantially all revenues are earned and substantially all expenses are incurred in the PRC, no geographical segments are presented.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

(dd) Statutory Reserves

The Group's subsidiaries, VIEs and VIE subsidiaries established in the PRC are required to make appropriations to certain non-distributable reserve funds.

In accordance with PRC laws applicable to foreign investment enterprises ("FIE") established in the PRC, the Company's subsidiaries registered as wholly foreign owned enterprise have to make appropriations from their after-tax profits (as determined under generally accepted accounting principles in the PRC ("PRC GAAP")) to non-distributable reserve funds including general reserve fund, enterprise expansion 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 general reserve fund has reached 50% of the registered capital of the company. Appropriations to the enterprise expansion fund and staff bonus and welfare fund are made at the respective company's discretion.

In addition, in accordance with the Company Law of the People's Republic of China, the VIEs and VIE subsidiaries, registered as Chinese domestic companies, must make appropriations from their after-tax profits as determined under the PRC GAAP to non-distributable reserve funds including the statutory surplus fund and discretionary surplus fund. The appropriation to the statutory surplus fund must be 10% of the after-tax profits as determined under PRC GAAP. Appropriation is not required if the statutory 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 Group.

The Group has made no appropriations to statutory surplus fund and other reserve funds for the years ended December 31, 2016, 2017 and 2018 as the Company's subsidiaries, VIEs and VIE subsidiaries in the PRC were in accumulated loss positions.

The general reserve fund, enterprise expansion fund, statutory surplus fund and discretionary surplus fund are restricted for use. They may only be applied to offset losses or increase the registered capital of the respective company. The staff bonus and welfare fund is liability in nature and is restricted to make payment of special bonuses to employees and for the collective welfare of employees. None of these reserves is allowed to be transferred to the Company by way of cash dividends, loans or advances, nor can they be distributed except under liquidation.

(ee) Recent Accounting Pronouncements

In November 2015, the FASB issued ASU No. 2015-17, "Compensation—Stock Compensation: Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes". The new guidance requires entities to present all deferred tax assets and liabilities, along with any related valuation allowance, as non-current on the balance sheet. The Group does not expect this standard to have a material impact on its consolidated financial statements.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

2. Principal Accounting Policies (continued)

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842)”. The new guidance requires that a lessee recognize the assets and liabilities that arise from operating leases. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. In transition, lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. Public business entities should apply the amendments in ASU No. 2016-02 for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years (i.e., January 1, 2019, for a calendar year entity). The Group occupies various offices under operating lease agreement with a term longer than 12 months for which prior to adoption of the guidance are not reflected in its consolidated balance sheet at December 31, 2017 and 2018. The Group adopted ASU 2016-02 on January 1, 2019 and recognized additional operating liabilities of approximately RMB149.3 million with corresponding right of use (“ROU”) assets of the same amount based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases with a term longer than 12 months.

In June 2018, the FASB issued ASU No. 2018-07 to provide guidance to reduce cost and complexity and to improve financial reporting for share-based payments issued to nonemployees (for example, service providers, external legal counsel, suppliers, etc.). The amendments in this ASU are effective for public companies for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. The Group does not expect that the adoption of this guidance will have a material impact on its consolidated financial statements.

The Group does not believe other recently issued but not yet effective accounting standards, if currently adopted, would have a material effect on the Group’s consolidated balance sheets, statements of income and comprehensive income and statements of cash flows.

3. Concentration and Risks

Concentration of credit risk

Assets that potentially subject the Group to significant concentrations of credit risk primarily consist of cash and cash equivalents and accounts receivable. As of December 31, 2017 and 2018, all of the Group’s cash and cash equivalents were held by reputable financial institutions located in the PRC, Hong Kong and the United States, which management believes are of high credit quality and financially sound based on publicly available information.

Accounts receivable is typically unsecured and is generally derived from revenues earned from marketing automation solutions. Customers with a receivable balance exceeding 10% of the total accounts receivable balance, net of allowance for doubtful accounts, as of December 31, 2017 and 2018, are listed as follows:

	<u>December 31, 2017</u>	<u>December 31, 2018</u>
Customer A	25.9%	—

Concentration of customer risk

The top 20 customers accounted for 55%, 44% and 39% of the total revenues for the years ended December 31, 2016, 2017 and 2018, respectively.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

3. Concentration and Risks (continued)

Currency risk

The Group's operations, and its assets and liabilities are primarily denominated in RMB, which is not freely convertible into foreign currencies. The Group's cash and cash equivalents denominated in RMB are subject to government controls and amounted to RMB135,542 and RMB58,282 as of December 31, 2017 and 2018, respectively. The value of the RMB is subject to changes in the central government policies and international economic and political developments that affect the supply and demand of RMB in the foreign exchange market. In the PRC, certain foreign exchange transactions are required by law to be transacted only by authorized financial institutions at exchange rates set by the People's Bank of China (the "PBOC"). Remittances from China in currencies other than RMB by the Group must be processed through the PBOC or other China foreign exchange regulatory bodies which require certain supporting documentation in order to effect the remittance.

4. Accounts Receivable, Net

The following summarizes the Group's accounts receivable as of December 31, 2017 and 2018:

	As of December 31,	
	2017	2018
	RMB	RMB
Accounts receivable	644,729	459,950
Less: Allowance for doubtful accounts	(45,449)	(61,981)
Accounts receivable, net	599,280	397,969

The amount of payments to search engines on behalf of customers included in accounts receivable was RMB449,411 and RMB283,687 as of December 31, 2017 and 2018, respectively.

The following table sets out the movements of the allowance for doubtful accounts for the years ended December 31, 2017 and 2018:

	As of December 31,	
	2017	2018
	RMB	RMB
Balance at beginning of the year	(20,959)	(45,449)
Charged to costs and expenses	(24,490)	(16,532)
Balance at end of the year	(45,449)	(61,981)

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

5. Prepayments and Other Current Assets

The following is a summary of prepayments and other current assets:

	As of December 31,	
	2017	2018
	RMB	RMB
Deposits to search engine service providers	170,403	124,668
Prepayments to suppliers	96,839	134,956
Advances to employees	12,372	5,581
Prepaid rental and other deposits	12,598	23,032
Penalty receivable from customer	257	—
Receivables in connection with exercise of option from agents	2,565	—
Others	11,058	6,667
Total	<u>306,092</u>	<u>294,904</u>

Deposits to search engine service providers represent deposits to guarantee the minimum amount of ad spending by the Group's customers and are refunded annually when the minimum ad spending requirement is met.

