

**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, 2019
- 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: 000-30540

GIGAMEDIA LIMITED

(Exact name of registrant as specified in its charter)

N/A

(Translation of Registrant's name into English)

REPUBLIC OF SINGAPORE

(Jurisdiction of incorporation or organization)

8 TH FLOOR, NO. 22, LANE 407, SECTION 2 TIDING BOULEVARD, TAIPEI, TAIWAN, R.O.C.

(Address of principal executive offices)

CHENG-MING HUANG, Chief Executive Officer

8 TH FLOOR, NO. 22, LANE 407, SECTION 2 TIDING BOULEVARD, TAIPEI, TAIWAN, R.O.C.

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

<u>Title of Each Class</u>	<u>Trading Symbol</u>	<u>Name of Each Exchange on Which Registered</u>
Ordinary Shares	GIGM	The Nasdaq Stock Market LLC

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

11,052,235 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 annual 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 the definitions of “large accelerated filer,” “accelerated filer,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.:

Large accelerated filer Accelerated filer
Non-accelerated filer Emerging growth company

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

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

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

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

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

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

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CERTAIN TERMS AND CONVENTIONS

In this annual report, all references to

- (i) “we,” “us,” “our,” “our Company” or “GigaMedia” are to GigaMedia Limited and, unless the context requires otherwise, its subsidiaries, or where the context refers to any time prior to the incorporation of any of its subsidiaries, the businesses which predecessors of the present subsidiaries were engaged in and which were subsequently assumed by such subsidiaries;
- (ii) “Shares” are to ordinary shares of our Company;
- (iii) “FunTown” are to our digital entertainment service business operated through our two operating subsidiaries, Hoshin GigaMedia and FunTown World Limited; and
- (iv) “GigaMedia Cloud” are to GigaMedia Cloud Services Co. Ltd., a wholly owned subsidiary incorporated under the laws of Taiwan;
- (v) “Hoshin GigaMedia” are to Hoshin GigaMedia Center Inc., a company incorporated under the laws of Taiwan, Republic of China (“Taiwan” or “R.O.C.”).

For the purpose of this annual report only, geographical references to “China” and the “PRC” are to the People’s Republic of China and do not include Taiwan, the Hong Kong Special Administrative Region (“Hong Kong”) or the Macau Special Administrative Region (“Macau”). Except if the context otherwise requires, and for the purpose of this annual report only, references to “Greater China” include the PRC, Taiwan, Hong Kong and Macau. References to “Korea” or “South Korea” are to the Republic of Korea.

All references in this annual report to “U.S. dollar,” “\$” or “US\$” are to the legal currency of the United States; all references to “NT dollar” or “NT\$” are to the legal currency of Taiwan; all references to “RMB,” “Rmb” or “Renminbi” are to the legal currency of the PRC; all references to “Hong Kong dollar” or “HK\$” are to the legal currency of Hong Kong; all references to “Korean won” or “KRW” are to the legal currency of the Republic of Korea and all references to “Singapore dollar” or “S\$” are to the legal currency of the Republic of Singapore.

We have approximated certain numbers in this annual report to their closest round numbers or a given number of decimal places. Due to rounding, figures shown as totals in tables may not be arithmetic aggregations of the figures preceding them.

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This annual report includes “forward-looking statements” within the meaning of, and intended to qualify for the safe harbor from liability established by, the United States Private Securities Litigation Reform Act of 1995. These statements, which are not statements of historical fact, may consist of or contain estimates, assumptions, projections and/or expectations regarding future events, which may or may not occur. These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Some of the risks are listed under Item 3, “Key Information — D. Risk Factors” and elsewhere in this annual report. In some cases, you can identify these forward-looking statements by words such as “aim,” “anticipate,” “believe,” “consider,” “continue,” “estimate,” “expect,” “forecast,” “going forward,” “intend,” “ought to,” “plan,” “potential,” “predict,” “project,” “propose,” “seek,” “can,” “could,” “may,” “might,” “will,” “would,” “should,” “shall,” “is likely to” or similar expressions, including their negatives. These forward-looking statements include, without limitation, statements relating to:

- our business plan and strategies;
- our future business development and potential financial condition, results of operations and other projected financial information;
- our ability to manage current and potential future growth;
- expected continued acceptance of our revenue model;
- our plans for strategic partnerships, licenses and alliances;
- our acquisition and strategic investment, and our ability to successfully integrate any past, current, or future acquisitions into our operations;
- our ability to protect our intellectual property rights and the security of our customers’ information;

- the launch of new digital entertainment services according to our timetable;
- expected continued acceptance of our digital entertainment services, including expected growth of the digital entertainment industry, and consumer preferences for our products and services;
- the in-house development of new digital entertainment products;
- our plans to license additional digital entertainment products from third parties, and the launch of these new products, including the timing of any such development, licenses or launches, in various geographic markets;
- our ability to maintain and strengthen our position as one of the largest online MahJong operators in Taiwan;
- the potential entry of new competitors in any of our business lines;
- the outcome of ongoing, or any future, litigation or arbitration;
- our corporate classification by various governmental entities;
- impacts directly and indirectly resulted from disease outbreaks and similar public health threats, in particular, the current escalating coronavirus situation;
- fluctuations in foreign currency rates, in particular, any material appreciation of the NT dollar against the U.S. dollar, and our ability to manage such risks;
- the political stability of our local region; and
- general local and global economic conditions.

These forward-looking statements are based on our own information and on information from other sources we believe to be reliable. Our actual results may differ materially from those expressed or implied by these forward-looking statements as a result of risk factors and other factors noted throughout this annual report, including those described under Item 3, “Key Information — D. Risk Factors” and those detailed from time to time in other filings with the United States Securities and Exchange Commission (the “SEC”). We do not guarantee that the transactions and events described in this annual report will happen as described or that they will happen at all. We undertake no obligation to update or revise any forward-looking statements to reflect events or circumstances after the date of this annual report or to reflect the occurrence of unanticipated events. Whether actual results will conform to our expectations and predictions is subject to a number of risks and uncertainties, many of which are beyond our control, and reflect future business decisions that are subject to change. Given this level of uncertainty, you are advised not to place undue reliance on such forward-looking 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

Exchange Rates

The functional currency of each individual consolidated entity is determined based on the primary economic environment in which the entity operates. While our Company’s consolidated financial statements are presented in U.S. dollars, a large portion of our operations are conducted through subsidiaries located in Taiwan, and therefore adopt NT dollars as their functional currency.

Assets and liabilities reported in our consolidated balance sheets denominated in currencies other than U.S. dollars are translated into U.S. dollars using year-end exchange rates. With respect to NT dollars, the year-end exchange rates used are 29.76, 30.715 and 29.98 to one U.S. dollar as of December 31, 2017, 2018 and 2019, respectively, which are each based on the middle rate quoted by the Bank of Taiwan. Income and expense items reported in our consolidated statements of operations denominated in currencies other than U.S. dollars are translated into U.S. dollars using average exchange rates. Certain other operating financial information denominated in currencies other than U.S. dollars, not included in our consolidated financial statements and provided in this annual report, are translated using average exchange rates.

A. Selected Financial Data

The following selected consolidated balance sheet data as of December 31, 2018 and 2019 and the selected consolidated statement of operations data for the years ended December 31, 2017, 2018 and 2019 have been derived from our audited consolidated financial statements included in Item 18 in this annual report. The selected consolidated balance sheet data as of December 31, 2015, 2016 and 2017, and the selected consolidated statement of operations data for the years ended December 31, 2015 and 2016 have been derived from our audited consolidated financial statements for the years ended December 31, 2015 and 2016, which are not included in this annual report. The consolidated financial statements have been prepared and presented in accordance with accounting principles generally accepted in the United States of America, or U.S. GAAP. You should read the following selected consolidated financial data in conjunction with Item 5, “Operating and Financial Review and Prospects,” and the consolidated financial statements and the accompanying notes to those statements included in this annual report.

For the Years Ended December 31,
(in thousands US\$, except for per share data)

	2015 (As adjusted*)	2016 (As adjusted*)	2017	2018	2019
CONSOLIDATED STATEMENTS OF OPERATIONS DATA:					
OPERATING REVENUES					
Digital entertainment service revenues	\$ 8,545	\$ 8,971	\$ 11,596	\$ 7,101	\$ 6,645
Other revenues	1,706	—	—	—	—
Total operating revenues	10,251	8,971	11,596	7,101	6,645
COSTS OF REVENUES					
Cost of digital entertainment service revenues	(7,018)	(4,138)	(5,098)	(3,585)	(3,064)
Cost of other revenues	(1,871)	—	—	—	—
Total costs of revenues	(8,889)	(4,138)	(5,098)	(3,585)	(3,064)
GROSS PROFIT	1,362	4,833	6,498	3,516	3,581
OPERATING EXPENSES					
Product development and engineering expenses	(688)	(1,045)	(1,072)	(1,091)	(1,186)
Selling and marketing expenses	(8,655)	(5,513)	(3,993)	(3,297)	(1,995)
General and administrative expenses	(5,817)	(3,458)	(3,528)	(3,684)	(3,182)
Impairment loss on property, plant, and equipment	(60)	(471)	—	—	(109)
Impairment loss on intangible assets	(5)	(57)	—	—	(15)
Impairment loss on prepaid licensing and royalty fees	(4,187)	(1,386)	—	(244)	(85)
Termination of proposed acquisition	(2,000)	—	—	—	—
Gain on termination of licensing agreement	—	—	1,732	—	—
Other	(3)	(35)	(127)	(23)	(24)
Total operating expense	(21,415)	(11,965)	(6,988)	(8,339)	(6,596)
Loss from operations	(20,053)	(7,132)	(490)	(4,823)	(3,015)
Net loss on equity investments	(600)	(1,731)	(24)	—	—
Income tax benefit	414	1,149	1,671	—	—
Net income (loss)	(2,288)	(6,066)	1,086	(3,193)	(1,659)
Less: Net loss attributable to the noncontrolling interest	45	—	—	—	—
Net income (loss) attributable to shareholders of GigaMedia	\$ (2,243)	\$ (6,066)	\$ 1,086	\$ (3,193)	\$ (1,659)
Earnings (loss) per share (in dollars):					
Basic and diluted	<u>\$ (0.20)</u>	<u>\$ (0.55)</u>	<u>\$ 0.10</u>	<u>\$ (0.29)</u>	<u>\$ (0.15)</u>

*: The selected consolidated statements of operations for the years ended December 31, 2015 and 2016 were retrospectively adjusted to reflect our Company’s election to early adopt the accounting updated of ASU No. 2017-07, *Compensation-Retirement Benefits*. Accordingly, all components of net periodic pension costs that are other than the service cost, amounting to income of US\$58 thousand and US\$2 thousand, respectively, for 2015 and 2016, were reclassified from general and administrative expenses to non-operating income (expense) –other. Please refer to Note 1 of our consolidated financial statements contained in our previously-filed Annual Report on 20-F for the year ended December 31, 2017 for our retirement plan and net periodic pension cost accounting policy as it affects the presentation of our consolidated statements of operations.

There were no dividends declared in 2015, 2016, 2017, 2018 and 2019.

As of December 31,
(in thousands US\$, except for number of issued shares)

	2015	2016	2017	2018	2019
CONSOLIDATED BALANCE SHEET DATA:					
Total current assets	\$ 74,498	\$ 68,882	\$ 65,511	\$ 60,595	\$ 58,893
Property, plant and equipment-net	1,391	7	158	121	—
Intangible assets-net	88	—	3	38	—
Total assets	81,195	70,327	66,413	61,445	59,222
Total current liabilities	13,482	8,998	5,048	3,273	3,584
Total GigaMedia's shareholders' equity	65,991	59,658	61,365	58,172	55,544
Common shares, no par value, and additional paid-in capital	308,745	308,754	308,747	308,750	308,751
Number of issued shares (in thousands)*	11,052	11,052	11,052	11,052	11,052

*: We executed reverse splits of the issued and outstanding shares by a ratio of five to one on December 16, 2015.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Risks Related to Our Business and Industries

An outbreak of disease or similar public health threat, such as a novel strain of coronavirus, could have a material adverse impact on our business, operating results and financial condition.

We are vulnerable to the general economic effects of disease outbreaks and similar public health threats. Starting in late 2019, there was an outbreak of a novel strain of coronavirus ("COVID-19") in Wuhan, China that has since spread to other regions in China and the rest of the world. It has recently been declared a pandemic by the World Health Organization and is impacting worldwide economic activity. A public health pandemic, including COVID-19, poses the risk that we or our employees, contractors, suppliers, customers and other business partners may be prevented from conducting business activities for an indefinite period of time, including due to shutdowns that may be requested or mandated by governmental authorities. We have offices in Taiwan and Hong Kong, which have, as of the date of this Annual Report, not been as severely affected as compared to other regions in the world. Nonetheless, we have implemented strict hygiene and social distancing practices in our daily operations in order to protect the safety and health of our employees. We have also established a contingency plan to ensure our business continuity against the COVID-19 situation. If the pandemic situation escalates and warrants a prolonged and intensified shutdown in Taiwan or Hong Kong, our daily operations may be further hindered, and our offline marketing activities be indefinitely postponed, which could impact our sales and operating results. The extent to which COVID-19 will impact our results, including the ability of our customers to spend on online entertainment, is dependent on future developments, which are uncertain and unpredictable, including new information which may emerge concerning the severity of COVID-19 and the actions taken to contain it or treat its impact. While it is not possible at this time to estimate the full impact that COVID-19 could have on our business, the continued spread of COVID-19 and the measures taken by the governments of countries affected could adversely impact our business, financial condition or results of operations.

We may not be successful in operating and improving our existing digital entertainment services to satisfy the changing demands and preferences of consumers.

The level of demand and market acceptance of our existing digital entertainment services is subject to a high degree of uncertainty. Our future operating results will depend on numerous factors, many of which are beyond our control. These factors include:

- the popularity of existing and new digital entertainment services operated by us;
- the introduction of new digital entertainment services by us or third parties, competing with or replacing our existing services;

- general economic conditions, particularly economic conditions adversely affecting discretionary consumer spending;
- changes in our customer demands and preferences;
- regulatory and other risks associated with our operations in Taiwan and Hong Kong;
- the availability of other forms of amusement and entertainment; and
- critical reviews and public tastes and preferences, all of which change rapidly and cannot be predicted.

Our ability to plan for product development and distribution and promotional activities will be significantly affected by how well we anticipate and adapt to relatively rapid changes in consumer tastes and preferences. Currently, a substantial portion of our digital entertainment services revenue is derived from revenues from PC-based online games including MahJong games and other casual games offered in Taiwan and Hong Kong by FunTown and the licensed online games such as *Tales Runner*, a multi-player sports game, and *Yume100*, a single player role-playing game. In recent years, revenues from our PC-based games have been in decline, reflecting the overall shift in player preferences away from PC-based games to browser-based games and mobile games. This decline in the popularity of PC-based online games, and declines in the popularity of online games in general, is likely to adversely affect our business, financial condition and results of operations. To maintain competitiveness of our digital entertainment services, we must regularly invest in enhancing, improving, expanding or upgrading our services. If we fail to do so, revenues generated from our existing services will likely decline.

As our services are currently accessed primarily through PC and, increasingly, mobile devices, successful development of services for such devices will be imperative if we are to maintain or increase our revenues, and our inability to do so may result in lower growth of or a decline in revenues.

Devices other than personal computers, such as mobile phones and tablets, are used increasingly to access the Internet. We believe that, for our business to be successful, we will need to develop versions of our existing digital entertainment offerings, our pipeline offerings and any future offerings that work well with such devices. Manufacturers of such devices may establish restrictive conditions for developers of applications to be used on such devices, and as a result our offerings may not work well, or at all, on such devices. As new devices are released or updated, we may encounter problems in developing versions of our offerings for use on such devices and we may need to devote significant resources to the creation, support, and maintenance of games for such devices. If we are unable to successfully expand the types of devices on which our existing and future offerings are available, or if the versions of our offerings that we create for such devices do not function well or are not attractive to consumers, our revenues may fail to grow and may decline.

The digital entertainment industry is characterized by rapid technological change, and failure to respond quickly and effectively to new Internet technologies or standards may have a material adverse effect on our business.

The digital entertainment industry is evolving rapidly. Any new technologies or new standards may require increases in expenditures for development and operations. In addition, we use internally developed software systems that support nearly all aspects of our billing and payment transactions in our digital entertainment service business. All of our businesses may be adversely affected if we are unable to upgrade our systems effectively to accommodate future traffic levels, to avoid obsolescence or to successfully integrate any newly developed or acquired technology with our existing systems. Capacity constraints could cause unanticipated system disruptions and slower responses, which could adversely affect data transmission and service experience. These factors could, among other things, cause us to lose existing or potential users and existing or potential service development partners.

In operating our digital entertainment service business, we may fail to launch new products according to our timetable, and our new products may not be commercially successful.

In order for our digital entertainment service business strategy to succeed over time, we will need to license, acquire or develop new digital entertainment products that can generate additional revenue and further diversify our revenue sources. A number of factors, including technical difficulties, government approvals and licenses of intellectual property right required for launching new products, lack of sufficient development personnel and other resources, and adverse developments in our relationship with the licensors of our new licensed products could result in delay in launching our new products. Therefore, we cannot assure you that we will be able to meet our timetable for new launches.

There are many factors that may adversely affect the popularity of our new products. For example, we may fail to anticipate and adapt to future technical trends and new business models, fail to satisfy consumer preferences and requirements, fail to effectively plan and organize marketing and promotion activities, fail to effectively detect and prevent programming errors or defects in the products, and fail to operate our new products at acceptable costs. We cannot assure you that our new products will gain market acceptance and become commercially successful. If we are not able to license, develop or acquire additional digital entertainment products that are commercially successful, our future revenues and profitability may decline.

Our digital entertainment service business faces intense competition, which may adversely affect our revenues, profitability and planned business expansion.

The digital entertainment market is highly competitive. Online game operators in Taiwan and Hong Kong are currently our primary competitors. Our major competitors in Taiwan include Gamania Digital Entertainment Co., Ltd. (“Gamania”), Soft-World International Corporation (“Soft-World”), International Games System, Co., Ltd. (“IGS”), UserJoy Technology Co., Ltd. (“UserJoy”) and GodGame Inc. (“GodGame”). In addition, we compete for users against various offline amusement and entertainment, such as console games, arcade games and handheld games, as well as various other forms of traditional or online entertainment.