6. Property and Equipment, net

The following is a summary of property and equipment, net:

	As of December 31,	
	2017	2018
	RMB	RMB
Computers	73,292	80,667
Furniture, fixtures and equipment	4,072	4,121
Vehicles	3,772	4,291
Leasehold improvements	42,593	63,901
Total	123,729	152,980
Less: accumulated depreciation and amortization	(72,856)	(90,652)
Property and equipment, net	<u>50,873</u>	<u>62,328</u>

Depreciation expenses for the years ended December 31, 2016, 2017 and 2018 were RMB23,722, RMB29,858 and RMB31,357, respectively.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

7. Intangible Assets, net

The following is a summary of intangible assets, net:

	As of December 31,	
	2017	2018
	RMB	RMB
Acquired Software and other intangible assets	11,051	18,809
Customer relationship	677	677
Less: accumulated depreciation and amortization	(2,302)	(5,646)
Intangible Assets, net	9,426	13,840

Amortization expenses for the years ended December 31, 2016, 2017 and 2018 were RMB171, RMB1,616 and RMB3,344 respectively.

	Expected Future Amortization Expense
Twelve months ending December 31, 2019	4,084
2020	3,112
2021	1,474
2022	929
2023	929
Thereafter	3,312
Total expected future amortization expense	13,840

8. Short-term Bank Loans

In 2017 and 2018, the Group entered into several short-term guaranteed loan agreements. Each of the loan agreements provides for a RMB revolving credit facility with a maturity term within twelve months. The guarantees on these loans were provided by Guosheng Qi, the Co-Founder, chief executive officer and chairman of the Company, or provided by Beijing Haidian Sci-tech Enterprises Financing Guarantee Co., Ltd, or provided by Gridsum Holding (Beijing) Co., Ltd.

Short-term bank loans as of December 31, 2017 and 2018 amounted to RMB266,019 and RMB5,000, respectively, which consisted of several bank borrowings denominated in RMB. All of these bank borrowings were repayable within one year. The weighted average interest rate for the outstanding borrowings as of 2017 and 2018 was approximately 4.68% and 5.23%, respectively.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

9. Accrued Expenses and Other Current Liabilities

The following is a summary of accrued expenses and other current liabilities:

	<u>As of December 31,</u>	
	<u>2017</u>	<u>2018</u>
	<u>RMB</u>	<u>RMB</u>
Customer deposits	26,445	13,453
Accrued expenses	57,685	114,935
Accrued property, equipment and software related payables	2,706	11,545
Others	3,885	8,007
Total	<u>90,721</u>	<u>147,940</u>

10. Convertible Note

On May 5, 2018, the Group completed the transactions contemplated by its April 30, 2018 convertible note purchase agreement with FutureX Innovation SPC. In accordance with the convertible note purchase agreement, the Group received US\$40 million (approximately RMB 275,020) and issued the FutureX Convertible Note that is convertible, in whole or in part, into the Company's Class B ordinary shares at a conversion price of US\$6.50 per share, subject to customary adjustments. The FutureX Convertible Note has a term of 18 months and bears interest at 2.80% per annum. The FutureX Convertible Note includes other customary terms and covenants, including certain events of default after which the FutureX Convertible Note may be due and payable immediately. Additionally, in the event of a fundamental change, as defined in the FutureX Convertible Note, the holder of the note may require the Group to repurchase the FutureX Convertible Note at a price equal to 100% of the principal amount of the FutureX Convertible Note, plus accrued and unpaid interest. FutureX Innovation SPC agreed not to transfer or sell the FutureX Convertible Note, the Class B ordinary shares or any of the Company's other securities, or enter into any swap, short sale or similar arrangements relating to such securities, for a period of six months after the issuance of the FutureX Convertible Note. In connection with this transaction, the Group and FutureX Innovation SPC entered into a registration rights agreement, pursuant to which FutureX Innovation SPC has the right to require the Group, within 15 months following the issuance of the FutureX Convertible Note, to file a registration statement with the SEC covering the offer and sale of the Class B ordinary shares issued upon conversion of the FutureX Convertible Note, as well as certain customary piggyback registration rights.

The notes are convertible into the Group's ordinary shares at conversion price is US\$6.50, which is higher than the price of the Group's ordinary shares on the date of issuance, therefore the conversion feature embedded in the note did not meet the definition of beneficial conversion feature. The Company determined that conversion option embedded in the note meet the definition of a derivative liability instrument and re-measured at fair value at each financial reporting date until such time as the conversion feature is exercised or expired. The Company evaluated the fair value of the embedded conversion feature at the issuance date and recorded the amount as discount to convertible note payable. The discount to convertible note payable is being amortized to interest expense over the life of the note using the straight-line method, which approximates the effective interest method.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

10. Convertible Note (continued)

The fair value of embedded conversion feature were RMB58,486 and calculated using the binomial model based on the following variables at inception on May 5, 2018:

- Strike price of US\$6.50, for the conversion options
- Expected volatility of 56.0% calculated using the Company's historical price of its Class B ordinary shares
- Expected dividend yield of 0%
- Risk-free interest rate of 3.12%, for the conversion options
- Expected life of 1.5 years
- Market price at issuance date of US\$5.73

The fair value of embedded conversion feature were RMB596 and calculated using the binomial model based on the following variables on December 31, 2018:

- Strike price of US\$6.50, for the conversion options
- Expected volatility of 56.0% calculated using the Company's historical price of its Class B ordinary shares
- Expected dividend yield of 0%
- Risk-free interest rate of 3.02%, for the conversion options
- Expected life of 0.83 years
- Market price at re-measurement date of US\$2.23

Convertible note balance as of December 31, 2018 was RMB242,702, net of debt discount of RMB32,318. Amortization of debt discount for the year ended December 31, 2018 was RMB25,337. Gain on change in fair value of derivative liabilities for the year ended December 31, 2018 were RMB57,890. Interest expenses in relation to this convertible note for the year ended December 31, 2018 was RMB4,987.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

11. Taxation

(a) Value added tax

The Group's revenues are subject to VAT at the rate of 6%. The Group's VAT payable balance amounted to RMB32,413 and RMB11,827 as of December 31, 2017 and 2018, respectively.