We expect more digital entertainment service providers to enter the markets where we operate, and a wider range of digital entertainment products to be introduced to these markets, given the relatively low entry barriers to the digital entertainment industry and the increasing popularity of Internet-based businesses. Our competitors vary in size and include private and public companies, many of which have greater financial, marketing and technical resources as well as name brand recognition. We intend to continue to enhance our market position through providing competitive products and quality services that meet market trends and users’ preferences, as well as strengthening sales effectiveness. As a result of the above, significant competition may reduce the number of our users or the growth rate of our user base, reduce the average hours spent on our services, or cause us to reduce usage fees. All of these competitive factors could have a material adverse effect on our business, financial condition and results of operations.

Our results of operations are subject to significant fluctuations. We have incurred operating and net losses in past years, and we may experience losses in the future.

Our revenues, expenses and results of operations have varied in the past and may fluctuate significantly in the future due to a variety of factors, many of which are beyond our control. In 2018 and 2019, we incurred consolidated operating losses of US\$4.8 million and US\$3.0 million as well as net losses of US\$3.2 million and US\$1.7 million, respectively. In 2017, we incurred a consolidated operating loss of US\$0.5 million but reported net income of US\$1.1 million. Our future profitability will depend to a great extent upon the performance of our digital entertainment service business. The key factors affecting our businesses include:

- our ability to retain existing users;
- attracting new users and maintaining user satisfaction;
- the pace of rolling out new offerings or updating existing ones by us or our competitors;
- the amount and timing of operating costs and capital expenditures relating to our business operations and expansion;
- seasonal trends in Internet use;
- price competition in the industry;
- regulatory and other risks associated from our operations in Taiwan and Hong Kong.

In addition, our operating expenses are based on our expectations of the future demand for our services and are relatively fixed in the short term. We may be unable to adjust spending quickly enough to offset any unexpected demand shortfall. A decrease in revenues in relation to our expenses could have a material and adverse effect on our business, results of operations and financial condition. You should not place undue reliance on year-to-year or quarter-to-quarter comparisons of our results of operations as indicators of our future performance and we cannot assure you that we will not experience operating or net losses in future periods.

Our business strategy, which contemplates growth through acquisitions and strategic investments, exposes us to significant risks.

We have pursued and may continue to pursue growth through acquisitions and strategic investments. Any acquisition or investment is subject to a number of risks. Such risks include the diversion of management time and resources, disruption of our ongoing business, lack of familiarity with new markets, difficulties in supporting the acquired business, and dilution to existing stockholders if our common stock is issued in consideration for an acquisition or investment, incurring or assuming indebtedness or other liabilities in connection with an acquisition.

We entered into multiple strategic alliances in the past and later recognized related impairment losses on investments and goodwill. We may incur debts in the future upon an acquisition or suffer losses related to impairment of these investments. We will continue to examine the merits, risks and feasibility of potential transactions, and expect to explore additional acquisition opportunities in the future. Such examination and exploration efforts, and any related discussions with third parties, may or may not lead to future acquisitions and investments. We may not be able to complete acquiring or investing transactions that we initiate. Our ability to grow through such acquisitions and investments will depend on many factors, including the availability of suitable acquisition candidates at an acceptable cost, our ability to reach agreement with acquisition candidates or investee companies on commercially reasonable terms, the availability of financing to complete transactions and our ability to obtain any required governmental approvals.

We also face challenges in integrating any acquired business. These challenges include eliminating redundant operations, facilities and systems, coordinating management and personnel, retaining key employees, managing different corporate cultures, maintaining the relationship with the suppliers, vendors and/or distributors of acquired businesses, and achieving cost reductions and cross-selling opportunities. There can be no assurance that we will be able to successfully integrate all aspects of acquired businesses. The process of integrating the acquired business may disrupt our business and divert our resources, including the resources of our management. In addition, the benefits of an acquisition or investment transaction may take considerable time to be fully realized and we cannot assure you that any particular acquisition or investment and the subsequent integration will produce the intended benefits.

Our business could suffer if we do not successfully manage current growth and potential future growth.

We are pursuing a number of growth strategies. Some of these strategies relate to services, products or markets in which we lack experience and expertise. Anticipated expansion of our operations will place a significant strain on our management, operation systems and resources. In addition to training and managing our workforce, we will need to continue to develop and improve our financial and management controls and our reporting systems and procedures, including those of acquired businesses. We cannot assure you that we will be able to effectively manage the growth of our operations, and any failure to do so may limit our future growth and materially and adversely affect our business, financial condition and results of operations.

Dependence on network suppliers may adversely affect our operating results.

Our success depends in part upon the capacity, reliability, and performance of our network infrastructure, including the capacity leased from our Internet bandwidth suppliers. We depend on these companies to provide uninterrupted and error-free service through their telecommunications networks. We exercise little control over these providers, which increases our vulnerability to problems with the services they provide. We have experienced and expect to continue to experience interruptions or delays in network service. Any failure on our part or the part of our third-party suppliers to achieve or maintain high data transmission capacity, reliability or performance could significantly reduce customer demand for our services and damage our business. As our customer base grows and their usage of telecommunications capacity increases, we will be required to make additional investments in our capacity to maintain adequate data transmission speeds, the availability of which may be limited or the cost of which may be on terms unacceptable to us. If adequate capacity is not available to us as our customers' usage increases, our network may be unable to achieve or maintain sufficiently high data transmission capacity, reliability or performance. In addition, our business would suffer if our network suppliers increased the prices for their services and we were unable to pass along the increased costs to our customers.

Our digital entertainment service business depends on the reliability of the network infrastructure and related services provided by ourselves and third parties, which is subject to physical, technological, security and other risks. We could suffer a loss of revenue and increased costs, exposure to significant liability, reputational harm and other serious negative consequences if we sustain damages, cyber-attacks or other data security breaches that disrupt our operations or result in the dissemination of proprietary or confidential information about us or our customers or other third parties.

The development and operation of our online networks are subject to physical, technological, security and other risks which may result in interruption in service or reduced capacity. These risks include physical damage, power loss, telecommunications failure, capacity limitation, hardware or software failures or defects and breaches of physical and cybersecurity by computer viruses, system break-ins or otherwise. An increase in the volume of usage of online services could strain the capacity of the software and hardware employed to prevent and identify such failures, breaches and attacks, which could result in slower response time or system failures. In particular, our industry has witnessed an increase in the number, intensity and sophistication of cybersecurity incidents caused by hackers and other malicious actors such as foreign governments, criminals, hacktivists, terrorists and insider threats. Hackers and other malicious actors may be able to penetrate our network security and misappropriate or compromise our confidential, sensitive, personal or proprietary information, or that of third parties, and engage in the unauthorized use or dissemination of such information. They may be able to create system disruptions, or cause shutdowns. Hackers and other malicious actors may be able to develop and deploy viruses, worms, ransomware and other malicious software programs that attack our products or otherwise exploit any security vulnerabilities of our systems. In addition, sophisticated hardware and operating system software and applications that we procure from third parties may contain defects in design or manufacture, including “bugs,” cybersecurity vulnerabilities and other problems that could unexpectedly interfere with the operation or security of our systems.

We have a variety of backup servers at our primary site to deal with possible system failures. However, we do not have redundant facilities in the event of an emergency. The occurrence of any of these events could result in interruptions, delays or cessation in service to users of our online services, which could have a material adverse effect on our business and results of operations. We may be required to expend significant capital or other resources to protect against the threat of security breaches and attacks or to alleviate problems caused by such actions, including the following:

- expenses to rectify the consequences of the damage, security breach or cyber attack;
- liability for stolen assets or leaked information;
- costs of repairing damage to our systems;
- lost revenue and income resulting from any system downtime caused by such breach or attack;
- loss of competitive advantage if our proprietary information is obtained by competitors as a result of such breach or attack;
- increased costs of cyber security protection;
- costs of incentives we may be required to offer to our customers or business partners to retain their business; and
- damage to our reputation.

In addition, any compromise of security from a security breach or cyber attack could deter customers or business partners from entering into transactions that involve providing confidential information to us. As a result, any compromise to the security of our systems could have a material adverse effect on our business, reputation, financial condition, and operating results.

While we have implemented industry-standard physical and cybersecurity measures, our network may still be vulnerable to unauthorized access, computer viruses, denial of service and other disruptive problems. For example, in recent years, we have detected and mitigated a few incidents of denial-of-service attacks against network providers that affected latency of connections to our games, and those incidents did not result in significant financial impact on our operations and financial results. We have experienced in the past, and may experience in the future, security breaches or attacks. There can be no assurance that any measures implemented will not be circumvented in the future.

The board of directors oversees our cyber risk management by periodical review of a summary for recent cybersecurity incidents and the execution of our risk management program, and prompt assessment, if a major and urgent incident occurred, of our countermeasures and mitigation actions.

Our business is also vulnerable to delays or interruptions due to our reliance on infrastructure and related services provided by third parties. End-users of our offerings depend on Internet Service Providers ("ISPs") and our system infrastructure for access to the Internet games and services we offer. Some of these services have experienced service outages in the past and could experience service outages, delays and other difficulties due to system failures, stability or interruption. For example, prior earthquakes in Taiwan, Indonesia and Japan have caused damage to undersea fiber optic cables linking countries such as Malaysia, Singapore, Australia, Japan, South Korea, China, the United States and Europe, causing disruptions in Internet traffic worldwide. We may lose customers as a result of delays or interruption in service, including delays or interruptions relating to high volumes of traffic or technological problems, which may prevent communication over the Internet and could materially adversely affect our business, revenues, results of operations and financial condition.

We rely on Google Cloud for certain of our mobile-based digital entertainment services. Any disruption of or interference with our use of the Google Cloud operation would negatively affect our operations and seriously harm our business.

Google provides a distributed computing infrastructure platform for business operations, or what is commonly referred to as a "cloud" computing service, and we currently rely on Google Cloud for certain of our mobile-based digital entertainment services. Any significant disruption of or interference with our use of Google Cloud would negatively impact our operations and our business would be seriously harmed. If our users are not able to access our products through Google Cloud or encounter difficulties in doing so, we may lose users. The level of service provided by Google Cloud may also impact the usage of and our users' satisfaction with our products and could seriously harm our business and reputation. If Google Cloud experiences interruptions in service regularly or for a prolonged basis, or other similar issues, our business would be seriously harmed. Hosting costs will also increase as our user base and user engagement grows and may seriously harm our business if we are unable to grow our revenues faster than the cost of utilizing the services of Google or similar providers.

In addition, Google may take actions beyond our control that could seriously harm our business, including:

- discontinuing or limiting our access to its Google Cloud platform;
- increasing pricing terms;
- terminating or seeking to terminate our contractual relationship altogether;
- establishing more favorable relationships with one or more of our competitors; or
- modifying or interpreting its terms of service or other policies in a manner that impacts our ability to run our business and operations.

Google has broad discretion to change and interpret its terms of service and other policies with respect to us, and those actions may be unfavorable to us. Google may also alter how we are able to process data on the Google Cloud platform. If Google makes changes or interpretations that are unfavorable to us, our business would be seriously harmed.

Any failure to maintain a stable and efficient distribution and payment network could have a material and adverse impact on our digital entertainment service business, financial condition and results of operations.

Our digital entertainment service business operation relies heavily on a multi-layer distribution and payment network composed of third-party distributors for our sales to, and collection of payment from, our users. As we do not enter into long-term agreements with any of our distributors, we cannot assure you that we will continue to maintain favorable relationships with them. If we fail to maintain a stable and efficient distribution and payment network, our business, financial condition and results of operations could be materially and adversely affected.

In addition, our ability to process electronic commerce transactions depends on bank processing and credit card systems. In order to prepare for certain types of system problems, we have a formal disaster recovery plan. Nevertheless, any system failure, including network, software or hardware failure, which causes a delay or interruption in our e-commerce services could have a material adverse effect on our business, revenues, results of operations and financial condition.

Undetected programming errors or defects in our software, services and games and the proliferation of cheating programs could materially and adversely affect our digital entertainment service business, financial condition and results of operations.

Our digital entertainment services may contain undetected programming errors or other defects. These errors or other defects could damage our reputation and subject us to liability. As to online games, parties unrelated to us may develop cheating programs that enable users to acquire superior features for their game characters that they would not have otherwise. Furthermore, certain cheating programs could cause the loss of a character's superior features acquired by a user. The occurrence of undetected errors or defects in our digital entertainment services, and our failure to discover and disable cheating programs affecting the fairness of our service environment, could disrupt our operations, damage our reputation and ruin our users' experiences. As a result, such errors, defects and cheating programs could materially and adversely affect our business, financial condition and results of operations. If such errors, defects and cheating programs occur in software, services and games we operate, our business operations and, in turn, our business and financial condition, could be materially and adversely affected.

We may be subject to claims of intellectual property right infringement by third parties, which could subject us to significant liabilities and other costs.

Our success depends largely on our ability to use and develop our technology and know-how without infringing upon the intellectual property rights of third parties. There has been substantial litigation in the various segments of the technology, PC application and mobile application markets, including with respect to the online content, electronics, and related industries regarding intellectual property rights. From time to time, third parties may claim infringement by us of their intellectual property rights. Our broad range of application of current technology and technology under development increases the likelihood that third parties may claim infringement by us of their intellectual property rights. The validity and scope of claims relating to the intellectual property may involve complex scientific, legal and factual questions and analysis, and tend to be uncertain. If third parties assert copyright or patent infringement or violation of other intellectual property rights against us, we will have to defend ourselves in legal or administrative proceedings, which can be costly and time consuming and may significantly divert the efforts and resources of our technical and management personnel. An adverse determination in any such proceedings to which we may become a party could subject us to significant liability to third parties, require us to seek licenses from third parties, or prevent us from selling our products and services. The imposition of liabilities that are not covered by insurance, in excess of insurance coverage or for which we are not indemnified by a content provider, could have a material adverse effect on our business, results of operations and financial condition.

Certain technologies necessary for us to provide our services may, in fact, be patented by other parties either now or in the future. If such technology were held under patent by another person, we would have to negotiate a license for the use of that certain technology. We may not be able to negotiate such a license at a price that is acceptable. The existence of such patents, or our inability to negotiate a license for any such technology on acceptable terms, could force us to cease using such technology and offering products and services incorporating such technology. If we were found to be infringing on the intellectual property rights of any third party in lawsuits or other claims and proceedings that may be asserted against us in the future, we could be subject to liabilities for such infringement, which could be material. We could also be required to refrain from using, manufacturing or selling certain products or using certain processes, either of which could have a material adverse effect on our business and operating results. From time to time, we may receive in the future, notices of claims of infringement, misappropriation or misuse of other parties' proprietary rights. We cannot assure you that we will always prevail in these discussions and actions or that other actions alleging infringement by us of third-party patents will not be asserted or prosecuted against us. Furthermore, lawsuits like these may require significant time and expense to defend, may divert management's attention away from other aspects of our operations and, upon resolution, may have an adverse effect on our business, results of operations, financial condition and cash flows.

We may face litigation risks and regulatory disputes in the course of our business.

In the ordinary course of our business, claims and disputes involving business partners, customers, regulatory authorities and other parties may be brought against us and by us in connection with our business. Claims may be brought against us for alleged defective or incomplete work, breaches of contractual obligations, infringement of intellectual property or otherwise. Such claims can involve actual damages and liquidated damages and could be expensive to defend, even if we believe that they are without merit. If found to be liable, we would have to incur a charge against earnings to the extent a reserve had not been established for the matter in our accounts, or to the extent the claims were not sufficiently covered by our insurance. The defense of such claims and any adverse ruling against us could have an adverse impact on our business, financial condition and results of operations.

On January 15, 2018, Ennoconn Corporation (“Ennoconn”) filed a complaint against one of our subsidiaries, GigaMedia Cloud Services Co., Ltd. (“GigaMedia Cloud”), in the Taiwan Taipei District Court. The complaint alleged that GigaMedia Cloud is obligated to pay Ennoconn NTD 79,477,648 (approximately \$2,697,471) in connection with a transaction to purchase taximeters in 2015. GigaMedia Cloud filed an answer to the complaint denying Ennoconn’s allegations for a lack of factual and legal basis on March 1, 2018. On November 15, 2018, the Taiwan Taipei District Court determined that all of Ennoconn’s claims were without merit and made a judgment denying the complaint. On January 3, 2019, Ennoconn filed an appeal demanding the judgment entered by the District Court be reversed and amended. The civil court of the second instance, the Taiwan High Court, ruled on January 8, 2020, that the decision of the Taiwan Taipei District Court should be partially modified and Ennoconn is entitled to NTD 27,084,180 (approximately \$892,763). GigaMedia Cloud has filed another appeal with the Taiwan Supreme Court on February 4, 2020. GigaMedia Cloud accrued its best estimate for the ultimate resolution of this claim. Please refer to Note 16 to our consolidated financial statements for more information.

We may need to incur significant expenses to protect our intellectual property rights, and if we are unable to adequately protect our intellectual property rights, our competitive position could be harmed.

We regard our copyrights, service marks, trademarks, trade secrets, patents and other intellectual property as critical to our success. We rely on a combination of copyright and trademark laws, trade secret protection, confidentiality and non-disclosure agreements, and other contractual provisions to protect our proprietary software, trade secrets and similar intellectual property. We have patents, copyrights and trademarks in certain jurisdictions and may apply for further trademark and copyright registrations and additional patents, which may provide such protection in relevant jurisdictions. However, we cannot assure you that our efforts will prove to be sufficient or that third parties will not infringe upon or misappropriate our proprietary rights. Unauthorized use of the intellectual property, whether owned by or licensed to us, could adversely affect our business and reputation.

The validity, enforceability and scope of protection of intellectual property in Internet-related industries are evolving, and therefore, uncertain. In particular, the laws and enforcement procedures of Taiwan and Hong Kong are uncertain or do not protect intellectual property rights to the same extent as the laws and enforcement procedures of the United States do. We may have to engage in litigation or other legal proceedings to enforce and protect our intellectual property rights, which could result in substantial costs and diversion of our resources, and have a material adverse effect on our business, financial condition and results of operations.

Our future results of operations or the growth of our business may suffer if we are unable to maintain satisfactory relationships with the licensors of our digital entertainment services.

While we are focused on strengthening our abilities to self-developed casual games, we have historically and may in the future source casual games, advanced casual games, massive multiplayer online (“MMOs”) games and other forms of digital entertainment services through licensing from developers in various regions where digital entertainment development is relatively established. As of the date of this annual report, we have several licensed MMOs in our portfolio, including the online games we currently offer and other products in the pipeline. We need to maintain stable and satisfactory working relationships with our licensors in order to ensure the continued operation of our licensed products and our continued access to new digital entertainment licenses. We depend on our licensors to provide the necessary technical support for the operation of the licensed games as well as expansion packs and upgrades that sustain continuing interest in the games. Our ability to maintain satisfactory working relationships with our licensors may also influence our ability to license new products developed by the same or other licensors. If we are unable to maintain satisfactory relationships with our licensors, our financial condition, results of operations, future profitability and growth prospects may be materially and adversely affected.

Increased energy costs, power outages, and limited availability of electrical resources may adversely affect our operating results.

Our data centers are susceptible to increased costs of power and to electrical power outages. Our customer contracts do not contain provisions that would allow us to pass on any increased costs of energy to our customers, which could affect our operating margins. Any increases in the price of our services to recoup these costs could not be implemented until the end of a customer contract term. Further, power requirements at our data centers are increasing as a result of the increasing power demands of today’s servers. Increases in our power costs could impact our operating results and financial condition. Since we rely on third parties to provide our data centers with power sufficient to meet our needs, our data centers could have a limited or inadequate amount of electrical resources necessary to meet our customer requirements. We attempt to limit exposure to system downtime due to power outages by using backup generators and power supplies. However, these protections may not limit our exposure to power shortages or outages entirely. Any system downtime resulting from insufficient power resources or power outages could damage our reputation and lead us to lose current and potential customers, which would harm our operating results and financial condition.

We could be liable for breaches of security on our web site, fraudulent activities of our users, or the failure of third-party vendors to deliver credit card transaction processing services.

A fundamental requirement for operating our Internet-based, international communications service and electronic billing our customers is the secure transmission of confidential information and media (such as customers' credit card numbers and expiration dates, personal information and billing addresses) over public networks. Although we have developed systems and processes that are designed to protect consumer information and prevent fraudulent credit card transactions and other security breaches and are not aware of any breaches of security on our websites having occurred, failure to mitigate such fraud or breaches may expose us to litigation and possible liability for failing to secure confidential customer information and could harm our reputation and ability to attract and retain customers, consequently adversely affect our operating results. The laws relating to the liability of providers of online payment services are currently unsettled and certain jurisdictions may enact their own rules with which we may not comply. We rely on third-party providers to process and guarantee payments made by our subscribers up to certain limits, and we may be unable to prevent our customers from fraudulently receiving goods and services. Our risk of liability will increase if a larger portion of our transactions involve fraudulent or disputed credit card transactions. Any costs we incur as a result of fraudulent or disputed transactions could harm our business. In addition, the functionality of our current billing system relies on certain third-party vendors delivering services. If these vendors are unable or unwilling to provide services, we will not be able to charge for our services in a timely or scalable fashion, which could significantly decrease our revenue and have a material adverse effect on our business, financial condition and operating results.

We may experience losses due to subscriber fraud and theft of service.

Subscribers may in the future obtain access to our service without paying for service by unlawfully using our authorization codes or by submitting fraudulent credit card information. To date, such losses from unauthorized credit card transactions and theft of service have not occurred. We have implemented anti-fraud procedures in order to control losses relating to these practices, but these procedures may not be adequate to effectively limit all of our exposure in the future from fraud. If our procedures are not effective, consumer fraud and theft of service could significantly decrease our revenue and have a material adverse effect on our business, financial condition and operating results.

Our transactions with related parties may not benefit us and may harm our Company.

We have entered into several transactions with certain related parties in the past. We believe that we have conducted our related-party transactions on an arm's-length basis and on terms comparable to, or more favorable to us than, similar transactions we would enter into with independent third parties. However, we cannot assure you that all our future transactions with related parties will be beneficial to us. See Item 7, "Major Shareholders and Related-Party Transactions" in this annual report.

We may need additional capital in the future, and it may not be available on acceptable terms.

The development of our business may require significant additional capital in the future to:

- fund our operations;
- enhance and expand the range of products and services we offer; and
- respond to competitive pressures and perceived opportunities, such as investment, acquisition and international expansion activities.

We cannot assure you that additional financing will be available on terms favorable to us, if at all. If adequate funds are not available on acceptable terms, we may be forced to curtail or cease our operations. Moreover, even if we are able to continue our operations, any failure to obtain additional financing could have a material and adverse effect on our business, financial condition and results of operations, and we may need to delay the deployment of our services. See Item 5, "Operating and Financial Review and Prospects — B. Liquidity and Capital Resources."

Our results of operations and financial condition may be affected by political instability as well as the occurrence of natural disasters and epidemics.

We operate our digital entertainment business in Taiwan, Hong Kong and Macau. Political unrest, war, acts of terrorism and other instability, as well as natural disasters such as earthquakes and typhoons, which are common in Taiwan, can result in disruption to our business. For example, the 2019 civil commotions in Hong Kong has caused a few days of disruptions to our Hong Kong operation. Our business also could be adversely affected by the effects of influenza A virus subtypes, such as H1N1 and H5N1, SARS, COVID-19 or other epidemics. Any prolonged recurrence of such adverse public health developments in the regions where we operate may have material adverse effects on our business operations. These could include illness and loss of our management and key employees, or reduced productivity in an emergency remote working plan due to part or all of our personnel being under voluntary or compulsory home quarantine requirements. Natural disasters or outbreak of epidemics may result in a decrease in economic activities or temporary closure of many businesses and disruption in our operations. In addition, other major natural disasters may also adversely affect our business by, for example, causing disruptions of the Internet network or otherwise affecting access to our services.

There are economic risks associated with doing business in Taiwan, particularly due to the tense relationship between Taiwan and the PRC.

Our principal executive offices and a significant portion of our assets are located in Taiwan and a major portion of our revenues of digital entertainment service business are derived from our operations in Taiwan. Taiwan, as part of the Republic of China, has a unique international political status. The PRC asserts sovereignty over mainland China and Taiwan and does not recognize the legitimacy of the Taiwan government. Relations between Taiwan and the PRC and other factors affecting the political or economic conditions of Taiwan could also affect our digital entertainment service business.

Game players' spending on our games may be adversely affected by slower growth in the Greater China economy and adverse conditions in the global economy.

We rely for our revenues on the spending of our game players, which in turn depends on the players' level of disposable income, perceived future earnings capabilities and willingness to spend. Any slowdown of the economy in Greater China, especially Taiwan or Hong Kong, could in turn result in a reduction in spending by our game players.

In addition, the global economy has experienced significant instability and there has been volatility in global financial and credit markets in recent years, particularly in the past four months as a result of the ramifications of COVID-19. It is unclear how long such instability and volatility will continue, and how much adverse impact such instability and volatility or any such downturn might have on the economies of Greater China and other jurisdictions where we operate our games. Any such instability, volatility or adverse impact in Greater China or in overseas markets could cause our game players to reduce their spending on our games and reduce our revenues. While Taiwan and Hong Kong have not been impacted as severely by the COVID-19 as compared to other regions, consumer confidence in both regions has dipped to its lowest levels in recent years, and unemployment rates have increased, each of which has decreased ability and willingness to spend on entertainment. An escalation of the local COVID-19 situation, an intensified stay-at-home order or even full shutdown in Taiwan or Hong Kong could further decrease such spending.

Fluctuations in the exchange rates between the U.S. dollar and other currencies in which we conduct our business could adversely affect our profitability.

The operations of our digital entertainment service business are conducted in NT dollars and Hong Kong dollars. Accordingly, fluctuations in the exchange rates could have a positive or negative effect on our reported results. Generally, an appreciation of NT dollars or Hong Kong dollars against U.S. dollars results in a foreign exchange loss for monetary assets denominated in U.S. dollars, and a foreign exchange gain for monetary liabilities denominated in U.S. dollars. On the contrary, a devaluation of NT dollars, Hong Kong dollars, or Singapore dollars against U.S. dollars results in a foreign exchange gain for monetary assets denominated in U.S. dollars, and a foreign exchange loss for monetary liabilities denominated in U.S. dollars. Given the constantly changing currency exposures and the substantial volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. There can be no assurance that we will not experience currency losses in the future, which could have a material adverse effect on our business, revenues, results of operations and financial condition.

Risks Related to Ownership of our Shares

Our Shares are listed on the Nasdaq Capital Market and if we fail to meet the standards for continued listing of our Shares on Nasdaq, the Shares could be delisted from the Nasdaq Stock Market.

Our Shares are listed on the Nasdaq Capital Market. The Nasdaq Capital Market has several quantitative and qualitative requirements companies must comply with to maintain listing, including a US\$1.00 minimum bid price per share.

Although we have regained compliance with US\$1.00 minimum bid price listing requirement, there can be no assurance that we will maintain compliance and continue to meet all of the requirements for continued Nasdaq listing. If we fail to comply again in the future, our Shares could still be delisted from Nasdaq, which could have a material adverse effect on our stock prices and our standing with current and future investors.

The price of our Shares has been volatile historically and may continue to be volatile, which may make it difficult for holders to resell our Shares when desired or at attractive prices.

The trading price of our Shares has been and may continue to be subject to wide fluctuations. In 2019, the closing prices of our Shares on the Nasdaq Stock Market ranged from US\$2.20 to US\$3.00 per share, and the closing price on April 14, 2020 was US\$2.35. Our Share price may fluctuate in response to a number of events and factors. In addition, the financial markets in general, and the market prices for Internet-related companies in particular, have experienced extreme volatility that often has been unrelated to the operating performance of such companies. These broad market and industry fluctuations may adversely affect the price of our Shares, regardless of our operating performance.

Sizable percentage of our outstanding Shares are beneficially owned by Mr. Andre Koo, who accordingly has significant influence to the outcome of any corporate transaction or other matters submitted to our shareholders for approval, and their interests may differ from yours.

As of March 31, 2020, Mr. Andre Koo beneficially owned 19.54% of our outstanding Shares. Accordingly, he has significant influence to the outcome of any corporate transaction or other matters submitted to our shareholders for approval, including but not limited to mergers, consolidations, and the power to prevent or cause a change in control. The interests of Mr. Koo may differ from your interests.

The ability of our subsidiaries in Taiwan to distribute dividends to us may be subject to restrictions under the laws of Taiwan.

We are a holding company, and some of our assets constitute our ownership interests in our subsidiaries in Taiwan, including Hoshin GigaMedia, which owns the Taiwan-based operations of our digital entertainment service business. Accordingly, part of our primary internal source of funds to meet our cash needs is our share of the dividends, if any, paid by our subsidiaries, including those in Taiwan. The distribution of dividends to us from these subsidiaries in Taiwan is subject to restrictions imposed by the applicable corporate and tax regulations in these countries, which are more fully described in Item 5, “Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Dividends from Our Subsidiaries” in this annual report. In addition, although there are currently no foreign exchange control regulations which restrict the ability of our subsidiaries in Taiwan to distribute dividends to us, the relevant regulations may be changed and the ability of these subsidiaries to distribute dividends to us may be restricted in the future.

We are a Singapore company, and because the rights of shareholders under Singapore law differ from those under U.S. law, you may have difficulty in protecting your shareholder rights or enforcing any judgment obtained in the U.S. against us or our affiliates.

Our corporate affairs are governed by our memorandum and articles of association and by the applicable laws governing corporations incorporated in Singapore. The rights of our shareholders and the responsibilities of members of our board of directors under Singapore law are different from those applicable to a corporation incorporated in the United States and, therefore, our shareholders may have more difficulty protecting their interests in connection with actions by the management, members of our board of directors or our controlling shareholders than they would as shareholders of a corporation incorporated in the United States.

Our Company is incorporated under the laws of the Republic of Singapore. Many of our directors and senior management reside outside the United States. As a result, it may be difficult for investors to effect service of process within the United States upon us or any of these persons or to enforce in the United States any judgment obtained in the U.S. courts against us or any of these persons, including judgments based upon the civil liability provisions of the U.S. federal securities laws or any state or territory of the United States. Judgments of the U.S. courts based upon the civil liability provisions of the U.S. federal securities laws may not be enforceable in Singapore courts, and it is unclear whether Singapore courts will enter judgments in original actions brought in Singapore courts based solely upon the civil liability provisions of the U.S. federal securities laws.

Anti-takeover provisions under the Singapore Securities and Futures Act (Chapter 289) and the Singapore Code on Take-overs and Mergers may delay, deter or prevent a future takeover or change of control of our Company, which could adversely affect the price of our Shares.

The Singapore Code on Take-overs and Mergers (the “Code”), issued pursuant to Section 321 of the Singapore Securities and Futures Act (Chapter 289) regulates the acquisition of ordinary shares of, inter alia, listed public companies and contains certain provisions that may delay, deter or prevent a future takeover or change of control of our Company. Any person acquiring an interest, either on his own or together with parties acting in concert with him, in 30% or more of the voting shares in our Company must, except with the prior consent of the Singapore Securities Industry Council (the “SIC”), extend a takeover offer for the remaining voting shares in our Company in accordance with the provisions of the Code. Likewise, any person holding between 30% and 50% of the voting shares in our Company, either on his own or together with parties acting in concert with him, must, except with the prior consent of the SIC, make a takeover offer in accordance with the provisions of the Code if that person together with parties acting in concert with him acquires additional voting shares in excess of one percent of the total number of voting shares in any six-month period.

Under the Code, an offeror must treat all shareholders of the same class in an offeree company equally. A fundamental requirement is that shareholders in the company subject to the takeover offer must be given sufficient information, advice and time to consider and decide on the offer.

These provisions contained in the Code may discourage or prevent transactions that involve an actual or threatened change of control of our Company. This may harm you because an acquisition bid may allow you to sell your Shares at a price above the prevailing market price.

Our shareholders may be subject to Singapore taxes.

Singapore tax law may differ from the tax laws of other jurisdictions, including the United States. Gains from the sale of our Shares by a person not tax resident in Singapore may be taxable in Singapore if such gains are part of the profits of any business carried on in Singapore. For additional information, see Item 10, “Additional Information—E. Taxation—Singapore Tax Consideration” in this annual report. You should consult your tax advisors concerning the overall tax consequences of acquiring, owning or selling the Shares.

We may be deemed to be an investment company under the United States Investment Company Act of 1940, which could have a significant negative impact on our results of operations.

We may be deemed to be an investment company under the United States Investment Company Act of 1940 (the “1940 Act”), and may suffer adverse consequences as a result. Generally, the 1940 Act provides that a company is an investment company if the company (i) is, holds itself out as or proposes to be engaged primarily in the business of investing, reinvesting or trading in securities or (ii) is engaged or proposes to engage in the business of investing, reinvesting, owning, holding or trading in securities and owns or proposes to acquire “investment securities” having a value exceeding 40% of the value of its total assets (exclusive of U.S. government securities or cash items) on an unconsolidated basis. Under the 1940 Act, investment securities include, among other things, securities of non-majority owned businesses. However, a company that is primarily engaged, directly or through wholly owned subsidiaries, in a business or businesses other than that of investing, reinvesting, owning, holding or trading in securities is not an investment company.

In the past, we disposed of our online gambling business and made several significant investments in online game developers and operators. As a result of these transactions, we have a significant amount of cash and securities. Consequently, there is a risk that we could be deemed to be an investment company because our investment securities may be deemed to comprise more than 40% of our total assets (exclusive of U.S. government securities or cash items) on an unconsolidated basis pending investment or disposal proceeds into our businesses.

However, based on our historical and current business activities, our intentions, the manner in which we hold ourselves out to the public, the primary activities of our officers and directors and an analysis of our non-cash assets and income during 2019, the first quarter of 2020 and in prior periods, we believe that the better view is that we are not an investment company. Nevertheless, a part of the determination of whether we are an investment company is based upon the composition and value of our non-cash assets, a significant portion of which are presently comprised of our strategic investments. As a result, we could be deemed to be an investment company.

We intend to continue to conduct our businesses and operations so as to avoid being required to register as an investment company. We have sought opportunities to deploy our capital in a manner which would result in the Company acquiring majority interests in entities or businesses that complement or enhance our remaining businesses or would otherwise assist the Company in achieving our current corporate objectives. We have also limited, and intend to continue to limit, new strategic investments to those opportunities which would present excellent opportunities to complement or enhance our remaining businesses or would otherwise assist the Company in achieving our current corporate objectives. If, nevertheless, we were to be required to register as an investment company, because we are a foreign company, the 1940 Act would prohibit us and any person deemed to be an underwriter of our securities from offering for sale, selling or delivering after sale, in connection with a public offering, any security issued by the Company in the United States. Additionally, we may be unable to continue operating as we currently do and might need to acquire or sell assets that we would not otherwise acquire or sell in order to avoid being treated as an “investment company” as defined under the 1940 Act. We may incur significant costs and management time in this regard, which could have a significant negative impact on our results of operations.

We may be classified as a passive foreign investment company for U.S. federal income tax purposes. As a result, you may be subject to materially adverse tax consequences with respect to Shares.

In light of our significant cash balances and portfolio of investment securities, we believe that it is likely that we were classified as a passive foreign investment company, or PFIC, for the taxable year ended December 31, 2019, and we will likely be a PFIC for our current taxable year ending December 31, 2020, unless our share value increases substantially and/or we invest a substantial amount of the cash and other passive assets we hold in assets that produce or are held for the production of non-passive income. In addition, it is possible that one or more of our subsidiaries may be or become classified as a PFIC for U.S. federal income tax purposes. We generally will be classified as a PFIC for any taxable year in which 75% or more of our gross income consists of certain types of “passive” income or 50% or more of the average quarterly value of our assets (as generally determined on the basis of fair market value) during such year produce or are held for the production of passive income. For this purpose, cash and other assets readily convertible into cash are generally classified as passive and goodwill and other unbooked intangibles associated with active business activities may generally be classified as non-passive.

If we were to be classified as a PFIC in any taxable year during which a U.S. person (as defined in “E. Taxation—U.S. Tax Considerations—Passive Foreign Investment Company”) holds our Shares, such U.S. person may incur significantly increased United States income tax on gain recognized on the sale or other disposition of the Shares and on the receipt of distributions on the Shares to the extent such gain or distribution is treated as an “excess distribution” under the U.S. federal income tax rules. Furthermore, a U.S. person will generally be treated as holding an equity interest in a PFIC in the first taxable year of the U.S. Person’s holding period in which we become a PFIC and subsequent taxable years (“PFIC-Tainted Shares”) even if we cease to be a PFIC in subsequent taxable years. Accordingly, a U.S. person, who acquires our Shares during the current taxable year or subsequent taxable years, should, to the extent an election is available, consider making a “mark-to-market” election in the first taxable year of such holder’s holding period to avoid owning PFIC-Tainted Shares. For more information, see the section entitled “E. Taxation—U.S. Tax Considerations—Passive Foreign Investment Company”.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of Our Company

Our business was founded as Hoshin GigaMedia in Taiwan in October 1998. For the purpose of a public equity offering, GigaMedia Limited was incorporated in Singapore in September 1999 as a company limited by shares. We acquired 99.99% of equity interest in Hoshin GigaMedia in November 1999 and the remaining 0.01% in October 2002. In more recent years, we have established additional subsidiaries inside and outside Taiwan to conduct parts of our operations. Please see Item 4.C, “Organizational Structure” for our organizational chart.