(b) Income tax

Cayman Islands

Under the current laws of the Cayman Islands, the Group is not subject to tax on income or capital gain. Additionally, the Cayman Islands does not impose a withholding tax on payments of dividends to shareholders.

Hong Kong

Under the current Hong Kong Inland Revenue Ordinance, the Company's Hong Kong subsidiary is subject to Hong Kong profits tax at the rate of 16.5% on its taxable income generated from the operations in Hong Kong. Payments of dividends by the subsidiary to the Company are not subject to withholding tax in Hong Kong.

PRC

The Group's subsidiaries, VIEs and VIE subsidiaries in the PRC are subject to the PRC Corporate Income Tax Law ("CIT Law") and are taxed at the statutory income tax rate of 25%.

The CIT 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 CIT 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, property, 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 operations outside the PRC should be considered a resident enterprise for PRC tax purposes.

High and new technology enterprises ("HNTE") will enjoy a preferential enterprise income tax rate of 15% under the CIT Law. Beijing Gridsum Technology Co., Ltd. and Guoxinjunhe (Beijing) Technology Co., Ltd, the Group's consolidated affiliated entities in the PRC, which are qualified as a HNTE under the CIT Law, is eligible for a preferential enterprise income tax rate of 15% for the period from 2014 to 2019, so long as they obtain approval from relevant tax authority if they are profitable during the period. In 2016, Beijing Moment Everlasting Ad Co., Ltd. and Beijing Yunyang Ad Co., Ltd. obtained the qualification of "HNTE" with a preferential enterprise income tax rate of 15% for the period from 2016 to 2018.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

11. Taxation (continued)

Withholding tax on undistributed dividends

The CIT law also imposes a withholding income tax of 10% on dividends distributed by a 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 is incorporated, does not have such tax treaty with China. According to the arrangement between 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). The Group did not record any dividend withholding tax, as Gridsum PRC Holding, the PRC WFOE, has no retained earnings in any of the periods presented.

The following table sets forth the component of income tax expenses of the Group for the years ended December 31, 2016, 2017 and 2018:

	For the Year Ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Current tax expenses	21,919	15,571	12,839
Deferred tax recovery	(7,118)	(11,296)	(28,004)
Income tax expenses/(benefit)	14,801	4,275	(15,165)

Reconciliation of the differences between PRC statutory income tax rate and the Group's effective income tax rate for the years ended December 31, 2016, 2017 and 2018 is as follows:

	For the year ended December 31,		
	2016	2017	2018
	%	%	%
PRC statutory tax rate	25.0	25.0	25.0
Effect of overseas tax-exempt entities	(59.4)	(15.5)	(15.9)
Effect of tax holidays	16.9	(3.1)	(3.0)
Effect of lower tax rate entities	(0.2)	(0.1)	(0.1)
Permanent book-tax differences	1.6	(0.5)	(0.2)
Changes in valuation allowance	(0.7)	(4.3)	(2.8)
Change of tax rate	(0.7)	(3.0)	0.0
Withholding tax	(0.2)	(0.3)	(0.1)
Effective tax rate	(17.7)	(1.8)	2.9

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

11. Taxation (continued)

(c) Deferred tax assets and liabilities

The following table sets forth the significant components of the aggregate deferred tax assets and liabilities:

	As of December 31,		
	2016 RMB	2017 RMB	2018 RMB
Deferred tax assets			
Education expense	49	10	8
Advertising expense	—	179	423
Provision for bad debt	3,148	7,186	9,665
Accrued expense	253	159	367
Charitable donation	—	910	2,046
Capitalized R&D in PRC tax return	6,123	13,160	13,160
Intangible assets under PRC Law	1,218	1,364	3,905
Loss carry-forward	19,236	28,747	65,448
Total deferred tax assets	30,027	51,715	95,022
Less: Valuation allowance	22,909	33,323	48,663
Total deferred tax assets, net	7,118	18,392	46,359
Deferred tax liabilities	—	—	—
Intangible assets from acquisitions	—	249	212
Total deferred tax liabilities, net	—	249	212

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

11. Taxation (continued)

As of December 31, 2018, the Group had net operating loss carryforwards of approximately RMB13,591 attributable to the Hong Kong subsidiary and of approximately RMB401,775 attributable to the PRC subsidiaries, VIEs and VIEs' subsidiaries. The loss carried forward by the Hong Kong subsidiary can be carried forward to net against future taxable income without a time limit, while the loss carried forward by the PRC companies will expire from 2018 to 2027.

A 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 foreseeable future. In making such determination, the Group evaluates a variety of factors including the Group's operating history, accumulated deficit, existence of taxable temporary differences and reversal periods.

The changes in valuation allowance for the years ended December 31, 2016, 2017 and 2018 are as follows:

	As of December 31,		
	2016 RMB	2017 RMB	2018 RMB
Balance at beginning of the year	22,301	22,909	33,323
Provision	608	10,414	15,340
Balance at end of the year	<u>22,909</u>	<u>33,323</u>	<u>48,663</u>

12. Redeemable Convertible Preferred Shares

In September 2010, the Company issued 3,125,000 Series A convertible and redeemable preferred shares for an aggregate proceeds of RMB35,707 (US\$5,250).

In July 2011, the Company issued 1,302,084 Series A-1 convertible and redeemable preferred shares for aggregate proceeds of RMB24,251 (US\$3,750).

In October 2013, the Company issued 2,962,239 Series B convertible and redeemable preferred shares for aggregate proceeds of RMB107,100 (US\$17,500).

In January and March 2015, the Company issued 4,640,843 Series C convertible and redeemable preferred shares for aggregate proceeds of RMB262,561 (US\$42,000).

In September 2016, all of the Series A, Series A-1, Series B and Series C preferred shares were automatically converted into 12,030,166 Class B ordinary shares after the closing of IPO.

The Company has classified the Series A, A-1, B and C preferred shares as mezzanine equity in the consolidated balance sheets as they are contingently redeemable at the option of the holders at any time after September 6, 2017 if a qualified initial public offering has not occurred.

The Company has determined that conversion and redemption features embedded in the Preferred Shares are not required to be bifurcated and accounted for as derivatives, as the economic characteristics and risks of the embedded conversion and redemption features are clearly and closely related to that of the preferred shares. The preferred shares are not readily convertible into cash as there is not a market mechanism in place for trading of the Company's shares.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

12. Redeemable Convertible Preferred Shares (continued)

The Group determined that there was no beneficial conversion feature attributable to any of the preferred shares because the initial effective conversion prices of these preferred shares were higher than the fair value of the Company's ordinary shares at the relevant commitment dates.