In February 2000, we completed the initial public offering of our Shares. Our Shares are traded on the Nasdaq Stock Market under the symbol GIGM.

In January 2006, we acquired FunTown, a digital entertainment business operated in Taiwan and Hong Kong.

Our Singapore company registration number is 199905474H. Our principal executive offices are located at 8F, No. 22, Lane 407, Section 2, Tiding Boulevard, Taipei, Taiwan, and our telephone number is 886-2-2656-8000. Our agent in the U.S. is Computershare Limited and its office address is 480 Washington Blvd., Jersey City, New Jersey.

The SEC maintains an Internet site that contains reports, proxy and information statements, and other information we filed electronically with the SEC. The address of the SEC's website is [http:// www.sec.gov](http://www.sec.gov). Our website address is: <http://www.gigamedia.com>. Information contained on our website is not incorporated herein by reference and does not constitute part of this annual report.

B. Business Overview

We are a diversified provider of digital entertainment services in Taiwan, Hong Kong and Macau. We do not utilize variable-interest entities in our operations.

We currently operate in the digital entertainment services, where we own 100% of and operate FunTown, a leading digital entertainment portal in Taiwan and Hong Kong. FunTown is focused on the high-growth mobile and browser-based casual games market in Asia.

GigaCloud is our wholly owned subsidiary that formerly operated our cloud computing services, and now supports our digital entertainment services as we continue to wind down our cloud service activities.

Digital Entertainment Service Business

Overview

Our digital entertainment service business, FunTown, has a strong track record of developing and monetizing PC-based casual games in Asia. FunTown also had one of the largest online social gaming platforms in Taiwan by revenue and still maintains strong brand awareness, which we now leverage as we restructure our business and extend our offerings to mobile and browser-based games in select areas and geographies.

We also publish and operate PC- and mobile-based games under licensing agreements, predominantly in the territories of Taiwan, Hong Kong and Macau. Our understanding of local markets enables us to introduce foreign niche products by concentrating marketing efforts on a specific and well-defined segment of the population.

Most of our digital entertainment products are operated or expected to be operated under the item-billing revenue model, which we refer to as the Item-Billing model. Under the Item-Billing model, users are able to access the basic functions of a casual online game for free. Players may choose to purchase in-game value-added services as well as in-game virtual items and premium features to enhance the game experience. This allows players to utilize more functions, improve performance and skills, and personalize the appearance of a game character. Game points are consumed as users purchase value-added services and in-game items.

To complement our offerings and strengthen their appeal, we are focusing on building community-based online platforms that cater to different social networking needs of our users and provide various channels to facilitate communications among them. We intend to continue to grow and enhance our market position in the digital entertainment industry by increasing focus on mobile and browser-based games. We expect to drive growth both organically and through accretive transactions.

The current COVID-19 situation may require people to stay home for a prolonged period, which may cause people to seek online entertainment at a higher rate, thereby providing us with an extra driver of growth for our digital entertainment offerings.

Our Digital Entertainment Products

MahJong and Other Casual Games

MahJong is a traditional and highly popular Chinese tile-based game that is widely played in Taiwan, Hong Kong, the PRC, Japan, South Korea and other regions throughout Asia. Similar to poker, MahJong involves skill, strategy and calculation, as well as a certain degree of chance.

Through our FunTown-branded platform, we develop and offer various local versions of MahJong for players in Asia, particularly in Taiwan and Hong Kong. To play our online MahJong games, players install software that can be downloaded free of charge from our game websites. Players can compete with anyone on the FunTown network. Our MahJong games are designed for players of all levels of skill and experience. To accommodate various needs of players, we offer different online MahJong rooms based on skill levels or stakes. We believe our online MahJong game site is one of the most popular online MahJong networks in Taiwan.

Players may play our online MahJong free of charge. While a player may win virtual currency in the game without paying, an average player typically has to pay to continue playing on a regular basis or to establish a track record inside our online MahJong community. Players may choose to purchase game points through various distribution channels, such as convenience stores, payment processing terminals or online/mobile payment channels. Players may exchange purchased game points for virtual currency and deposit into their virtual bank accounts. The virtual currency may be used to play MahJong and other games on the FunTown game site or to purchase in-game virtual items, but cannot be redeemed for cash.

Our PC-based MahJong offering has faced strong competition in recent years from the growth of mobile and browser-based online games, driven by the popularity of social networks and high mobile device usage in our markets. We responded by launching our MahJong game application which uses a web or browser-based technology with no download required. This simplified user sign-in procedures and enabled tighter integration with social networking platforms by allowing users to log into our game directly via their accounts at a given social networking platform.

We also offer various other casual card and table games through our FunTown-branded platform. These online games are Internet-based and developed through computer simulation and adaptation of non-computer games, which are traditionally played offline. The FunTown platform targets players in different regions, particularly Taiwan and Hong Kong.

Our offerings include many different online card games which are popular in various regions in Asia. Players can select their desired table based on the level of skill or stakes. These games are designed with online multiplayer features that allow players to compete against one another. We also offer chance-based games, including bingo, lotto, horse racing, Sic-Bo, slots and other simple casual games.

Like online MahJong, players may play our other casual games for free. They may choose to purchase virtual currency to play on a continuous and regular basis. Virtual currencies may be used to play all games on the FunTown game site or to purchase virtual items, but cannot be redeemed for cash.

In late 2019, we beta tested a new mobile platform for casual and began its trial operations, through which we are establishing marketing rhythm, expanding product lines, and strengthening customers' loyalty.

Our revenues generated from MahJong and other casual games were approximately US\$1.8 million in 2019, as compared to US\$1.8 million in 2018 and down from approximately \$2.4 million in 2017.

Role-Playing and Sports Games

In Taiwan and Hong Kong, we offer through our FunTown platform online games of various sub-genres besides MahJong and other card or table games.

In June 2006, we launched the PC-based MMO sports game *Tales Runner*. *Tales Runner* is a PC-based multiplayer obstacle running game in which players compete by running, jumping, dashing and using items. With its fairy-tale style and constantly changing running tracks, *Tales Runner* has been a popular game in Hong Kong.

Our revenues generated from *Tales Runner* were approximately US\$1.2 million in 2019, down from approximately US\$1.3 million in 2018 and US\$1.4 million in 2017.

Traditionally, for our PC-based MMO games, players download and install client software from our websites. Our MMO games are offered free-of-charge to all players. Players may purchase virtual items that enhance their characters' performance and game playing experience, or personalize their characters.

From 2015 to 2019, we launched eleven mobile role-playing online games, or RPGs. In particular, *Yume100*, which was launched at the end of September 2015, outperformed other mobile role-playing games. *Yume100* is a story-based game that primarily targets female players in the age range of 15 to 35 years old. In the game, which has certain romantic elements, players assume game characters and complete challenges. As of December 31, 2019, the accumulated sales revenues of *Yume100* since its launch were approximately US\$10.5 million. Leveraging the operating experience of *Yume100*, in mid-December 2017, we launched *Akaseka*, a similarly female-oriented game. Furthermore, we launched *Shinobi Master New Link*, a male-oriented game, in April 2019.

For our mobile games, players usually download the game software, or “app”, from third-party digital distribution platforms, such as “Google Play” or the “Apple App Store.” Like our PC-based games, while our mobile games are offered free-of-charge, players may purchase virtual items to progress more quickly in the game, to enhance their characters’ performance and game playing experience, or to personalize their characters.

Game Sources

In-house development of Casual Games

We develop the casual games offered on our FunTown game platform, including online MahJong, card games, and other simple casual games. Our in-house development enables us to have better control of the game features and allow for seamless integration onto our FunTown platform. In order to support product development capabilities and develop our proprietary online games, we intend to expand our browser/mobile-based games development capabilities. We made a direct investment of more than \$1.2 million during 2019 in developing our own offerings.

Sources of Role-playing and Sports Games

Historically, we have sourced role-playing and sports games through licensing from developers in various regions where game development is well established. We monitor markets in the United States, South Korea, the PRC, Japan, Southeast Asia and Europe, and maintain communications with a number of leading game development studios to identify and source new online games.

In selecting games, we evaluate the key factors that indicate the market trend and player demand and interest in the regions where we operate. We believe that our market analysis enables us to better assess the quality, risks, costs and potential returns of the games.

Prior to negotiating a license agreement with a game developer, our game testing team evaluates the game and prepares detailed evaluation reports covering the theme, storyline, in-game culture and environment, character progression, system architecture, game art, design, virtual articles and items. Based on the results of our evaluation, we may enter into a license agreement to operate select games. The cost of licensing games from developers generally consists of an upfront licensing fee, which we typically pay in several installments, and ongoing licensing fees, or royalties, which are equal to a percentage of revenues generated from operation of the game. We may also agree to provide certain minimum guarantees in royalties to developers.

In preparing for the commercial launch of each new game, we cooperate with the game developer to localize the game to make it suitable for the target markets where we plan to launch. Once the developer completes the localization and provides the first-built version, we conduct closed beta testing of the game with a select group of users. During the test period, we identify and eliminate any technical problems, assess how likely users will be to play the game regularly over a period of time (referred to as user “stickiness”), and modify and add certain game features in order to increase user stickiness. The closed beta testing is followed by open beta testing, during which we operate our games under open market conditions and monitor the performance, consistency and stability of operational systems for the game.

Following the commercial launch of a game, we regularly implement improvements and upgrades to our games.

FunTown Platform and Services

Our FunTown platform provides many digital entertainment services for users to enhance their playing and entertainment experiences, facilitate information communication among them and support the development of a strong player community. These services include:

- **Player Clubs.** FunTown offers online club services in its game community. FunTown players can also form their own clubs, invite other players with similar interests or skill levels to join, and organize online and offline events for club members. Player clubs complement the strong social features of online games by helping to maintain an online game community.

- Tournaments. FunTown provides various tournaments for its online MahJong players. After players join a club, they can participate in biweekly online inter-club tournaments.
- Avatars. To enhance players' overall entertainment experience, FunTown offers many in-game virtual items which may be purchased by players to customize their online personal graphic profiles, or avatars. Players use avatars to create their own unique look while participating in the online community. The virtual items for avatars include facial expressions, clothes and different accessories. These items are particularly popular with younger players, who customize their avatars to establish unique identities and pursue distinct fashions in the online community.
- Friends and Family Messenger and Online Chatting System. The FunTown platform has a unique function designed for players' personal contacts, which is similar to the contact list of instant message programs. This enables players to see when their friends and family members are online and invite people in their personal network to play games together.
- Social Networking. The FunTown platform provides an online social networking community called FunTown Village, in which players meet each other through their online avatars. In FunTown Village, players can interact and communicate, purchase virtual items, and even get married virtually. FunTown plans to introduce more virtual items within FunTown Village to address the strong social interests of its players and to help increase FunTown's overall appeal as a distinct online game community.
- Customer Services. FunTown provides support and services to its customers primarily through walk-in customer service centers in Taipei and Hong Kong, via e-mail and through an in-game report system where players can inquire and receive responses from FunTown.
- Mobile Platforms. FunTown now provides a mobile platform for casual games, which works on both Google's Android and Apple's iOS operating systems and allows data synchronization between the two systems.
- Customer Platform. FunTown now provides a customer platform called Dream Village, which began as a community space constructed for players of our female-oriented games. Now it not only runs an online shop for game-related virtual goods and character merchandise, but is also capable of intermediating as a payment gateway for third-party online and offline retailers.

Our Marketing

Our marketing strategy is to capitalize on our established brand names and utilize our diverse distribution networks to retain our existing users and attract new users. We use various qualitative and quantitative market research methods to analyze our target market and differentiate our product offerings from those of our competitors. We are engaged in a variety of traditional and online marketing programs and promotional activities, including the following:

In-Game Events and Online Marketing

We organize in-game events for our users, which we believe encourages the development of online communication and teamwork among our users and increases user interest in our games. Examples of in-game events include scheduled challenges or competitions for prizes. In addition, we use in-game events to introduce and market new features of our games to our current users.

We advertise our brands and our digital entertainment products across a variety of online media, including traditional online advertisements like YouTube, Google and Facebook. We also collaborate with new media channels, including micro-blogging services provided with websites and search engine services.

Offline Promotions and Advertisements

We advertise our brand names and our digital entertainment products across a variety of offline platforms, including television and outdoor advertisements. From time to time we distribute game-related posters, promotional prepaid virtual points for new users and souvenirs at trade shows and other locations. We conduct events at popular venues to stage exhibitions, distribute software and game content-related merchandise, and interact directly with our users. For our role-playing games, we also collaborate with book shops, coffee shops and similar businesses to host fan meetings, where we provide immersive customer experience to promote and strengthen customers' emotional connections with our role-playing games.

Open Beta Testing

We conduct our open beta testing under open market conditions. During open beta testing, we do not charge users to play the new game. Open beta testing serves important marketing functions, including developing initial interest, establishing an initial user base, and generating word-of-mouth publicity to support the commercial launch of the game.

Our Distribution and Payment Channels

We sell game points for our digital entertainment services through various channels. Our distribution and payment channels are described below.

Internet-Based Distribution Channels

Internet-based distribution channels consist of various websites, including the official website of FunTown. Users may purchase game points through these websites with their credit cards or computer-based payment processing terminals.

We also use third-party digital distribution platforms, such as “Google Play” or the “Apple App Store,” to provide our mobile game apps to users of various types of mobile devices.

Telecommunication Network Operators

We also distribute game points through cooperation with telecommunication network operators and their service providers. Our cooperating operators and service providers charge fees to the purchasers’ phone bills, which are prepared and collected by the network operators.

Payment Aggregators

We also work with established payment aggregators. These payment aggregators allow users to pay for a variety of products and services, such as mobile phone calls and game points of different game operators, using their pre-paid scratch cards, vouchers or codes printed on receipts.

Offline Physical Distribution Channels

Physical distribution channels mainly consist of convenience chain stores, where users may use interactive kiosk machines to purchase pre-paid game points with varying amounts.

Our Operation Architecture

We have a scalable and modular operation architecture that enables us to support and expand our digital entertainment offerings. The architecture consists of several key subsystems, including game services, a central user database, billing and payment, online customer service, game telemetry and monitoring. FunTown has its own unified user account system, which allows players to use a single account to access all FunTown games. Our billing and game management system supports various billing models and deposit options, and accommodate in-house developed games and licensed games. Our customer service system enables us to assist our players inside and outside the games. Our game telemetry and monitoring system allows us to track our concurrent online users in real time and effectively identify and fix technical problems in our server network.

Technology Infrastructure

Due to the real-time interaction among thousands of users, the stable operation of our online games requires a significant number of servers and a significant amount of connectivity bandwidth. We have developed an extensive technology infrastructure that supports the operation of our online games.

We seek to adapt our infrastructure promptly in response to changing circumstances. This includes moving the servers used in our digital entertainment business to cloud.

Our Customers

In Taiwan and Hong Kong, as of December 31, 2019, we had an aggregate of approximately 8.8 million unique registered customers of our digital entertainment services, most of which were located in Taiwan. During the year ended December 31, 2019, we recorded approximately 57,000 active paying users.

Competition

Our primary competitors in the digital entertainment business are online game operators based in Taiwan and Hong Kong. Our major competitors in Taiwan include Gamania, Soft-World, IGS, UserJoy and GodGame.

In addition, we compete for users against various offline entertainment products, such as console games, arcade games and handheld games, as well as various other forms of traditional or online entertainment.

We expect more digital entertainment companies to enter into the markets where we operate, and a wider range of digital entertainment products to be introduced to the market given the relatively low entry barriers to entry in the industry. Our competitors vary in size and include private and public companies, many of which have greater financial, marketing and technical resources as well as name recognition. We intend to continue to enhance our market position through providing competitive products and quality services that meet market trends and users' preferences, as well as strengthening sales effectiveness.

Seasonality

Our business experiences seasonality in the form of slower sales of FunTown's digital entertainment business in the second and third quarters, during which people tend to spend less time indoors and online as daylight hours increase and the weather conditions improve. Typically, our first and fourth quarters have been our strongest revenue periods.

Regulation

Our business is subject to various laws and regulations in the jurisdictions we operate relating to the digital entertainment industry, and is regulated by various government authorities.

Regulations Relating to Digital Entertainment

Taiwan

At present, there is no specific law in Taiwan governing digital entertainment services, nor are there any specific licensing requirements imposed on Internet content providers in connection with offering online game services.

Rating of Internet Content

The Regulations for the Rating of Internet Content was abolished by the NCC in 2012. At present, the rating of internet content is governed by Article 46 of the Protection of Children and Youths Welfare and Rights Act, which requires that all internet platform providers adopt their own rules implementing "clear and practicable" protection measures in accordance with the internet content supervisory institutions engaged by the National Communications Commission (the "NCC") and other relevant authorities to prevent youth and children from having access to harmful internet content. An internet platform provider is required to restrict children and youths from having access to internet content upon the relevant authority's notification that such internet content may be harmful or that such internet platform provider failed to implement "clear and practicable" protection measures.

Computer Software Ratings

The Ministry of Economic Affairs announced in July 2006 the Regulations Governing Computer Software Rating pursuant to the Protection of Children and Youths Welfare and Rights Act, which took effect in January 2007. These regulations were amended on May 29, 2012 and renamed the Regulations Governing Game Software Ratings, and were last amended on April 20, 2018. The definition of “game software” and the rating system have been significantly modified in the 2012 amendment. Game software means software that integrates digitalized text, sound, visual effects, music, pictures, images or animation, which allows users to achieve certain goals of the game by operation of electronic equipment such as computer, hand-held or wearable reality devices, but excluding software installed upon the “electronic game arcade” as defined in the Electronic Game Arcade Business Regulation Act. Manufacturers, distributors, agents, sellers, rental service operators, disseminators, exhibitors and download providers are responsible for the administration of ratings. There are five ratings: (i) Restricted (allowed for ages 18 and above); (ii) Parental Guidance 15 (allowed for ages 15 and above); (iii) Parental Guidance 12 (allowed for ages 12 and above); (iv) Parent Protection (allowed for ages 6 and above); and (v) General Audience (suitable for all ages). According to the 2012 amendment, game software that uses virtual currency to play simulated MahJong, poker, dice, steel ball, horse racing, roulette, slot machine and other games of similar nature, and the outcome of the games may result in increase or decrease of the virtual currency, must be rated as Parental Protection. If the contents of such game software meet the requirements under the rating criteria for Restricted, Parental Guidance 15 or Parental Guidance 12, such games must be rated accordingly. Furthermore, according to the 2018 amendment, games adopting chess or puzzle as the main content must be provided with warning statements showing that it may not be used for gambling or the engagement of any violation of laws and regulations or other similar conducts. In addition, according to the 2019 amendment, “card and intelligence-beneficial entertainment games” differ from the “chess games.” However, games shall be rated “PG 15” (age of 15 or above), if virtual game tokens are used and increase or decrease when performing the games. If that is not the situation, the games shall be rated “PG 12” (age of 12 or above). The rating must be indicated on the product package or next to the user’s guide, downloaded page, homepage or link for the game. If the purchase of game points (cards), virtual game currencies or virtual treasures are used as payment methods, the content and amount of payment, content or services that require additional payment, or other similar warnings shall be also provided.

Online Game Regulations and Standard Contract Template

The Ministry of Economic Affairs and the Consumer Protection Commission, pursuant to the Consumer Protection Act, announced the Regulations Mandatory and Prohibitory Provisions of Standard Contracts to Be Used for the Online Game Services, and also published a standard contract template that sets out permitted terms and limitations with respect to online game services offered in Taiwan. The regulations and the standard contract template were last amended in October 2018. Generally, consumers should be given at least three days to review such contract. Amendments or changes to fees payable for services offered must be publicly announced at least thirty days prior to such amendment and notification of such amendment was provided to consumers. For lucky draw events in which consumers pay for tickets, the online game operator is required to guarantee that the activities and awards are fully disclosed. When a consumer’ ID and/or password has been compromised, the online game operator must provide assistance and information to him or her. Consumer game records must be maintained by each online game operator for a minimum period of thirty days and shall be open to inspection by such consumers. Suspension periods for consumers who have breached the terms of their online game contracts may not exceed seven days. The termination date of online game operation must be publicly announced at least thirty days prior to such date, and notification must be provided to consumers. The online game operator cannot limit the use period of purchasing the game points in the online game contract. Furthermore, the online game operator cannot specify in the online game contract that it has the right to interpret the contract terms and conditions. Under the Consumer Protection Act, an online game operator using the online game contract that violates the above mandatory or prohibitory provisions and fails to take corrective actions ordered within the time limit prescribed by the competent authorities shall be punished by an administrative fine of NT\$30,000 to NT\$300,000, unless the law provides otherwise. Moreover, if an online game operator fails to take corrective actions within the time limit prescribed by the competent authorities, it shall be punished for each violation by an administrative fine of NT\$50,000 to NT\$500,000.

Personal Data Protection Act

On April 27, 2010, the Legislative Yuan passed a bill to amend the Computer-processed Personal Data Protection Act, which was renamed as the Personal Data Protection Act. The Personal Data Protection Act was last amended on December 30, 2015. Personal data includes the name, date of birth, I.D. card number, passport number, characteristics, fingerprints, marital status, family, education, occupation, medical record, medical treatment, genetic information, sexual life, health examination, criminal record, contact information, financial conditions, social activities and other information that may be used to identify a natural person, both directly and indirectly. Whenever an entity collects personal data from any individual, it shall inform such individual about (i) the name and identity of the collecting entity; (ii) the purpose of collection; (iii) how the collected personal data will be used; (iv) his/her rights; and (v) the consequences of his/her failure to provide the required personal data. If personal data is not provided by individuals, in addition to the information required to be disclosed as described above, the collecting entity shall inform such individual of the source of the data before processing or using the data. Prior consent from the individual is required for use of his/her personal data. These requirements shall be exempted if relevant personal data of the individual (i) is used for public interests; or (ii) is available from the public domain and the interest to be protected is more important than the privacy of such individual. Depending on the gravity of a violation, damages of NT\$500 to NT\$20,000 may be claimed against a person for each violation of the Personal Data Protection Act even if the actual damage cannot be proved. If there is more than one victim in a single violation, the maximum damages would be up to NT\$200,000,000. However, if the interests involved therein exceed NT\$200,000,000, restrictions on maximum amount for damages to be claimed and on minimum amount for damages to be claimed (NT\$500 per person for each violation) shall not apply.

Hong Kong

Personal Data (Privacy) Ordinance

The Personal Data (Privacy) Ordinance (Cap. 486) came into effect in Hong Kong on December 20, 1996. The Hong Kong government has set up the Office of the Privacy Commissioner, which is an independent statutory body to oversee the enforcement of the Ordinance. The objective of the Personal Data (Privacy) Ordinance is to protect the privacy rights of a person in relation to personal data (Data Subject). Everyone who is responsible for handling data (Data User) should follow the Six Data Protection Principles ("DPPs"), including: (i) Data Collection Principle; (ii) Accuracy & Retention Principle; (iii) Data Use Principle; (iv) Data Security Principle; (v) Openness Principle; and (vi) Data Access & Correction Principle. Non-compliance with Data Protection Principles does not constitute a criminal offence directly. However, the Commissioner may serve an Enforcement Notice to direct the data user to remedy the contravention and/or instigate a prosecution action. Contravention of an enforcement notice is an offense that could result in a maximum fine of HK\$50,000 and imprisonment for two years. Moreover, the Ordinance also criminalizes misuse or inappropriate use of personal data in direct marketing activities (Part VI A), non-compliance with Data Access Request (section 19), or unauthorized disclosure of personal data obtained without data user's consent (section 64). An individual who suffers damage, by reason of a contravention of the Ordinance in relation to his or her personal data may seek compensation from the data user concerned.

Dividends from Our Subsidiaries

Under Singapore tax regulations, foreign-sourced dividend income used for capital expenditures, including investments, and repayment of borrowings, is not deemed as remitted to Singapore and is therefore not taxable.

Listing and Offering

Under Nasdaq Rule 5210(c), as amended ("Rule 5210(c)"), all securities listed on Nasdaq must be eligible for a direct registration program, or DRS, operated by a registered clearing agency, unless the foreign private issuer is prohibited from complying by a law or regulation in its home country. In order to fulfill the direct registration program eligibility requirements, we are required to, among other provisions, amend our constitutional documents to allow for the issue of non-certificated securities.

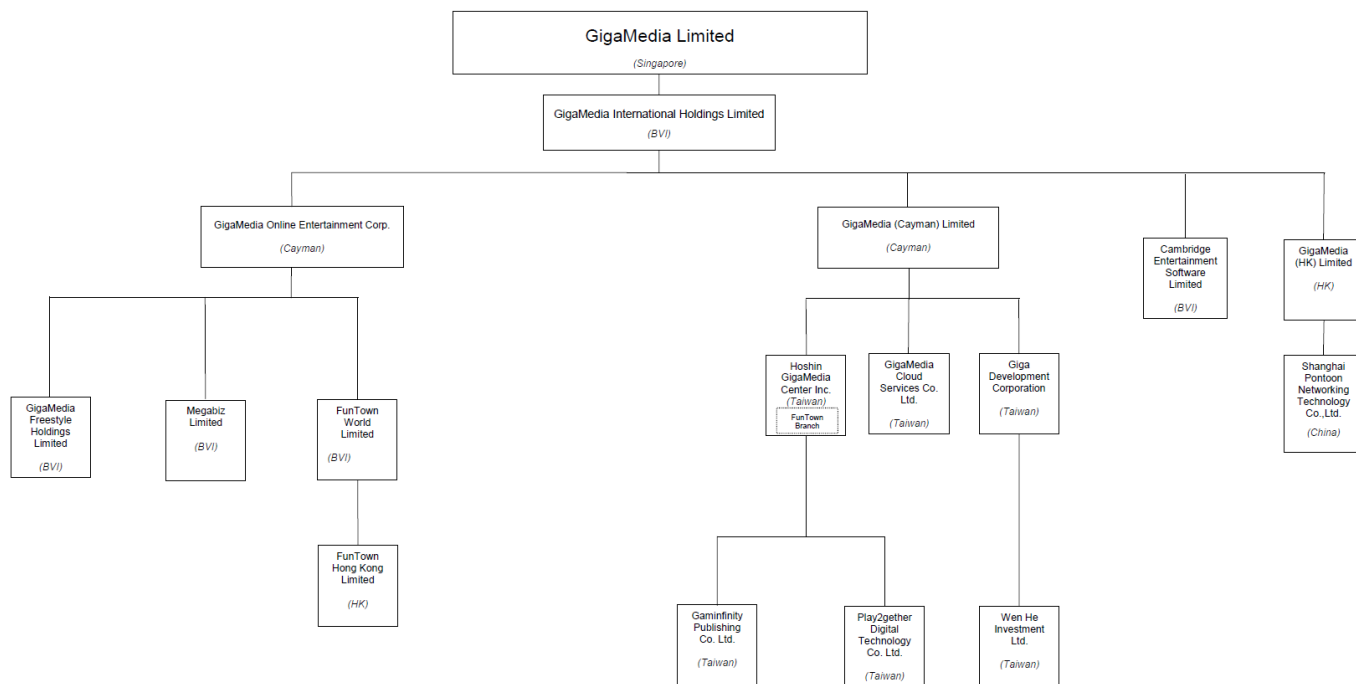
Our Company is incorporated under the laws of the Republic of Singapore and is subject to the provisions of the Companies Act (Cap.50) of Singapore (the "Companies Act"). Under the Companies Act, Singapore-incorporated companies are required to issue physical share certificates to registered shareholders as prima facie evidence of a registered shareholder's title to the Shares and there are no exceptions to or exemptions from this requirement that would enable us to amend our constitutional documents to allow for the issue of non-certificated shares. Therefore, we are not able to comply with the DRS eligibility provisions of Rule 5210(c).

Under the DRS eligibility provisions, as a foreign private issuer, we are allowed to follow our home country practice in lieu of the requirements set out in Rule 5210(c), subject to certain exceptions. We will be relying on this for an exemption from the DRS eligibility requirements under Rule 5210(c). We have informed the Nasdaq Stock Market about our election to comply with the laws of Singapore in lieu of the DRS eligibility provisions of Rule 5210(c).

C. Organizational Structure

We were incorporated in Singapore as a company limited by shares on September 13, 1999. As of the date of this annual report, our principal operating subsidiaries include Hoshin GigaMedia and FunTown World Limited. Hoshin GigaMedia, our wholly owned subsidiary incorporated in Taiwan, operates our digital entertainment service business in Taiwan. FunTown World Limited, our wholly owned subsidiary incorporated in the British Virgin Islands, operates our digital entertainment service business in Hong Kong and Macau.

The following organization chart and table set forth our business structure and selected information for each of our principal subsidiaries as of the date of this annual report:



* Includes our operating subsidiaries or companies holding material investments or contracts only. All subsidiaries are 100% owned unless otherwise indicated.

Entity	Place of Incorporation	Relationship
<i>Held by our Company</i>		
GigaMedia International Holdings Limited	British Virgin Islands	Wholly-owned subsidiary
<i>Held by GigaMedia International Holdings Limited</i>		
GigaMedia Online Entertainment Corp.	Cayman Islands	Wholly-owned subsidiary
Cambridge Entertainment Software Limited	British Virgin Islands	Wholly-owned subsidiary
GigaMedia (HK) Limited	Hong Kong	Wholly-owned subsidiary
GigaMedia (Cayman) Limited	Cayman Islands	Wholly-owned subsidiary
<i>Held by GigaMedia Online Entertainment Corp.</i>		
FunTown World Limited	British Virgin Islands	Wholly-owned subsidiary
GigaMedia Freestyle Holdings Limited	British Virgin Islands	Wholly-owned subsidiary
Megabiz Limited	British Virgin Islands	Wholly-owned subsidiary
<i>Held by FunTown World Limited</i>		
FunTown Hong Kong Limited	Hong Kong	Wholly-owned subsidiary
<i>Held by GigaMedia (Cayman) Limited</i>		
Hoshin GigaMedia Center Inc.	Taiwan	Wholly-owned subsidiary
GigaMedia Development Corporation	Taiwan	Wholly-owned subsidiary
GigaMedia Cloud Services Co. Ltd.	Taiwan	Wholly-owned subsidiary
<i>Held by Hoshin GigaMedia Center Inc.</i>		
Gaminfinity Publishing Co. Ltd.	Taiwan	Wholly-owned subsidiary
Play2gether Digital Technology Co. Ltd.	Taiwan	Wholly-owned subsidiary
<i>Held by Giga Development Corporation</i>		
Wen He Investment Ltd.	Taiwan	Wholly-owned subsidiary
<i>Held by GigaMedia(HK) Limited</i>		
Shanghai Pontoon Networking Technology Co., Ltd.	China	Wholly-owned subsidiary

D. Property, Plant and Equipment

As of April 6, 2020, we leased approximately 28,000 square feet as office premises as our corporate head office in Taipei, Taiwan and approximately 4,000 square feet as office premises for FunTown's office in Hong Kong.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

Unless stated otherwise, the discussion and analysis of our financial condition and results of operations in this section apply to our consolidated financial statements as prepared in accordance with U.S. GAAP. You should read the following discussion of our financial condition and results of operations together with the consolidated financial statements and the notes to these statements included elsewhere in this annual report.

A. Operating Results

Overview

We are a diversified provider of digital entertainment services. Our only segment and principal business is our digital entertainment service business, which operates a portfolio of digital entertainment products, primarily targeting digital entertainment service users across Asia.

In 2019, we had total operating revenues of approximately US\$6.6 million, which represents a decrease of approximately US\$0.5 million year-over-year. Our total costs and expenses decreased by approximately US\$2.3 million year-over-year to US\$9.7 million, primarily due to reduced costs, which are in line with the decreased revenues, a reduction in overall expenses, the recognition of the impairment of right-of-use assets upon adoption of the new lease accounting standards on January 1, 2019, which resulted in a decrease of lease expenses in 2019. We incurred an operating loss of approximately US\$3.0 million, which represents a decrease of loss of approximately US\$1.8 million year-over-year. We recognized a non-operating income of approximately US\$1.4 million, compared to approximately US\$1.6 million in the prior year. We did not recognize any income tax benefits or expenses in 2019 or 2018. We recognized a net loss of approximately US\$1.7 million, which represents a decrease of US\$1.5 million year-over-year, primarily resulting from the aforementioned factors.

We operate our digital entertainment business in Taiwan, Hong Kong and Macau through FunTown. We acquired FunTown in January 2006 and consolidated the financial results of FunTown into our consolidated financial statements starting in January 1, 2006.

Online game operators in Taiwan and Hong Kong are currently our primary competitors. Given the low barriers to entry in the digital entertainment industry and the increasing popularity of Internet-based businesses, there are a large number of potential competitors scattered throughout many different segments of the software and Internet industries. In addition to the aforementioned competitors, traditional entertainment service providers and other entities, many of which have significant financial resources and brand name recognition, may provide digital entertainment services in the future, and thus become our competitors.

Faced with our known competitors, and most likely additional new competitors that may be established in the near future, we will continue to improve on the principal competitive factors that we believe can differentiate our product offerings from those offered by our competitors, including: brand, technology, financial stability and resources, proven track record, independent oversight and transparency of business practices in our industry.

In 2019, our digital entertainment business generated revenue of approximately US\$6.6 million, gross profit of approximately US\$3.6 million, and operating loss of approximately US\$1.0 million, excluding corporate and back-office operating expenses of approximately \$2.0 million.

Certain Significant Events Affecting Our Results of Operations for 2017, 2018 and 2019

Termination of a game license

We have entered licensing arrangements for our digital entertainment business and, in 2015, prepaid licensing and royalty fees for one of the licensed games had been fully impaired and as a result the cost became nil. In 2017, we reached an agreement with the licensor of that gaming development company to terminate the license by compensating us in the amount of US\$1.75 million. Accordingly, we recognized a gain of approximately US\$1.7 million as a reduction of operating expenses in the consolidated statements of operations in 2017.

Liquidation of a subsidiary

In October 2017, a subsidiary of ours in the U.S. dissolved and liquidated, which process was completed in February 2018. The gain that resulted from such liquidation was treated as capital gain, which is exempt from U.S. withholding tax. As such, there was a reversal of deferred income tax liabilities of US\$1.7 million as such deferred income tax liabilities were originally accrued for a potential withholding obligation upon possible distribution.

Impairment Losses Related to Underperforming Projects in Our Digital Entertainment Service Business

We incurred certain impairment losses in our digital entertainment service business in 2019 and 2018 as described further below.

Impairment Losses on Prepaid Licensing and Royalty Fees

We recognized impairment losses of US\$85 thousand and US\$244 thousand on prepaid licensing and royalty fees in 2019 and 2018, respectively. The fees were related to certain licensed games for which the carrying amount was determined not to be fully recoverable due to quick changes in gaming fads. We did not recognize impairment losses in 2017. Prepaid licensing and royalty fees are first assessed based on the commercial viability of the launch plan of the related games, then valued using a discounted cash flow model, when reasonable grounds exist for projections, to determine fair value, incorporating available market discount information, our estimate for liquidity risk and other cash flow model related assumptions based on unobservable inputs.

Impairment Losses on Long-Lived Assets

We also recognized a US\$109 thousand impairment loss on property, plant and equipment and a US\$15 thousand impairment loss on intangible assets for capitalized software costs in 2019. While the recent years' operating losses were expected to continue in the short-term, the carrying amounts of those long-lived and intangible assets would not be recoverable based on cash flow projections. We did not recognize such losses in 2018 and 2017. Those long-lived and intangible assets, which mainly consist of information equipment and purchased software, are valued using a discounted cash flow model, when reasonable grounds exist for projections, to determine fair value, incorporating available market discount information, our estimate for liquidity risk and other cash flow model related assumptions based on unobservable inputs.

Impairment Losses on Marketable Securities and Investments

As a result of unsuccessful investments made by previous management in game studios and companies, we recognized impairment losses on marketable securities and investments of US\$52 thousand in 2017.

In 2014, we made an investment in common shares of Double2 Network Technology Co., Ltd. ("Double2"), of US\$667 thousand. As a result of consecutive and deteriorating losses incurred without encouraging prospects, we wrote down this investment to its estimated fair value of US\$194 thousand, resulting in an impairment charge of US\$290 thousand in 2015. And as a further result of its inability to reduce cash burn, we fully wrote down our investment in Double2 in 2017 to zero, resulting in an impairment charge of US\$52 thousand in 2017.

COVID-19

Our business operations could be adversely affected by uncertainty and disruption resulting from the global spread of the coronavirus disease 2019 (COVID-19). While our operations in Taiwan and Hong Kong have so far not been severely affected, we are unable to predict the extent to which the global COVID-19 pandemic may adversely impact our business operations, financial performance and results of operations for fiscal year 2020. We have implemented strict hygiene and social distancing practices in our daily operations in order to protect the safety and health of our employees. We have also established a contingency plan to ensure our business continuity against the escalating COVID-19 situation. We will continue to monitor global events and respond accordingly to any potential business disruptions that may occur.