In addition, the carrying values of the preferred shares are accreted from the share issuance dates to the redemption value on the earliest redemption dates. The accretions are recorded against retained earnings, or in the absence of retained earnings, by charges against additional paid-in capital. Once additional paid-in capital has been exhausted, additional charges are recorded by increasing the accumulated deficit.

The rights, preferences and privileges of the preferred shares prior to the IPO were as follows:

Redemption Rights

At any time after September 6, 2017 ("Redemption Start Date"), if a qualified initial public offering has not occurred, holders of more than 50% of the then outstanding Series A, A-1, B and C preferred shares may request redemption of the preferred shares of such series. On receipt of a redemption request from the holders, the Company shall redeem all or part, as requested, of the outstanding preferred shares of such series.

If any holder of any series of preferred shares exercises its redemption right, any holder of other series of preferred shares shall have the right to exercise the redemption of its series at the same time.

The redemption price shall be 125% of original issuance price of Series A, Series A1 and Series B preferred shares, 110% of original issuance price of Series C preferred shares, plus all declared but unpaid dividends up to redemption closing date. The Group shall execute and deliver to each Series A, A1, B and C preferred shares holders a promissory note for the full amount of the redemption payment due but not paid. That such promissory note shall be due and payable no later than one year anniversary of the closing date of the redemption and shall accrue interest daily at a rate of ten percent per annum.

Conversion Rights

Prior to the IPO, each preferred share was convertible, at the option of the holder, at any time after the date of issuance of such preferred shares, according to a conversion ratio, subject to adjustments for dilution, including but not limited to stock splits, stock dividends and capitalization and certain other events. Each preferred share is convertible into a number of ordinary shares determined by dividing the applicable original issuance price by the conversion price. The conversion price of each preferred share was the same as its original issuance price and no adjustments to conversion price had occurred. At December 31, 2015, each preferred share was convertible into one ordinary Class B share.

Each preferred share was automatically converted into ordinary share, at a conversion ratio of one preferred share to one Class B ordinary share, upon closing of the qualified initial public offering, which occurred on September 23, 2016.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

12. Redeemable Convertible Preferred Shares (continued)

Prior to the Series B preferred shares issuance on October 1, 2013, a “Qualified Initial Public Offering” was defined as an initial public offering with net offering proceeds no less than US\$30 million and implied market capitalization of the Company of no less than US\$160 million prior to such initial public offering. Upon the issuance of the Series B preferred shares, the net offering proceeds and market capitalization criteria for a “Qualified Initial Public Offering” was increased to US\$100 million and US\$235 million, respectively. Upon the issuance of the Series C preferred shares, the market capitalization criterion for a “Qualified Initial Public Offering” was increased to US\$360 million. An extraordinary general meeting held in August 2016, the shareholders of the Company passed a special resolution to amend (the “August 2016 Amendment”) the definition of QIPO in the fourth amended and restated memorandum and articles of association of the Company by replacing the existing definition of QIPO with the following: “QIPO means the closing of the first firm commitment fully underwritten public offering of Ordinary Shares of the Company and the listing of such Ordinary Shares on the New York Stock Exchange, the Nasdaq Global Market System, the Main Board of the Hong Kong Stock Exchange, Shanghai Stock Exchange, Shenzhen Stock Exchange or any other reputable international exchange or quotation system that is approved in writing by the Preferred Shareholder Majority.”

Voting rights

Each preferred share shall be entitled to that number of votes corresponding to the number of ordinary shares on an as-converted basis. Preferred shares shall vote separately as a class with respect to certain specified matters. Otherwise, the holders of preferred shares and ordinary shares shall vote together as a single class.

Dividend Rights

Preferred shares holders shall be entitled to receive dividends if declared by the Board of Directors, in an amount equal to 10% of the original issuance price of the respective series of preferred shares per annum, prior and in preference to any dividend on the ordinary shares. The dividends for Series A, Series A-1, Series B Preferred Shares shall be accruing and cumulative and non-compounding. The dividends for Series C Preferred Shares shall be non-cumulative and non-compounding.

The remaining undistributed earnings of the Company after full payment of the above amounts on the preferred shares, shall be distributed on a prorated basis to the holders of ordinary shares and preferred shares on as-if-converted basis.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

12. Redeemable Convertible Preferred Shares (continued)

Liquidation Preferences

Upon any liquidation event, including deemed liquidation, dissolution or winding up of the Company, the assets of the Group shall be distributed in the following order:

- (i) First, before any distribution or payment to holders of Series A, A-1 and B preferred shares or ordinary shares, each holder of the Series C preferred shares shall be entitled to receive an amount per share equal to 100% of the Series C preferred shares original issuance price, plus all dividends declared but unpaid with respect thereto.
- (ii) Second, following payment in full of the Series C preferred shares amount, but before any distribution or payment to Series A and Series A-1 preferred shares and ordinary shareholders, each holder of the Series B preferred shares shall be entitled to receive an amount per share equal to 125% of the Series B preferred shares original issuance price, plus all dividends accrued but unpaid with respect thereto.
- (iii) Third, following payment in full of the Series C and Series B preferred shares amount, but before any distribution or payment to ordinary shareholders, each holder of the Series A and Series A-1 preferred shares shall be entitled to receive an amount per share equal to 150% of the Series A or Series A-1 preferred shares original issuance price, plus all dividends accrued but unpaid with respect thereto.
- (iv) If there are assets of the Company available for distribution after payment of the above items i), ii), and iii) the remaining assets shall be distributed ratably among the holders of ordinary shares and preferred shares on an as if converted basis.

13. Ordinary Shares

As of December 31, 2017 and 2018, the Company is authorized to issue a maximum of 200,000,000 ordinary shares, comprised of 20,000,000 Class A ordinary shares with a par value of US\$0.001 per share and 180,000,000 Class B ordinary shares with a par value of US\$0.001 per share. Holders of Class A ordinary shares and Class B ordinary shares have the same rights except for voting and conversion rights. The holders of Class A Ordinary Shares shall have ten votes in respect of each Class A Ordinary Share held, the holders of Class B Ordinary Shares shall have one vote in respect of each Class B Ordinary Share held. Each Class A ordinary share is convertible into one Class B ordinary share at any time by the holder thereof. Class B ordinary shares are not convertible into Class A ordinary shares under any circumstances.