Critical Accounting Policies

The discussion and analysis of our financial condition and results of operations are derived from our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the U.S., or U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting periods. Our significant accounting policies are closed in note 1(c) to our consolidated financial statements. We believe that the following discussion addresses the most critical accounting policies applicable to our Company, which are those that are most important to the portrayal of the financial condition and results of operations of our Company, and require management's most difficult, subjective and complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain.

Revenue Recognition and Deferral

General

On January 1, 2018, we adopted ASC Topic 606, “*Revenue from Contracts with Customers*,” using the modified retrospective transition method applied to contracts that were not complete as of the adoption date. Consolidated financial results for reporting periods beginning after January 1, 2018 are presented under ASC Topic 606, while prior period amounts continue to be reported in accordance with ASC Topic 605, “*Revenue Recognition*.” Please refer to note 1 of our consolidated financial statements contained in our previously-filed Annual Report on Form 20-F for the year ended December 31, 2017 for our revenue recognition accounting policy as it relates to revenue transactions prior to January 1, 2018. The revenue recognition accounting policy described below relates to revenue transactions from January 1, 2018 and onward, which are accounted for in accordance with ASC Topic 606.

Our recognition of revenue from contracts with customers is in accordance with the five-step revenue recognition model: (1) identify the contract with a customer; (2) identify the performance obligation in the contract; (3) determine the transaction price; (4) allocate the transaction price to each performance obligation; and (5) recognize revenue when or as we satisfy a performance obligation.

Sales taxes assessed by governmental authorities on our revenue transactions are presented on a net basis of digital entertainment service revenues in our consolidated financial statements.

In addition to the aforementioned general policies, the following are the specific revenue recognition policies for revenue from contracts with customers.

Digital Entertainment Product and Service Revenues

Digital entertainment product and service revenues are mainly generated through sale of virtual points and in-game items, and those virtual goods purchased in our games can only be consumed in our games. Therefore, we regard the sale of a virtual good as a service, where the related performance obligation is satisfied over time, and revenues are recognized by measuring progress toward satisfying the performance obligation in a manner that best depicts the transfer of goods or services to the customer. Accordingly, we recognize revenues from the sale of virtual goods over the period of time using the output method, which is generally the estimated service period.

Digital entertainment product and service revenues are generated through the sale of virtual points, prepaid cards and game packs via various third-party storefronts, distributors and payment channels, including but not limited to the “Google Play Store,” the “Apple App Store,” convenience stores, telecom service providers and other payment service providers. Proceeds from sales of prepaid cards and game packs, net of sales discounts, and virtual points are deferred when received, and revenue is recognized upon the actual usage of the playing time or in-game virtual items by the end-users, over the estimated useful life of virtual items, when the game is terminated and the period of refund claim for any sold virtual items is ended in accordance with our published policy, or when the likelihood of the customer exercising the remaining rights becomes remote. (See “Deferred Revenues and Breakage” below for more discussion of accounting treatments of the unexercised rights.)

Estimated Service Period

The virtual goods for our games may have different service periods. We use the weighted average number of days of a player’s payment interval as the estimate for the service period of each game. We evaluate the appropriateness of such estimates quarterly to see if they are in line with our observations in the operations. We believe this provides a reasonable depiction of the transfer of services to our customers, as it is the best representation of the time period during which our customers play our games. Determining the estimated service period is subjective and requires management’s judgment. Future usage patterns may differ from historical ones, and therefore the estimated service period may change in the future. The estimated service periods for players of our current games are generally less than 6 months.

Principal Agent Considerations

For the revenues generated from our digital entertainment offerings which were licensed to us for using, marketing, distributing, selling and publishing, and for the sales of our products and services via third-party storefronts and other channels, we evaluate to determine whether our revenues should be reported on a gross or net basis. Key indicators that we evaluate in determining whether we are the principal in the sale (gross reporting) or an agent (net reporting) include, but are not limited to:

- which party is primarily responsible for fulfilling the promise to provide the specified good or service; and
- which party has discretion in establishing the price for the specified good or service.

Based on our evaluation of various indicators, we report revenues on a gross basis for games that we publish and operate, as we are, and we present ourselves as, responsible for fulfilling the promise of delivering the virtual goods in the game and maintaining the game environment for customers' consumption of such virtual goods. We have the discretion in establishing the price for those virtual goods, including the power to decide the range and extent of price discount or quantity discount, while the licensors or the third-party channels charge a fixed percentage of fees for such sales. And any loss on the receivables has to be absorbed by us and not the third-party channels.

Deferred Revenues and Breakage

Deferred revenues representing contract liabilities consist mainly of the advanced income related to our digital entertainment business. Deferred revenue represents proceeds received relating to the sale of virtual points and in-game items that are activated or charged to the respective user account by users, but which have not been consumed by the users or expired. Deferred revenue is credited to profit or loss when the virtual points and in-game items are consumed or have expired. Pursuant to relevant requirements in Taiwan, as of December 31, 2018 and 2019, cash totaling \$518 thousand and \$531 thousand, respectively, had been deposited in an escrow account in a bank as a performance bond for the users' prepayments and virtual points, and is included within restricted cash in the consolidated balance sheets.

For deferred revenues, some users may not exercise all of their contractual rights, and those unexercised rights are referred to as breakage. We estimate and recognize the breakage amount as revenue when the likelihood of the customer exercising the remaining rights becomes remote. We consider a variety of data points when determining the estimated breakage amount, including the time when we ceased selling prepaid products for certain services and when such prepaid products were last used in charging users' accounts.

Prepaid Licensing and Royalty Fees

Our Company, through our subsidiaries, routinely enters into agreements with licensors to acquire licenses for using, marketing, distributing, selling and publishing digital entertainment offerings.

Prepaid licensing fees paid to licensors are amortized on a straight-line basis over the shorter of the estimated useful economic life of the relevant product and service or license period, which is usually within one to two years.

Prepaid royalty fees and related costs are initially deferred when paid to licensors and amortized as operating costs based on certain percentages of revenues generated by the licensee from operating the related digital entertainment product and service in the specific country or region over the contract period.

Whenever events or changes in circumstances indicate that the carrying amount of our prepaid licensing and royalty fees may not be recoverable, we test its recoverability by comparing the carrying value of the item in question to its undiscounted cash flows. If the carrying amounts of the related prepayments were determined to be greater than their expected future undiscounted cash flows, the estimated fair values of prepaid licensing and royalty fees are determined based on their discounted cash flows.

Based on the analysis, we estimated the fair values of certain prepaid licensing and royalty fee assets to be impaired, and recognized impairment charges of US\$244 thousand and US\$85 thousand on prepaid licensing and royalty fees in 2018 and 2019, respectively.

We have entered licensing arrangements for our digital entertainment business and in 2015, prepaid licensing and royalty fees for one of the licensed games had been fully impaired and, as a result, the cost became nil. In 2017, we reached an agreement with the licensor of that gaming development company to terminate the license by compensating us in the amount of US\$1.75 million. Accordingly, we recognized a gain of US\$1.7 million as a reduction of operating expenses in the consolidated statements of operations in 2017.

Impairment of Long-Lived Assets

Long-lived assets other than goodwill not being amortized are reviewed for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value of an asset might not be recoverable from its related future undiscounted cash flows. If such assets are considered to be impaired, the impairment to be recognized is measured by the extent to which the carrying amount of the assets exceeds the estimated fair value of the assets. Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary. When impairment is identified, the carrying amount of the asset is reduced to its estimated fair value, and is recognized as a loss from operations.

Leases

General

On January 1, 2019, we adopted Accounting Standards Codification (“ASC”) Topic 842, “*Leases*,” using the modified retrospective transition method applied to contracts that were not complete as of the adoption date. Consolidated financial results for reporting periods beginning after January 1, 2019 are presented under ASC Topic 842, while prior period amounts continue to be reported in accordance with ASC Topic 840, “*Leases*”. Please refer to note 1 of our consolidated financial statements for information about the impact of adoption on our consolidated financial statements. Please refer to note 1 of our consolidated financial statements contained in our previously-filed Annual Report on Form 20-F for the year ended December 31, 2018 for our lease accounting policy as it relates to lease transactions prior to January 1, 2019. The leases accounting policy described below relates to lease transactions from January 1, 2019 and onward, which are accounted for in accordance with ASC Topic 842.

We determine if an arrangement is or contains a lease at contract inception. In certain situations, judgment may be required in determining if a contract contains a lease. For these arrangements, there is judgment in evaluating if the arrangement provides us with an asset that is physically distinct, or that represents substantially all of the capacity of the asset, and if we have the right to direct the use of the asset. Lease assets and liabilities are recognized based on the present value of future lease payments over the lease term at the commencement date. Included in the lease liability are future lease payments that are fixed, in-substance fixed, or are payments based on an index or rate known at the commencement date of the lease. Variable lease payments are recognized as lease expenses as incurred, and generally relate to variable payments made based on the level of services provided by the lessor of our leases. The operating lease right-of-use (“ROU”) asset also includes any lease payments made prior to commencement, initial direct costs incurred, and lease incentives received. As most of our leases do not provide an implicit rate, we generally use our incremental borrowing rate in determining the present value of future payments. The incremental borrowing rate represents the rate required to borrow funds over a similar term to purchase the leased asset, and is based on the information available at the commencement date of the lease. For leased assets with similar lease terms and asset type we applied a portfolio approach in determining a single incremental borrowing rate to apply to the leased assets.

In determining our lease liability, the lease term includes options to extend or terminate the lease when it is reasonably certain that we will exercise such option. Leases with an initial term of 12 months or less are not recorded on the balance sheet, and we recognize lease expense for these leases on a straight-line basis over the lease term.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, our Company remeasures the lease liabilities with a corresponding adjustment to the ROU assets.

Operating lease ROU assets are presented in “Other assets” and operating lease liabilities are presented in “Other current liabilities” and “Other liabilities” on our consolidated balance sheets.

Income Taxes

The asset and liability method is used in accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between financial reporting and tax bases of assets and liabilities. Deferred tax assets and liabilities, which are classified as noncurrent on the consolidated balance sheets, are measured using the enacted tax rate and laws that will be in effect when the related temporary differences are expected to reverse. A valuation allowance is established when necessary to reduce deferred tax assets to the amount that more-likely-than-not will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences and loss carryforwards become deductible.

In addition, we recognize the financial statement impact of a tax position when it is more-likely-than-not that the position will be sustained upon examination. If the tax position meets the more-likely-than-not recognition threshold, the tax effect is measured at the largest amount that is greater than a 50% likelihood of being realized upon settlement. Interest and penalties on an underpayment of income taxes are reflected as income tax expense in the consolidated financial statements.

In October 2017, a subsidiary of ours in the U.S. dissolved and liquidated, for which it filed a final tax return in February 2018. The gain resulted from such liquidation was treated as capital gain, which was exempt from U.S. withholding tax. As such, there was a reversal of the deferred income tax liabilities of US\$1.7 million as such deferred income tax liabilities were originally accrued for a potential withholding obligation upon possible distribution.

As of December 31, 2017, 2018 and 2019, we recognized valuation allowances of US\$9.9 million, US\$11.8 million and US\$12.7 million, respectively, on our deferred tax assets to reflect uncertainties related to our ability to utilize these deferred tax assets, which consist primarily of certain net operating loss carryforwards and loss on equity method investment. We considered both positive and negative evidence, including forecasts of future taxable income and our cumulative loss position, and continued to report a valuation allowance against our deferred tax assets as of December 31, 2017, 2018 and 2019. We continue to review all available positive and negative evidence in each jurisdiction and our valuation allowance may need to be adjusted in the future as a result of this ongoing review. Given the magnitude of our valuation allowance, future adjustments to this allowance based on actual results could result in a significant adjustment to our results of operations.

In 2017, the valuation allowance on the deferred tax assets decreased by US\$1.9 million to US\$9.9 million, mainly due to the addition of US\$745 thousand, utilization of US\$3.4 million and exchange difference of US\$683 thousand. In 2018, the valuation allowance on the deferred tax assets increased by US\$1.8 million to US\$11.8 million, mainly due to an addition of US\$1.6 million of the valuation allowance to loss carryforward generated from our Taiwan and Hong Kong businesses. In 2019, the valuation allowance on the deferred tax assets increased by US\$1.0 million to US\$12.7 million, mainly due to an addition of US\$0.7 million to the valuation allowance to loss carryforward generated from our Taiwan and Hong Kong businesses.

The effect of the changes of the valuation allowance decreased our income tax benefit by US\$745 thousand, US\$2.1 million and US\$723 thousand, for the years ended December 31, 2017, 2018 and 2019, respectively.

Recently Adopted Accounting Pronouncements

Lease

The FASB issued new lease accounting guidance in ASU No. 2016-02, *Leases (Topic 842)*, in February 2016. Under the new guidance, lessees will be required to recognize for all leases (with the exception of short-term leases), at the commencement date, (a) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and (b) a ROU asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. When measuring assets and liabilities arising from a lease, a lessee (and a lessor) should include payments to be made in optional periods only if the lessee is reasonably certain to exercise an option to extend the lease or not to exercise an option to terminate the lease. Similarly, optional payments to purchase the underlying asset should be included in the measurement of lease assets and lease liabilities only if the lessee is reasonably certain to exercise that purchase option. 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. Our Company implemented the amendments in ASU 2016-02 as of January 1, 2019 using a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements.

The FASB issued ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, in July 2018. Entities originally were required to adopt the new leases standard using a modified retrospective transition method. Under that transition method, an entity initially applied the new leases standard (subject to specific transition requirements and optional practical expedients) at the beginning of the earliest period presented in the financial statements (which was January 1, 2017, for calendar-year-end public business entities that adopted the new leases standard on January 1, 2019). This means that starting on January 1, 2017 (for those calendar-year-end public business entities just described), lessees were required to recognize lease assets and liabilities for all leases even though those leases might have expired before the effective date. Lessees were also required to provide the new and enhanced disclosures for each period presented, including the comparative periods. The ASU 2018-11 provided another transition method in addition to the existing transition method by allowing entities to initially apply the new leases standard at the adoption date (such as January 1, 2019, for calendar year-end public business entities) and recognize a cumulative-effect adjustment to the opening balance of retained earnings or accumulated deficits in the period of adoption.

Topic 842 was effective for our fiscal year beginning January 1, 2019. We elected the package of practical expedients in ASC 842-10-65-1(f) and the additional transition method provided in ASU 2018-11. We initially applied the new leases standard at the adoption date and did not restate the comparative periods when transitioning to ASC 842, and recognized a cumulative-effect adjustment to the opening balance of retained earnings or accumulated deficits in the period of adoption. Accordingly, we accounted for our existing operating leases as operating leases under the new guidance, without reassessing (a) whether the contracts contain a lease under ASC 842, (b) whether classification of the operating leases would be different in accordance with ASC Topic 842, or (c) whether the unamortized initial direct costs before transition adjustments (as of December 31, 2018) would have met the definition of initial direct costs in ASC 842 at lease commencement.

The cumulative effect adjustment recorded to our accumulated deficits was US\$1.1 million (see our consolidated statements of changes in shareholders' equity) and included the impact from the following adjustments to our consolidated balance sheet at January 1, 2019:

(in US\$ thousands)	Balance at December 31, 2018	Adjustments due to adoption of new leases accounting standard	Balance at January 1, 2019
Consolidated Balance Sheet			
Liabilities			
Other noncurrent liabilities	\$ —	\$ 1,056	\$ 1,056
Shareholders' equity			
Accumulated deficit	(228,246)	(1,056)	(229,302)

The cumulative effect of the new leases accounting standard are mainly with respect to recognizing the lessee's lease liability under operating leases and impairments of the corresponding right-of-use assets, as such impairments occurred before the date of initial application.

Recent Accounting Pronouncements Not Yet Adopted

Financial Instruments

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which is an accounting update to amend the guidance on the impairment of financial instruments that are not measured at fair value through profit and loss. The amendment introduces a current expected credit loss (CECL) model based on expected losses rather than incurred losses to estimate credit losses on financial instruments measured at amortized cost and requires a broader range of reasonable and supportable information to estimate expected credit loss. In addition, under the amendment, an entity recognizes an allowance for expected credit losses on financial instruments measured at amortized cost and available-for-sale debt securities rather than the current methodology of delaying recognition of credit losses until it is probable a loss has been incurred. The amendment is effective for fiscal years beginning after December 15, 2019, and earlier adoption is permitted as of the fiscal years beginning after December 15, 2018. The adoption of the amendments are not expected to have a material impact on our Company's financial position, results of operations, cash flow and financial statement disclosures.

Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement*, which is an accounting update to amend fair value measurement disclosure requirements to eliminate, add and modify certain disclosures to improve the effectiveness of such disclosure. The amendments removed (1) the disclosure requirements for transfers between Levels 1 and 2 of the fair value hierarchy, (2) the policy for timing of transfers between levels of the fair value hierarchy, and (3) the valuation processes for Level 3 fair value measurements. Additionally, the amendments modified the disclosure requirements for investments in certain entities that calculate net asset value and measurement uncertainty. Finally, the amendments added disclosure requirements for the changes in unrealized gains and losses included in other comprehensive income for recurring Level 3 fair value measurements and the range and weighted average of significant unobservable inputs used to develop Level 3 measurements. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. This amendment is effective for annual periods beginning after December 15, 2019. Early adoption is permitted. The adoption of this amendment is not expected to have a material impact on the Company's financial statement disclosures.

Retirement Plan

In August 2018, the FASB issued ASU No. 2018-14, *Compensation—Retirement Benefits — Defined Benefit Plans — General* (Subtopic 715-20): Disclosure Framework — Changes to the Disclosure Requirements for Defined Benefit Plans, which is an accounting update to modify the disclosure requirements by removing, modifying and clarifying disclosures related to defined benefit plans. This amendment modified the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. Certain disclosure requirements have been removed while the disclosure requirements of (1) the weighted-average interest crediting rates for cash balance plans and other plans with promised interest crediting rates; and (2) an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period, have been added. The amendment also clarified the disclosure requirements with respect to the projected benefit obligation and the accumulated benefit obligation. The amendment is effective for fiscal years ending after December 15, 2020. Early adoption is permitted. The amendments should be applied on a retrospective basis to all periods presented. The adoption of this amendment is not expected to have a material impact on our Company's financial statement disclosures.

Intangibles—Goodwill and Other

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software* (Subtopic 350-40), which is an accounting update to align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The amendment also requires the entity to present capitalized implementation costs and the related amortization in the same line item in the balance sheet, income statement and statement of cash flows as the presentation of the hosting (service) element of the arrangement. The amendment is effective for our Company's fiscal years beginning after December 15, 2019. Early adoption is permitted. The amendment should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Our Company will adopt the amendments in this Update for fiscal years beginning January 1, 2020. The adoption of this amendment is not expected to have a material impact on our financial position, results of operations, cash flows and financial statement disclosures.