On September 23, 2016, the Company completed its IPO in which the Company newly issued 7,705,000 Class B ordinary shares and all of the Company's Series A, Series A-1, Series B and Series C preferred shares were automatically converted into 12,030,166 Class B ordinary shares.

As of December 31, 2017 and 2018, 4,543,461 Class A Ordinary Shares were issued and outstanding. As of December 31, 2017 and 2018, 26,280,367 and 26,289,929 Class B Ordinary Shares were issued and outstanding, respectively.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

14. Share-based Compensation

In March 2017, the Group amended its employment-related stock option plan, which the Group originally adopted in 2011 and amended in 2014 (the “Stock Option Plan”) under which 2,500,000 Class B ordinary shares are available for issuance. The Stock Option Plan will terminate automatically in 2022, unless terminated earlier.

In March 2017, the Group also amended its Equity incentive plan, which the Group originally adopted in 2016 (“2017 Equity Incentive Plan”) under which 2,500,000 ordinary shares are available for issuance in 2017 and the number of shares available for grant and issuance under the 2017 Equity Incentive Plan shall be increased on January 1, of each of the calendar years 2017 through 2026, by the lesser of (a) two and one-half percent (2.5%) of the number of ordinary shares issued and outstanding on each December 31 immediately prior to the date of increase or (b) such number of Shares determined by the Board. The Stock Option Plan will terminate automatically in 2022, unless terminated earlier. The awards under the 2017 Equity incentive plan include share options, restricted shares, share bonus, share appreciation rights, restricted share units and performance awards.

Share-based compensation expenses for the total share-based awards which are based on service conditions are recognized using the straight-line attribution approach. For the years ended December 31, 2016, 2017 and 2018, the Group recognized total share-based compensation expenses of RMB10,630, RMB22,927 and RMB39,026, respectively.

Share Options

During 2017, the Group granted 1,320,000 stock options with an average exercise price of US\$10.11 per share under the Stock Option Plan. All of the options were to be vested over four years, one fourth (1/4) vesting and exercisable upon the first anniversary of the date of grant, and the remaining vesting monthly thereafter in 36 equal monthly installments.

During 2018, the Group granted 320,000 stock options with an average exercise price of US\$6.34 per share under the Stock Option Plan. All of the options were to be vested over four years, one fourth (1/4) vesting and exercisable upon the first anniversary of the date of grant, and the remaining vesting monthly thereafter in 36 equal monthly installments.

Valuation Assumptions: The Group estimated the fair value of stock options using the binominal option-pricing model with assistance from an independent valuation firm. The fair value of each option grant is estimated on the date of grant with the following assumptions:

	For the year ended December 31,		
	2016	2017	2018
Exercise price	—	US\$10.11	US\$6.34
Risk free rate of interest	—	3.14%	3.02%
Dividend yield	—	—	—
Life of option (years)	—	10	10
Volatility	—	46%	56%

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

14. Share-based Compensation (continued)

The Group estimated the risk free rate based on the yield to maturity of U.S. treasury bonds denominated in U.S. Dollars at the option valuation date. The exercise multiple is estimated as the ratio of fair value of underlying shares over the exercise price as at the time the option is exercised, based on a consideration of research study regarding exercise pattern based on historical statistical data. Expected term is the contract life of the option. The expected volatility at the date of grant date and each option valuation date was estimated based on the historical stock prices of comparable companies. The Group has never declared or paid any cash dividends on its capital stock, and the Group does not anticipate any dividend payments on its ordinary shares in the foreseeable future.

A summary of the Group's stock option activities for the years ended December 31, 2016, 2017 and 2018 is presented below:

	Number of Options	Weighted Average Exercise Price US\$	Weighted Average Remaining Contractual Life In years	Aggregate Intrinsic Value US\$
Outstanding as of December 31, 2015	2,499,161	\$ 0.42	7.28	28,540
Granted	—	—	—	—
Forfeited/expired	(62,500)	\$ 0.42	—	—
Outstanding as of December 31, 2016	<u>2,436,661</u>	\$ 0.42	6.24	34,423
Granted	1,320,000	\$ 10.11	—	—
Forfeited/expired	(44,606)	\$ 0.42	—	—
Exercise	(1,088,647)	\$ 0.42	—	—
Outstanding as of December 31, 2017	<u>2,623,408</u>	\$ 5.48	7.15	25,781
Granted	320,000	\$ 6.34	—	—
Forfeited/expired	(138,829)	\$ 9.49	—	—
Exercise	(9,317)	\$ 0.42	—	—
Outstanding as of December 31, 2018	<u>2,795,262</u>	\$ 5.15	6.45	8,763
Exercisable as of December 31, 2018	<u>1,841,706</u>	\$ 3.37	5.44	5,774

The weighted average grant date fair value of options granted for the year ended December 31, 2016, 2017 and 2018 was nil, US\$4.93 and US\$4.31, respectively. For the years ended December 31, 2016, 2017 and 2018, total share-based compensation expenses recognized by the Group for the share options granted were RMB10,630, RMB22,927 and RMB16,751, respectively. As of December 31, 2016, 2017 and 2018, there was RMB17,467, RMB38,300 and RMB29,200 of total unrecognized compensation expense, adjusted for estimated forfeitures, related to non-vested share-based compensation arrangement under the Stock Option Plan, respectively. These expense are expected to be recognized over a weighted average period of 1.01 years, 2.1 years and 1.27 years as of December 31, 2016, 2017 and 2018, respectively. Total unrecognized compensation expense may be adjusted for future changes in estimated forfeitures.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

14. Share-based Compensation (continued)

Restricted Stock Units

During 2018, the Group granted 651,117 restricted stock units (“RSU”). RSU are share awards that, upon vesting, will deliver to the holder shares of the Group’s ordinary shares. All of the RSU were to be vested over four years, one fourth (1/4) vesting and exercisable upon the first anniversary of the date of grant, and the remaining vesting monthly thereafter in 36 equal monthly installments. The Group satisfies RSU vesting through the issuance of new shares or settle by cash.

Share-based compensation expenses for the total share-based awards which are based on service conditions are recognized using the straight-line attribution approach. For the years ended December 31, 2016, 2017 and 2018, the Group recognized share-based compensation expenses of nil, nil and RMB22,275 respectively, for the restricted stock units.