Income Taxes

In December 2019, the FASB issued ASU 2019-12 *Income Taxes* (Topic 740), which is an amendment that (i) eliminated certain exceptions for recognizing deferred taxes liability associated with ownership changes in foreign equity method investments, performing intraperiod allocation, and calculating income taxes in interim periods for year-to-date losses that exceed anticipated losses, (ii) simplified income tax accounting for franchise taxes that are partially based on income, transactions with a government that results in a step-up in the tax basis of goodwill, separate financial statements of legal entities that are not subject to tax, and (iii) enacted changes in tax laws in interim periods. This amendment is effective for our Company's fiscal years beginning after December 15, 2020. Early adoption is permitted. The adoption of this amendment is not expected to have a material impact on our Company's financial position, results of operations, cash flow and financial statement disclosures.

Taxation

Our major tax jurisdictions are located in Taiwan and Hong Kong.

The corporate income tax rate in Taiwan is 20%, effective from 2018. In addition to the corporate income tax rate, all retained earnings generated beginning January 1, 1998 by our subsidiaries under Taiwan law and not distributed as dividends in the following year are imposed to a retained earnings tax, presently at 5%. This rule applies primarily to our FunTown online portal, whose principal operating entities are incorporated under Taiwan law.

In 2017, the Taiwanese government introduced regulations of taxes on cross-border electronic services provided by foreign enterprises, including value-added tax and income tax, which are at the same rates as with domestic enterprises. Our subsidiaries outside Taiwan are required to comply with such tax regulations when services are provided to users based in Taiwan via the Internet or other electronic means. Pursuant to the new regulations, additional value-added tax amounting to US\$95 thousand was levied in May 2017.

On January 1, 2006, the Taiwanese government enacted the Alternative Minimum Tax (“AMT”) Act. Taxes imposed under the AMT Act are supplemental tax payable if the income tax payable pursuant to the R.O.C. Income Tax Act is below the minimum amount prescribed under the AMT Act. The AMT rate for business entities is 10%. The taxable income for calculating the AMT includes most income that is exempted from income tax under various legislation such as tax holidays and investment tax credits. For example, gains on disposal of marketable securities from our Taiwan-based entities were exempt from income tax based on Taiwan tax laws prior to the AMT Act. However, such gains will need to be included for the purpose of calculating the AMT.

The corporate income tax rate in Hong Kong is 16.5%, which applied primarily to our digital entertainment service operations in Hong Kong.

Inflation and Foreign Currency Fluctuation

We mainly operate our business in Taiwan and Hong Kong. Both economies have exhibited monetary and economic stability in recent years, with mild inflation and relatively narrow currency fluctuations. Taiwan’s inflation rate in 2019 was approximately 0.56% and Hong Kong’s was approximately 2.9%. With respect to the exchange rate, the NT dollar against the US dollar slightly fluctuated, between N\$29.9 and NT\$31.7 to the US dollar during 2019. The Hong Kong dollar, under its linked exchange rate system, is pegged with the US dollar at a fixed rate of HK\$7.80 to the US dollar, and can trade between HK\$7.75 and HK\$7.85. In spite of the global outbreak in early 2020 of COVID-19, up to April 2020 both of Taiwan and Hong Kong economies maintained overall stability. Nonetheless, please note that significant global fluctuations caused by a further spread of the pandemic may easily transmit to Taiwan and Hong Kong within a few months.

Please see Item 11, “Quantitative and Qualitative Disclosures about Market Risk” for a discussion regarding our foreign currency risk exposure.

Results of Operations

Factors Affecting Our Performance

We believe that the following are the principal factors affecting our results of operations:

Competition. Our digital entertainment service business operates in an extremely competitive industry and our cloud service business may face strong future industry competition as the cloud computing industry grows in Asia. Our digital entertainment service business is characterized by rapid technological change and we face significant and intense competition from entertainment software design houses, application service providers and casual games operators.

For each of our businesses, we cannot assure you that we will be successful in adapting to technological developments and achieving widespread acceptance of our services before our competitors offer services similar to our current or prospective offerings. As a consequence, we may lose our existing customers and not expand our client base, which would have a material adverse effect on our revenues and financial condition.

The table below presents, for the years indicated, information regarding our revenues, costs and expenses for our consolidated operations.

For the Year Ended December 31,

	2017		2018		2019	
	Amount in US\$ thousands	% of total revenues	Amount in US\$ thousands	% of total revenues	Amount in US\$ thousands	% of total revenues
OPERATING REVENUES						
Digital entertainment service revenues	\$ 11,596	100.0	\$ 7,101	100.0	\$ 6,645	100.0
COSTS OF REVENUES						
Cost of digital entertainment service revenues	(5,098)	(44.0)	(3,585)	(50.5)	(3,064)	(46.1)
Gross profit	6,498	56.0	3,516	49.5	3,581	53.9
OPERATING EXPENSES						
Product development and engineering expenses	(1,072)	(9.2)	(1,091)	(15.4)	(1,186)	(17.8)
Selling and marketing expenses	(3,993)	(34.4)	(3,297)	(46.4)	(1,995)	(30.0)
General and administrative expenses	(3,528)	(30.4)	(3,684)	(51.9)	(3,182)	(47.9)
Impairment loss on property, plant, and equipment	—	0.0	—	0.0	(109)	(1.7)
Impairment loss on intangible assets	—	0.0	—	0.0	(15)	(0.2)
Impairment loss on prepaid licensing and royalty fees	—	0.0	(244)	(3.4)	(85)	(1.3)
Gain on termination of licensing agreement	1,732	14.9	—	0.0	—	0.0
Other	(127)	(1.1)	(23)	(0.3)	(24)	(0.4)
Total operating expenses	(6,988)	(60.3)	(8,339)	(117.4)	(6,596)	(99.3)
Loss from operations	(490)	(4.2)	(4,823)	(67.9)	(3,015)	(45.4)
NON-OPERATING INCOME (EXPENSES), NET	(95)	(0.8)	1,630	23.0	1,356	20.4
LOSS BEFORE INCOME TAXES	(585)	(5.0)	(3,193)	(45.0)	(1,659)	(25.0)
INCOME TAX BENEFIT	1,671	14.4	—	0.0	—	0.0
NET INCOME (LOSS) ATTRIBUTABLE TO SHAREHOLDERS OF GIGAMEDIA	<u>\$ 1,086</u>	<u>9.4</u>	<u>\$ (3,193)</u>	<u>(45.0)</u>	<u>\$ (1,659)</u>	<u>(25.0)</u>

The key items included in our consolidated statements of operations are:

OPERATING REVENUES. Our operating revenues consist of revenues from our digital entertainment service business. Digital entertainment service revenues are related to our digital entertainment business in Asia and are collected through the sale of virtual points, pre-paid cards and game packs, and through licensing fee revenues. Revenues are collected in accordance with contracts and through monthly payment or in advance payments with discounts, and are recognized when (or as) we satisfy the related performance obligation.

COSTS OF REVENUES. Costs of revenues consist primarily of digital entertainment service processing costs, licensing and royalty fees, bandwidth costs, production costs for prepaid cards and game packs, amortization of intangible assets, cost of products, customer service department costs, operational department costs, depreciation, maintenance and other overhead expenses directly attributable to the provision of our digital entertainment services.

OPERATING EXPENSES. Operating expenses include product development and engineering expenses, selling and marketing expenses, general and administrative expenses, bad debt expenses and impairment losses on long-lived assets and prepaid licensing and royalty fees.

NON-OPERATING INCOME (EXPENSES), NET. Non-operating income and expenses include interest income and expenses, gain or loss on sales of marketable securities, and foreign exchange gain or loss.

INCOME TAX EXPENSES (BENEFIT). Taxes include current income tax in various jurisdictions in which our subsidiaries operate and deferred tax expenses related to temporary tax assets or liabilities that arise due to the timing differences between book profits and taxable profits that originate in one period and are capable of reversal in one or more subsequent periods. Taxes are measured using the tax rates and laws that have been enacted or subsequently enacted as of the date of the financial statements.

Year to Year Comparisons

Please refer to the Item 5 in our previously-filed Annual Report on Form 20-F for the year ended December 31, 2018 for the comparisons of our results of operations in fiscal years 2018 and 2017.

In formulating our 2018 and 2019 business plan, we conducted a comprehensive strategic business review. Our review led us to conclude that:

- Compared to our in-house offerings, the operations of licensed games bear an uncompetitive cost structure where licensing costs and channel costs usually take a huge bite out of earnings, leaving little room for any marketing strategies.
- The operations of licensed games are inherently dependent on the licensors and it is therefore difficult for us to take the initiative. As a result, these games are often slow in responding to a fad, a market trend or even a permanent change in customers' preference.

Accordingly, in 2018 and 2019 we implemented a strategy of optimizing our product portfolio by trimming off or terminating products or services that were below requirements, and selectively introducing licensed games. At the same time, we continued consolidating substantial resources for developing our own offerings, into which direct investment was US\$1.1 million and US\$1.2 million during 2018 and 2019, respectively.

In 2018 and 2019, we also invested further to enhance our customer relationship management system, which will contribute to our operations in building up relationships, saving marketing costs, and creating capacity for providing augmented products and services. The cultivation of a loyal customer base will eventually further boost customer value and create revenues and profits.

Operating Revenues and Gross Margin

	For the Year Ended December 31,				
	2017	2018		2019	
	Amount in US\$ thousands	Amount in US\$ thousands	% Change from 2017	Amount in US\$ thousands	% Change from 2018
Operating revenues	\$ 11,596	\$ 7,101	(38.8)%	\$ 6,645	(6.4)%
Cost of revenues	(5,098)	(3,585)	(29.7)%	(3,064)	(14.5)%
Gross profit	<u>\$ 6,498</u>	<u>\$ 3,516</u>	(45.9)%	<u>\$ 3,581</u>	1.8%
Gross margin rate	56.0%	49.5%	—	53.9%	—

Operating Revenues

Our operating revenue in 2019 decreased by 6.4% from 2018, mainly due to an 11.5% decrease in revenues from mobile game revenues to US\$3.5 million in 2019 from US\$4.0 million in 2018, where revenues from certain role playing games gradually declined despite retention of core players with fair ARPPU (average revenue per paying user). Revenues from our legacy *MahJong* and casino games were US\$1.8 million in 2019, which was similar to such amount in 2018.

Gross Margin

Our gross margin fluctuates with players paying through different channels, changes in price and product mix, cost improvement, and exchange rate, among other factors. Furthermore, our gross margins are negatively impacted in the year when upfront fees or initial costs are amortized for a newly-introduced licensed game.

Our gross profit was US\$3.6 million in 2019 as compared to US\$3.5 million in 2018. Gross profit margin was 53.9 % in 2019 as compared with 49.5% in 2018, mainly as a result of improved cost structure through better management of players' paying channel and less initial costs and fewer launches of new licensed games in 2019.

Operating Expenses

For the Year Ended December 31,

	2017		2018		2019	
	Amount in US\$ thousands		Amount in US\$ thousands	% Change from 2017	Amount in US\$ thousands	% Change from 2018
Product development and engineering expenses	\$ (1,072)		\$ (1,091)	1.8%	\$ (1,186)	8.7%
Selling and marketing expenses	(3,993)		(3,297)	(17.4)%	(1,995)	(39.5)%
General and administrative expenses	(3,528)		(3,684)	4.4%	(3,182)	(13.6)%
Impairment loss on property, plant, and equipment	—		—	N/A	(109)	N/A
Impairment loss on intangible assets	—		—	N/A	(15)	N/A
Impairment loss on prepaid licensing and royalty fees	—		(244)	N/A	(85)	(65.2)%
Gain on termination of licensing agreement	1,732		—	(100.0)%	—	N/A
Other	(127)		(23)	(81.9)%	(24)	4.3%
Total operating expenses	\$ (6,988)		\$ (8,339)	19.3%	\$ (6,596)	(20.9)%
<i>Percentage of operating revenues</i>	<i>(60.3)%</i>		<i>(117.4)%</i>	—	<i>(99.3)%</i>	—
Loss from operations	\$ (490)		\$ (4,823)	884.3%	\$ (3,015)	(37.5)%
<i>Operating margin rate</i>	<i>(4.2)%</i>		<i>(67.9)%</i>	—	<i>(45.4)%</i>	—

Operating expenses decreased by US\$1.7 million, or 20.9%, to US\$6.6 million in 2019, following an increase of US\$1.3 million in 2018, or 19.3%, from US\$7.0 million in 2017.

Besides general expenditure control in 2019, our lease expenses related to office premise and other leases were reduced due to the initial application of the new lease accounting standard (ASC 842) on January 1, 2019, as a result of which we recognized, through retained earnings (accumulated deficits), an impairment on the right-of-use assets of \$1.1 million that occurred before the date of initial application. Accordingly, the related lease expenses in 2019 decreased by approximately US\$0.5 million. Marketing expenses decreased as we reduced new launches of licensed games and enhanced marketing efficiencies and the effectiveness of our marketing endeavors with respect to existing products and services. We also applied effective key performance indicators to drive performance and reduced overall expenses.

Product Development and Engineering Expenses

Our product development and engineering expenses amounted to US\$1.2 million in 2019, which was comprised of mainly personnel related expenses. This amount was similar to the amounts in 2018 and 2017.

We plan to continue our investment in developing our own offerings in 2020.

Selling and Marketing Expenses

Selling and marketing expenses decreased by 39.5% to US\$2.0 million in 2019 from US\$3.3 million in 2018, which decrease was primarily due to less new launches of licensed games in 2019, FunTown's efforts to enhance its marketing efficiency and effectiveness, and the aforementioned decrease in lease expenses as a result of the initial application of the new lease accounting standard (ASC 842) on January 1, 2019.

General and Administrative and Marketing Expenses

General and administrative expenses amounted to US\$3.2 million in 2019, representing a decrease of US\$0.5 million, or 13.6%, from US\$3.7 million in 2018, which decrease was primarily due to our stringent expenditure controls and the aforementioned decrease in lease expenses as a result of the initial application of the new lease accounting standard (ASC 842) on January 1, 2019.

Other Operating Income and Expenses

Impairment loss on prepaid licensing and royalty fees. In 2018 and 2019, we recognized impairment losses of US\$244 thousand and US\$85 thousand, respectively, on prepaid licensing and royalty fees for certain licensed games that were concluded to be impaired after we determined the carrying amount to not be fully recoverable when considering their lower-than-expected rate of attracting new gamers and retaining existing gamers.

Impairment loss on property, plant and equipment and on intangible assets. In 2019, we recognized impairment losses of US\$109 thousand and US\$15 thousand, respectively, on property, plant and equipment and on intangible assets for purchased software costs, as while the recent years' operating losses were expected to continue in the short-term, the carrying amounts of those long-lived and intangible assets would not be recoverable based on cash flow projections.

Non-Operating Income and Expenses

	For the Year Ended December 31,				
	2017		2018		2019
	Amount in US\$ thousands	Amount in US\$ thousands	% Change from 2017	Amount in US\$ thousands	% Change from 2018
Interest income	\$ 602	\$ 1,302	116.3%	\$ 1,483	13.9%
Foreign exchange gain (loss), net	(551)	267	(148.5)%	(68)	(125.5)%
Other non-operating income (expenses), net	(146)	61	(141.8)%	(59)	(196.7)%
Non-operating income (expenses), net	<u>\$ (95)</u>	<u>\$ 1,630</u>	(1815.8)%	<u>\$ 1,356</u>	(16.8)%

Non-operating income, net was US\$1.4 million in 2019 as compared to income of US\$1.6 million in 2018 and a loss of US\$95 thousand in 2017. The non-operating income, net in 2019 primarily included (1) interest income of US\$1.5 million generated from bank deposits, (2) foreign exchange loss of US\$(68) thousand, and (3) a loss of US\$(95) thousand accrued in litigation (Please refer to note 16 to our audited consolidated financial statements included in this annual report for more information). Non-operating income, net in 2018 primarily included (1) interest income of US\$1.3 million generated from bank deposits, and (2) foreign exchange gain of US\$267 thousand.

Income Tax Benefit

	For the Year Ended December 31,				
	2017		2018		2019
	Amount in US\$ thousands	Amount in US\$ thousands	% Change from 2017	Amount in US\$ thousands	% Change from 2018
Loss before income taxes	\$ (585)	\$ (3,193)	445.8%	\$ (1,659)	(48.0)%
Income tax benefit	1,671	—	(100.0)%	—	N/A
Net income (loss) attributable to shareholders of GigaMedia	<u>\$ 1,086</u>	<u>\$ (3,193)</u>	(394.0)%	<u>\$ (1,659)</u>	(48.0)%

In 2019 and 2018, neither income tax benefits nor expenses were incurred in our operations in respective tax jurisdictions, and full allowance was provided against all deferred tax assets.

B. Liquidity and Capital Resources

Our principal sources of liquidity in 2019 and 2018 were cash proceeds from the return of certain license fees as well as collection of the consideration of the sales of certain investments. Our cash and cash equivalents are held primarily in U.S. dollars and NT dollars. Our policy with respect to liquidity management is to maintain sufficient cash and cash equivalents to fund operations and strategic transactions, while placing remaining funds in higher yield investment instruments. While we have zero bank borrowing as of December 31, 2019 and 2018, we have established strong relationships with financial institutions and have the ability to secure lines of credit to fulfill operating and strategic needs.

Our future cash requirements will depend on a number of factors including:

- the rate at which we enter into strategic transactions;
- the rate at which we expand our operations and employee base;
- the timing of entry into new markets and new services offered;
- changes in revenues and cost splits with our business partners;

- the rate at which we invest in developing and licensing our products and upgrading and maintaining our network and future technologies; and
- the rate at which we grow and monetize our customer bases.

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

(in US\$ thousands)	For the Year Ended December, 31		
	2017	2018	2019
Net cash used in operating activities	\$ (1,110)	\$ (3,914)	\$ (1,567)
Net cash provided by (used in) investing activities	935	(90)	(73)
Net cash used in financing activities	(2,631)	—	—
Exchange difference	772	(347)	88
Net decrease in cash, restricted cash and cash equivalents	(2,034)	(4,351)	(1,552)
Cash, restricted cash and cash equivalents at beginning of year	66,211	64,177	59,826
Cash, restricted cash and cash equivalents at end of year	\$ 64,177	\$ 59,826	\$ 58,274

OPERATING ACTIVITIES. In 2019, our net cash used in operating activities was approximately US\$1.6 million. We collected US\$6.8 million in cash from our customers, paid US\$2.4 million for license fees, royalties and channel costs, and paid approximately US\$6.8 million to employees, suppliers and vendors. In 2018, our net cash used in operating activities was approximately US\$3.9 million. We collected US\$7.2 million in cash from our customers, paid US\$3.2 million for license fees, royalties and channel costs, and paid approximately US\$10.0 million to employees, suppliers and vendors. In 2017, our net cash used in operating activities was approximately US\$1.1 million. We collected US\$11.6 million in cash from our customers, paid US\$4.0 million for license fees, royalties and channel costs, and paid approximately US\$10.4 million to employees, suppliers and vendors, and we received return of license fees amounting to US\$1.75 million as a result of an agreement reached with the licensor.