A summary of the Group’s restricted stock activity for the years ended December 31, 2016, 2017 and 2018 is presented below:

	Number of RSU	Weighted Average Grant date fair value US\$
Outstanding as of December 31, 2016	—	\$ —
Awarded	936,999	\$ 9.75
Vested	(300)	\$ 11.24
Outstanding as of December 31, 2017	936,699	\$ 9.75
Awarded	651,117	\$ 8.62
Forfeited	(180,620)	\$ 9.77
Vested	(354,982)	\$ 8.61
Outstanding as of December 31, 2018	1,052,214	\$ 9.43

15. Business Combination

On May 31, 2017, the Group’s VIE, Gridsum Holding (Beijing) Co., Ltd., acquired Zhixun from three individual shareholders (“Previous Shareholders”) with a purchase price of RMB2.5 million and RMB7.5 million for continuing employment compensation for the Previous Shareholders for the next three years. The Group funded the acquisition with its own working capital. The Group believes that the acquisition will allow it to better manage opportunities and capitalize on the growth potential in the market for applications related to customer relationship management.

The transaction was accounted for as a business combination using the purchase method of accounting. The purchase price allocation of the transaction was determined by the Group with the assistance of an independent appraisal firm based on the estimated fair value of the assets acquired and liabilities assumed as of the acquisition date. The purchase price allocation to assets acquired and liabilities assumed as of the date of acquisition was as follows:

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

15. Business Combination (continued)

	<u>May 31,</u> <u>2017</u> <u>RMB</u>
Cash acquired	643
Prepayment, deposit and other assets	335
Property, equipment and software, net	888
Customer relationship	677
Accrued expense, other payable and other current liabilities	(309)
Deferred tax liability	(271)
Goodwill	<u>537</u>
Total	<u><u>2,500</u></u>

The customer relationship represents a long term relationship with a large enterprise customers with an estimated useful life of 10 years. The goodwill is mainly attributable to the excess of the consideration paid over the fair value of the net assets acquired that cannot be recognized separately as identifiable assets under U.S. GAAP, and comprise (a) the assembled work force and (b) the expected but unidentifiable business growth as a result of the synergy resulting from the acquisition.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

16. Net Loss per Share

The following table sets forth the basic and diluted net loss per share computation and provides a reconciliation of the numerator and denominator for the periods presented:

	For the year ended December 31,		
	2016 RMB	2017 RMB	2018 RMB
Numerator:			
Net loss attributable to Gridsum Holding Inc.	(98,574)	(238,996)	(521,325)
Accretion to convertible redeemable preferred share redemption value—A	(1,033)	—	—
Accretion to convertible redeemable preferred share redemption value—A-1	(830)	—	—
Accretion to convertible redeemable preferred share redemption value—B	(6,573)	—	—
Accretion to convertible redeemable preferred share redemption value—C	(8,289)	—	—
Cumulative dividend to convertible redeemable preferred shareholders—A	(2,571)	—	—
Cumulative dividend to convertible redeemable preferred shareholders—A-1	(1,837)	—	—
Cumulative dividend to convertible redeemable preferred shareholders—B	(8,582)	—	—
Numerator for basic and diluted net loss per share	(128,289)	(238,996)	(521,325)
Denominator:			
Weighted average number of ordinary shares outstanding, basic and diluted	15,054,865	30,243,250	30,827,600
Net loss per share attributable to Gridsum's ordinary shareholders—Basic and diluted	(8.52)	(7.90)	(16.91)

Basic net loss per share is computed using the weighted average number of the ordinary shares outstanding during the period. Diluted net loss per share is computed using the weighted average number of ordinary shares and dilutive ordinary share equivalents outstanding during the period. For the years ended December 31, 2016, 2017 and 2018, options to purchase ordinary shares that were anti-dilutive and excluded from the calculation of diluted net loss per share was 2,158,602, 1,605,961 and 2,754,327 on a weighted average basis, respectively. For the years ended December 31, 2016, 2017 and 2018, the Series A, Series A-1, Series B and Series C Preferred Shares of nil, nil and nil, respectively, on a weighted average basis were also antidilutive and excluded from the calculation of diluted net loss per share. For the years ended December 31, 2016, 2017 and 2018, the conversion shares from the Group's convertible note of nil, nil and 4,080,084, respectively, on a weighted average basis were also antidilutive and excluded from the calculation of diluted net loss per share.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

17. Commitments and Contingencies

(a) Commitment

The Group leases its offices and facilities under non-cancelable operating lease agreements. Rental expenses were RMB28,664 and RMB35,553 and RMB60,841 for the years ended December 31, 2016, 2017 and 2018, respectively.

As of December 31, 2018, future minimum lease under non-cancelable operating lease and other agreements were as follows:

	Rental commitments	Other commitments	Total
	RMB	RMB	RMB
2019	45,428	20,359	65,787
2020	38,468	12,296	50,764
2021	36,188	3,362	39,550
2022 and thereafter	43,273	1,768	45,041
	<u>163,357</u>	<u>37,785</u>	<u>201,142</u>

(b) Litigation

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 reasonably possible to have a material adverse effect on the Group's financial position, results of operations or cash flows. However, litigation is subject to inherent uncertainties and the Group's view of these matters may change in the future. Were an unfavorable outcome to occur, there exists the possibility of a material adverse impact on the Group's financial position, results of operations or cash flows for the period in which the unfavorable outcome occurs and potentially in future periods.

On April 25, 2018 and June 25, 2018, purported securities class action complaints were filed in the United States District Court for the Southern District of New York against the Company, Guosheng Qi and Michael Peng Zhang, among other defendants. These lawsuits, which are captioned Xu v. Gridsum Holding Inc., et al., Case No. 18-CV-3655, and Li v. Gridsum Holding Inc., et al., Case No. 18-CV-5749, alleged, among other things, that "false and/or misleading statements" were made "and/or" the Company failed to disclose its lack of effective controls over financial reporting, in connection with Gridsum's announcement on April 23, 2018 that its financial statements for the year ended December 31, 2016 should no longer be relied upon. On September 17, 2018, the court appointed a lead plaintiff pursuant to the Private Securities Litigation Reform Act of 1995 and ordered the lawsuits consolidated. A consolidated amended complaint was filed on November 30, 2018 that variously alleges violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, Rule 10b-5 of the Securities Exchange Act of 1934, and Sections 11 and 15 of the Securities Act for a putative class period from September 22, 2016 to April 20, 2018, against the Company and its current and former officers and directors, among other defendants. On March 1, 2019, the lead plaintiff filed a second amended class action complaint, or the SAC. The court has entered a schedule for the defendants' motions to dismiss the SAC, and the briefing on defendants' motions is now underway.

On July 2, 2018, a third purported securities class action complaint was filed in the Supreme Court of the State of New York against Gridsum and certain of its current and former directors and executive officers, among other defendants, variously alleging violations of Sections 11, 12(a)(2), and 15 of the Securities Act against them. The lawsuit, captioned, Gordon v. Gridsum Holding Inc., et al., Index No. 18-653342, is brought on behalf of a putative class of shareholders who "purchased or otherwise acquired" ADSs in Gridsum's initial public offering on September 23, 2016, and are based on substantially the same allegations as the consolidated proceeding described above. On January 22, 2019, an amended complaint was filed. On April 10, 2019, the court granted the Company's motion to stay this action pending the determination of the federal action, and this action remains stayed. The Company believes that the claims against it are without merit and intends to vigorously defend against the litigation.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

18. Restricted Net Assets

Relevant PRC laws and regulations permit payments of dividends by the subsidiaries and the 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, each of the Company's subsidiaries and VIEs is required to annually appropriate 10% of net after-tax income to the statutory general reserve fund (Note 2(z)) prior to payment of any dividends, unless such reserve funds have reached 50% of its respective registered capital. For the years ended December 31, 2017 and 2018, the statutory reserve amounted to RMB 6,730 and RMB12,903 respectively. As a result of these and other restrictions under PRC laws and regulations, the subsidiaries, VIEs and VIE subsidiaries 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 of the Group's total consolidated net assets. As of December 31, 2017 and 2018, the total restricted net assets of the Company's subsidiaries, VIEs and VIE subsidiaries incorporated in PRC and subjected to restriction amounted to approximately RMB110,880 and RMB177,408, respectively. Even though the Group 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 its shareholders. Except for the above, there is no other restriction on the use of proceeds generated by the Group's subsidiaries, VIEs and VIE subsidiaries to satisfy any obligations of the Group.

19. Subsequent Events

On March 4, 2019, the Company issued and sold an aggregate of 3,461,902 Class B ordinary shares to certain equity investment firms in a private placement transaction for an aggregate price of approximately US\$11.1 million, or US\$3.20 per share price.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

ADDITIONAL INFORMATION: CONDENSED FINANCIAL STATEMENTS OF PARENT COMPANY

Rules 12-04(a) and 4-08(e)(3) of Regulation S-X require condensed financial information as to the financial position, cash flows and results of operations of a parent company as of and for the same periods for which the audited consolidated financial statements have been presented when the restricted net assets of the consolidated and unconsolidated subsidiaries together exceed 25% of consolidated net assets as of the end of the most recently completed fiscal year.

The following condensed financial statements of the Company have been prepared using the same accounting policies as set out in the Company's consolidated financial statements except that the Company used the equity method to account for its investment in its subsidiaries and VIEs. Such investment is presented on the separate condensed balance sheets of the Company as "Investment in subsidiaries and VIEs" and "Accumulated losses in excess of investment in subsidiaries and VIEs." The Company, its subsidiaries and VIEs were included in the consolidated financial statements whereby the inter-company balances and transactions were eliminated upon consolidation. The Company's share of income from its subsidiaries and VIEs is reported as share of income from subsidiaries and VIEs in the condensed financial statements.

The Company is a Cayman Islands company and, therefore, is not subjected to income taxes for all years presented. The footnote disclosures contain supplemental information relating to the operations of the Company and, as such, these statements should be read in conjunction with the notes to the consolidated financial statements of the Company. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted.

As of December 31, 2017 and 2018, there were no material commitments or contingencies, significant provisions for long-term obligations or guarantees of the Company, except for those which have been separately disclosed in the consolidated financial statements, if any.

Inter-company charges, share-based compensation and other miscellaneous expenses for the years ended December 31, 2016, 2017 and 2018, which were previously recognized at the parent company level, had been pushed down to the WFOE/VIE level given the majority of services were provided to the WFOE/VIE entities.

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

Condensed Balance Sheets of Parent Company

	As of December 31,		
	2017 RMB	2018 RMB	2018 US\$
ASSETS			
Current assets:			
Cash and cash equivalents	27,355	4,493	653
Amounts due from subsidiaries and VIEs	518,976	55,460	8,066
Prepayments and other current assets	7,085	9,982	1,453
Total current assets	553,416	69,935	10,172
Non-current assets:			
Investment in subsidiaries and VIEs	—	—	—
Total non-current assets	—	—	—
Total assets	553,416	69,935	10,172
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Accrued expenses and other current liabilities	19,728	23,476	3,415
Total current liabilities	19,728	23,476	3,415
Total liabilities	19,728	23,476	3,415
Commitments and contingencies			
Shareholders' equity			
Ordinary shares—Class A (US\$0.001 par value; 20,000,000 shares authorized, 4,543,461 shares issued and outstanding as of December 31, 2017 and 2018, respectively)	31	31	5
Ordinary shares—Class B (US\$0.001 par value; 180,000,000 shares authorized, 26,280,367 and 26,289,929 shares, issued and outstanding as of December 31, 2017 and 2018, respectively)	176	177	26
Additional paid-in capital	1,107,201	1,146,253	166,715
Statutory Reserve	6,730	12,903	1,877
Accumulated other comprehensive loss	(30,539)	(35,496)	(5,163)
Accumulated deficit	(549,911)	(1,077,409)	(156,703)
Gridsum's shareholders' equity	533,688	46,459	6,757
Total liabilities and shareholders' equity	553,416	69,935	10,172

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

Condensed Statements of Operations and Comprehensive Loss of Parent Company

	For the year ended December 31,			
	2016 RMB	2017 RMB	2018 RMB	2018 US\$
Revenues	—	—	—	—
Cost of revenues	—	—	—	—
Gross profit	—	—	—	—
Operating expenses:				
Sales and marketing expenses	—	—	—	—
Research and development expenses	—	—	—	—
General and administrative expenses	(802)	(872)	(53)	(8)
Total operating expenses	(802)	(872)	(53)	(8)
Loss from operations	(802)	(872)	(53)	(8)
Loss from subsidiaries and VIEs	(97,772)	(238,124)	(521,272)	(75,816)
Net loss	(98,574)	(238,996)	(521,325)	(75,824)
Accretions to preferred shares redemption value	(16,725)	—	—	—
Cumulative dividend to preferred shareholders	(12,990)	—	—	—
Net loss attributable to Gridsum's ordinary shareholders	(128,289)	(238,996)	(521,325)	(75,824)
Comprehensive loss	(89,704)	(259,576)	(527,502)	(76,722)

GRIDSUM HOLDING INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (continued)

(In thousands, except for share and per share data)

Condensed Statements of Cash Flows of Parent Company

	2016 RMB	For the Year Ended December 31,		
		2017 RMB	2018 RMB	2018 US\$
Cash flows from operating activities:				
Net cash provided by/(used in) operating activities	(188,097)	2,424	(10,753)	(1,564)
Cash Flows from investing activities:				
Investment of subsidiaries and VIEs	(103,298)	(291,008)	(12,136)	(1,765)
Net cash used in investing activities	(103,298)	(291,008)	(12,136)	(1,765)
Cash flows from financing activities:				
Proceeds from issuance of Series C preferred shares	—	—	—	—
Proceeds from issuance of ordinary shares	615,032	3,091	27	4
Payment of financing costs in connection with the issuance of Series C preferred shares	—	—	—	—
Payment for IPO costs	(27,043)	(3,362)	—	—
Net cash provided by (used in) financing activities	587,989	(271)	27	4
Net increase/(decrease) in Cash, cash equivalents and restricted cash	296,594	(288,855)	(22,862)	(3,325)
Cash, cash equivalents and restricted cash at the beginning of the year	19,616	316,210	27,355	3,978
Cash, cash equivalents and restricted cash at the end of the year	316,210	27,355	4,493	653
Supplemental schedule of non-cash financing activities:				
Accretions to preferred shares redemption value	16,725	—	—	—

LIST OF SIGNIFICANT SUBSIDIARIES AND CONSOLIDATED AFFILIATED ENTITIES

All significant subsidiaries and consolidated affiliated entities do business under their legal name.

Significant Subsidiaries

<u>Name of Company</u>	<u>Jurisdiction of Incorporation</u>	<u>Percentage of Attributable Equity Interests</u>
Gridsum Holding (China) Limited	Hong Kong	100%
Dissector (Beijing) Technology Co., Ltd.	PRC	100%

Affiliated Entities Consolidated in the Registrant's Financial Statements

<u>Name of Company</u>	<u>Jurisdiction of Incorporation</u>	<u>Percentage of Attributable Equity Interests</u>
Gridsum Holding (Beijing) Co., Ltd.	PRC	100%
Beijing Gridsum Technology Co., Ltd.	PRC	100%
Guoxinjunhe (Beijing) Technology Co., Ltd.	PRC	100%
Beijing Moment Everlasting Ad Co., Ltd.	PRC	100%
Beijing Gridsum Yizhun Technology Co., Ltd.	PRC	100%
Beijing Guoxinwangyan Technology Co., Ltd.	PRC	100%
Beijing Yunyang Ad Co., Ltd.	PRC	100%
Beijing Zhixunyilong Software Co., Ltd.	PRC	100%
Beijing Hainatianchuang Technology Development Co., Ltd.	PRC	51%
Beijing Gridsum Wang'an Technology Co., Ltd.	PRC	100%

CERTIFICATION

I, Guosheng Qi, certify that:

1. I have reviewed this annual report on Form 20-F of Gridsum Holding Inc.;
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 officers 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 the 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 officers 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.

Dated: April 24, 2019

By: /s/ Guosheng Qi

Name: Guosheng Qi

Title: Chief Executive Officer

CERTIFICATION

I, Michael Peng Zhang, certify that:

1. I have reviewed this annual report on Form 20-F of Gridsum Holding Inc.;
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 officers 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 the 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 officers 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 24, 2019

By: /s/ Michael Peng Zhang

Name: Michael Peng Zhang

Title: Co-Chief Financial Officer

CERTIFICATION

I, Ravi Sarathy, certify that

1. I have reviewed this annual report on Form 20-F of Gridsum Holding Inc.;
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 officers 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 the 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 officers 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 24, 2019

By: /s/ Ravi Sarathy

Name: Ravi Sarathy

Title: Co-Chief Financial Officer

CERTIFICATION

In connection with the annual report of Gridsum Holding Inc. (the “Company”) on Form 20-F for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Guosheng Qi, Chief Executive Officer 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:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 24, 2019

By: /s/ Guosheng Qi

Name: Guosheng Qi

Title: Chief Executive Officer

CERTIFICATION

In connection with the annual report of Gridsum Holding Inc. (the "Company") on Form 20-F for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael Peng Zhang, Co-Chief Financial Officer 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:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 24, 2019

By: /s/ Michael Peng Zhang

Name: Michael Peng Zhang

Title: Co-Chief Financial Officer

CERTIFICATION

In connection with the annual report of Gridsum Holding Inc. (the "Company") on Form 20-F for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ravi Sarathy, Co-Chief Financial Officer 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:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 24, 2019

By: /s/ Ravi Sarathy
Name: Ravi Sarathy
Title: Co-Chief Financial Officer

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-216798 and No. 333-229318) of Gridsum Holding Inc. of our report dated April 24, 2019 relating to the financial statements, which appears in this Form 20-F.

/s/ Shandong Haoxin Certified Public Accountants Co., Ltd.

Shandong Haoxin Certified Public Accountants Co., Ltd.

Weifang, the People's Republic of China

April 24, 2019

CONSENT OF MERITS & TREE LAW OFFICES

April 24, 2019

Gridsum Holding Inc.
South Wing, High Technology Building
No. 229 North 4th Ring Road
Haidian District, Beijing 100083
People's Republic of China

Dear Sirs,

We consent to the reference to our firm under the heading "Item 4. Information on the Company – C. Organizational Structure" in the Annual Report of Gridsum Holding Inc. on Form 20-F for the year ended December 31, 2018 (the "Annual Report"), which will be filed with the Securities and Exchange Commission (the "SEC"), and further consent to the incorporation by reference of such reference into the Registration Statements on Form S-8 (No. 333-216798 and No. 333-229318) of Gridsum Holding Inc. We also consent to the filing with the SEC of this consent letter as an exhibit to the Annual Report.

Yours faithfully,

/s/ Merits & Tree Law Offices

Merits & Tree Law Offices