INVESTING ACTIVITIES. Our net cash used in investing activities in 2019 was US\$73 thousand, which was primarily used for the purchase of property, plant and equipment. Our net cash used in investing activities in 2018 was US\$90 thousand, which was primarily used for the purchase of property, plant and equipment. Our net cash provided by investing activities in 2017 was US\$935 thousand. This primarily reflected proceeds of US\$1.1 million from the disposal of an equity investee in 2016.

FINANCING ACTIVITIES. Our net cash flow in financing activities in 2019 and 2018 was nil. Our net cash used in financing activities in 2017 was US\$2.6 million, mainly due to net repayments of short-term borrowings of approximately US\$2.6 million.

We believe that our existing cash, cash equivalents, and our ability to obtain short-term borrowings will be sufficient to meet our capital expenditure, debt, and operating cash obligations through 2020. We believe our working capital is sufficient for our present requirements. We continue to seek and review potential merger and acquisition opportunities on an ongoing basis, which may be funded through cash on our balance sheet, proceeds from sales of investments, bank borrowings or equity offerings. We do not believe that any potential merger or acquisition that we may be engaged in would alter our goal of preserving sufficient cash and cash equivalents to fund future operations.

Capital Expenditures

We typically finance our capital expenditures through cash holdings. Our gross capital expenditures in continuing operations for equipment, furniture and fixtures, software, intangible assets and other deferred assets were US\$0.2 million, US\$0.1 million and US\$0.1 million for 2017, 2018 and 2019, respectively. Capital expenditures during 2019 were primarily for software and computer hardware equipment for our digital entertainment business. Our capital expenditure plans for 2020, which we expect to be primarily in software development and computer hardware equipment, will aim to support our lean growth initiatives in our digital entertainment service business. We believe our working capital is sufficient for our 2020 needs but we may adjust the amount of our capital expenditures upward or downward based on cash flow from operations, the progress of our expansion plans, and market conditions.

Dividends from Our Subsidiaries

Under Singapore tax regulations, foreign-sourced dividend income used for capital expenditures, including investments, and repayment of borrowings, is not deemed as remitted to Singapore and is therefore not taxable.

In accordance with R.O.C. law, an appropriation for legal reserve amounting to 10% of a company's net profit is required until the reserve equals the aggregate par value of such Taiwan company's issued capital stock. As of December 31, 2016, 2017 and 2018, the legal reserves of Hoshin GigaMedia were approximately US\$1.5 million, US\$1.5 million and US\$1.5 million, respectively. The reserve can only be used to offset a deficit or be distributed as a dividend of up to 50% of the reserve balance when the reserve balance has reached 50% of the aggregate paid-in capital of Hoshin GigaMedia.

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

We make investments in research and development to keep pace and remain competitive with technology advancements and product development relating to our digital entertainment service business. For the years 2017, 2018 and 2019, we incurred US\$1.1 million, US\$1.1 million and US\$1.2 million, respectively, in research and development activities.

D. Trend Information

In the digital entertainment industry, the entire global business landscape is changing. Driven by the popularity of mobile phones and tablets and social networks, games are rapidly moving from PC-based formats to browser and mobile platforms. This in turn is causing changes in game content, as casual browser and mobile games require "light" content. In our markets, Taiwan and Hong Kong, the strongest demand is for casual browser/mobile games.

We are now in the process of extending our PC-based digital entertainment platform to browser/mobile casual games. This will help us capitalize on the strong growth trends of browser/mobile games, particularly in Asia, and our expertise in casual games. We have a strong offering of casual games including Asian card-based games and *MahJong* and a good track record of developing and monetizing them, especially in the types of games that are most popular – casino games, such as poker, slots and *MahJong*. We are now leveraging that expertise to transition our game portfolio from client-based games designed for PC usage to browser/mobile games and social casino games for social networks and mobile play.

Please see Item 3, "Key Information — D. Risk Factors" and Item 5, "Operating and Financial Review and Prospects — A. Operating Results — Certain Significant Events Affecting Our Results of Operations for 2017, 2018 and 2019" for a discussion of the most recent trends in our operating costs and revenues since the end of 2019. In addition, please refer to discussions included in this Item for a discussion of known trends, uncertainties, demands, commitments or events that we believe are reasonable likely to have a material effect on our net operating revenues, income from continuing operations, profitability or capital resources, or that would cause reported financial information not necessarily to be indicative of future operating results or financial condition.

E. Off-Balance Sheet Arrangements

Other than as disclosed in note 16 to our consolidated financial statements, which disclosure is incorporated into this item, we currently do not have (a) any obligation under a guarantee contract that has any of the characteristics identified by the FASB Accounting Standards Codification; (b) a retained or contingent interest in assets transferred to an unconsolidated entity or similar arrangement that serves as credit, liquidity or market risk support to such entity for such assets; (c) any obligation under a derivative instrument that is both indexed to our Company's own stock and classified in equity, or not reflected, in our Company's statement of financial position; or (d) any obligation, including a contingent obligation, arising out of a variable interest in an unconsolidated entity that is held by, and material to, our Company, where such entity provides financing, liquidity, market risk or credit risk support to, or engages in leasing, hedging or research and development services with, our Company.

F. Tabular Disclosure of Contractual Obligations

	As of December 31, 2019				
	Payment Due by Period (in US\$ thousands)				
	Within 1 year	1-3 years	3-5 years	>5 years	Total
Operating leases	\$ 504	\$ 93	\$ 2	\$ —	\$ 599
License fees	—	—	—	—	—
Minimum guarantees against royalties	—	—	—	—	—
Total contractual cash obligations	<u>\$ 504</u>	<u>\$ 93</u>	<u>\$ 2</u>	<u>\$ —</u>	<u>\$ 599</u>

The minimum guarantees against future royalties and license fees are generally not required to be paid until the licensed games are commercially released or until certain milestones are achieved, as stipulated in the individual license agreements.

For a specific licensed game, we are committed to paying an incentive fee of \$30 thousand to the licensor for every \$500 thousand in additional revenues generated from the game during the agreement period from January 2018 to January 2020. In January 2020, we entered an extension and amendment agreement to extend the term and modified certain provisions. The extension term commenced on January 27, 2020, and expires on January 26, 2022, and the incentive fee is \$30 thousand for every \$500 thousand additional revenues generated during the extension term. Since the revenues from particular games are unpredictable, the table above only reflects incentive fee commitments that have been triggered by crossing the relevant revenue thresholds.

G. Safe Harbor

See “Disclosure Regarding Forward-Looking Statements” on page 1 of this annual report.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

The following table sets forth information with respect to our directors and executive officers as of the date of this annual report:

Name	Age	Position	Year Appointed to Current Position
HUANG, James Cheng-Ming	65	Chairman of the Board, Chief Executive Officer, Chief Financial Officer and Director	2017 ⁽¹⁾
HUANG, John Ping Chang	68	Chairman of the Compensation Committee of the Board and Independent Non-Executive Director	2012/2011 ⁽²⁾
LIU, Nick Chia-En	58	Independent Non-Executive Director	2011 ⁽³⁾
HONG, Chin Fock (Damian)	72	Independent Non-Executive Director	2013 ⁽⁴⁾
TUNG, Casey K.	69	Chairman of the Audit Committee of the Board and Independent Non-Executive Director	2012/2011 ⁽⁵⁾
HUANG, Billy Bing-Yuan	62	Independent Non-Executive Director	2013 ⁽⁶⁾

- (1) Mr. James Cheng-Ming HUANG was appointed as Chairman of the Board, Chief Executive Officer and Chief Financial Officer of our Company on May 5, 2017.
- (2) Mr. John Ping Chang HUANG was appointed as an Independent Non-Executive Director of the Board on January 31, 2011. He was also appointed as Chairman of the Compensation Committee on November 26, 2012.
- (3) Mr. Nick Chia-En LIU was appointed as an Independent Non-Executive Director of the Board on March 15, 2011. He was also appointed as a member of the Audit Committee on March 15, 2011.
- (4) Mr. Damian HONG was appointed as an Independent Non-Executive Director of the Board on October 31, 2013.
- (5) Mr. Casey K. TUNG was appointed as an Independent Non-Executive Director of the Board on November 24, 2011, and Chairman of the Audit Committee on November 5, 2012. He was also appointed as a member of the Compensation Committee on March 18, 2013.
- (6) Mr. Billy Bing-Yuan HUANG was appointed as an Independent Non-Executive Director of the Board and a member of the Audit Committee on April 18, 2013.

Biographical information with respect to each of our directors and executive officers is set forth below.

Directors

JAMES CHENG-MING HUANG is the Chairman of the Board of Directors, Chief Executive Officer and Chief Financial Officer of our Company. He has more than 30 years of experience in finance, investment and direct marketing. Mr. Huang served as President at Grand Pacific Investment & Development Co., Ltd., for eight years before joining the Company. Prior to that, He was the Director of two publicly listed companies in Thailand and Singapore, and the Chairman/ CEO of Otto-Chailease Mailorder Co., Ltd. Mr. Huang holds a master’s degree of Science in Management from MIT Sloan School of Management, U.S.

JOHN PING CHANG HUANG is an independent non-executive director of our Company. He is also currently the chairman of Taiwan-based Grand Pacific Investment & Development Co., Ltd., as well as the Chailease Resources Tech. Co., Ltd., Global Hospitality Group Inc., Beijing He Qiao Property Management Co., Ltd., and CTC Group INC. Mr. Huang holds a Bachelor of Arts degree from Soochow University and a degree of EMBA Program at National Taiwan University in Taiwan. Mr. Huang is the elder brother of Mr. Billy Bing-Yuan Huang.

NICK CHIA-EN LIU is an independent non-executive director of our Company. He was the managing director in Taiwan for a U.S. based game development company. Mr. Liu holds an MBA degree from the Stern School of Business at NYU and a bachelor's degree from the University of Southern California.

CHIN FOCK (DAMIAN) HONG is an independent non-executive director of our Company. He has more than 38 years of experience in taxation and tax law. Damian began his career with the Inland Revenue Authority of Singapore before joining KPMG and working with the firm in various capacities, including post-retirement, for more than two decades. He was also a tax consultant to the law firm Allen & Gledhill in Singapore for 12 years. Damian currently serves as an independent director of Chailease Holding Co Ltd. and Riverstone Holdings Ltd. He also serves as a director of Binjaitree, a registered charity in Singapore, as well as a non-executive director of Prima Limited. Mr. Hong lectured on a part-time basis at the Singapore Management University. He earned a bachelor's degree in Social Science at the University of Singapore and attended an international tax program at Harvard Law School.

CASEY K. TUNG is an independent non-executive director of our Company. Mr. Tung is the principal owner of the accounting offices of Casey Tung in California. Mr. Tung founded the business in 1991, which serves a number of publicly listed companies in Taiwan and in China and practices in the areas of assurance, taxation, and advisory on matters such as mergers and acquisitions, financing, and reorganizations. Mr. Tung is a member of the American Institute of Certified Public Accountants and the California Society of Certified Public Accountants. He holds a Master of Science degree in Business Administration from California State University, Long Beach and a Bachelor of Commerce degree from Soochow University in Taiwan.

BILLY BING-YUAN HUANG is an independent non-executive director of our Company. He has over 21 years of experience as an executive in the technology/media industry and a proven track record of driving growth. At The Walt Disney Company, where he served as vice president responsible for the China, Hong Kong and Taiwan markets, he launched Disney Channel and Disney Junior Channel and expanded services to new online media. At Taiwan's Videoland Communications, where he served as vice president from 1996-1998, Mr. Huang implemented a restructuring plan that transformed the business from an old production house into a modern cable television consortium distributing content for global television brands including CNN, Cartoon Network, and Discovery Channel. Prior to that, Mr. Huang was vice president of Fantasmic International, a public relations and advertising firm in Taipei, and held numerous positions with prominent advertising firms in Taipei. Mr. Huang earned a master's degree in Mass Communication from Texas Tech University and has a bachelor's degree in Journalism from Chinese Culture University in Taipei. Mr. Huang is the younger brother of Mr. John Ping Chang Huang.

B. Compensation

Compensation of Directors and Executive Officers

For the year ended December 31, 2019, the aggregate cash compensation paid by us to our directors and executive officers was approximately US\$0.4 million. For information regarding pension and retirement benefits, see note 11 to our consolidated financial statements.

As of December 31, 2019, the total outstanding number of share options granted to our directors and officers was 24,000, of which 22,680 shares were vested and 1,320 shares were unvested. As of December 31 2019, the total number of restricted stock units granted to our directors and officers was zero.

The following table summarizes, as of March 31, 2020, the outstanding options granted under our employee share option plans and equity incentive plans to our directors and executive officers as a group.

Date of Grant	Ordinary Shares Underlying Outstanding Options	Exercise Price (\$/Share)	Date of Expiration
May 20, 2011	8,000	6.25	May 20, 2021
January 5, 2012	4,000	4.0505	January 5, 2022
October 28, 2013	4,000	5.05	October 28, 2023
March 28, 2014	4,000	7.15	March 28, 2024
May 5, 2017	4,000	2.90	May 5, 2027
Total	24,000		

All options granted to our directors and executive officers were granted pursuant to the option plans and the equity incentive plans as described under "— Employee Share Option Plans and Equity Incentive Plans" below.

Employee Share Option Plans and Equity Incentive Plans

2004 Employee Share Option Plan

At the June 2004 Annual General Meeting, our shareholders approved the GigaMedia Limited 2004 Employee Share Option Plan (the “2004 Plan”) under which up to 7,000,000 common shares (1,400,000 shares after the reverse share split) of our Company were reserved for issuance. All employees, officers, directors, advisors and consultants of our Company are eligible to participate in the 2004 Plan. The 2004 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the exercise price for the option grants, to determine which eligible individuals are to receive option grants, the time or times when options grants are to be made and the number of shares subject to grant vesting schedule. The maximum contractual term under the 2004 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options.

2006 Equity Incentive Plan

At the June 2006 Annual General Meeting, our shareholders approved the GigaMedia Limited 2006 Equity Incentive Plan (the “2006 Plan”) under which up to 1,000,000 common shares (200,000 shares after the reverse share split) of our Company were reserved for issuance. The 2006 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2006 Plan. The maximum contractual term under the 2006 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options. In the event that the employee’s employment with or service to our Company is terminated prior to the lapsing of restrictions with respect to any portion of the RSUs, such portion of the RSUs shall become forfeited.

2007 Equity Incentive Plan

At the June 2007 Annual General Meeting, our shareholders approved the GigaMedia Limited 2007 Equity Incentive Plan (the “2007 Plan”) under which up to 2,000,000 common shares (400,000 shares after the reverse share split) of our Company were reserved for issuance. The 2007 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2007 Plan. The maximum contractual term under the 2007 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options. In the event that the employee’s employment with or service to our Company is terminated prior to the lapsing of restrictions with respect to any portion of the RSUs, such portion of the RSUs shall become forfeited.

2008 Equity Incentive Plan

At the June 2008 Annual General Meeting, our shareholders approved the GigaMedia Limited 2008 Equity Incentive Plan (the “2008 Plan”) under which up to 1,000,000 common shares (200,000 shares after the reverse share split) of our Company have been reserved for issuance. The 2008 Plan is administered by a committee designated by the board of directors. The committee, as plan administrator, has complete discretion to determine the grant of awards under the 2008 Plan. The maximum contractual term under the 2008 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options.

2009 Equity Incentive Plan

At the June 2009 Annual General Meeting, our shareholders approved the GigaMedia Limited 2009 Equity Incentive Plan (the “2009 Plan”) under which up to 1,500,000 common shares (300,000 shares after the reverse share split) of our Company were reserved for issuance. The 2009 Plan is administered by a committee designated by the board of directors. The committee, as plan administrator, has complete discretion to determine the grant of awards under the 2009 Plan. The maximum contractual term under the 2009 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options.

2010 Equity Incentive Plan

At the June 2010 Annual General Meeting, our shareholders approved the GigaMedia Limited 2010 Equity Incentive Plan (the “2010 Plan”) under which up to 1,000,000 common shares (200,000 shares after the reverse share split) of our Company were reserved for issuance. The 2010 Plan is administered by a committee designated by the board of directors. The committee, as plan administrator, has complete discretion to determine the grant of awards under the 2010 Plan. The maximum contractual term for the options under the 2010 Plan is 10 years. Options will be forfeited upon termination of employment, unless the relevant award agreement extends the exercisability of the outstanding options. All options, RSUs and other share-based awards are expected to be settled by issuing new shares.

Employment of Executive Officers

Officers are selected by and serve at the discretion of our board of directors. No executive officer is entitled to any severance benefits upon termination of his or her employment with our Company.

C. Board Practices

Our board of directors is currently comprised of six directors, including five independent non-executive members. Each of our directors is elected by our Company's shareholders or appointed by the directors pursuant to the Memorandum of Association and hold office until such director's successor is elected and duly qualified or until such director's earlier death, bankruptcy, insanity, resignation or removal. During fiscal 2019, our board of directors met three times, and all board of directors participated in the meetings of the board of directors. No director is entitled to any severance benefits on termination of his or her service. Our board of directors currently has a standing audit committee and compensation committee. Each of these standing committees operates under a written charter adopted by our board of directors. During fiscal 2019, our directors attended all meetings held by each committee on which such director was a member.

Our audit committee currently consists of Casey K. Tung, Nick Chia-En Liu and Billy Bing-Yuan Huang. The principal duties and responsibilities of our audit committee include: (1) overseeing and reporting on various auditing and accounting matters to our board of directors, including the selection of our independent accountants, the scope of our annual audits, fees to be paid to the independent accountants, the performance of our independent accountants and our accounting practices; (2) overseeing and reporting on various risk management matters to our board of directors; (3) considering and approving or disapproving all related-party transactions; (4) reviewing the financial statements and reports and discussing the statements and reports with our independent registered public accounting firm and management; (5) reviewing and pre-approving the engagement of our independent registered public accounting firm to perform audit services and any permissible non-audit services; (6) evaluating the performance of our independent registered public accounting firm and deciding whether to retain their services; and (7) establishing procedures for the receipt, retention and treatment of complaints received by us regarding financial controls, accounting or auditing matters. In accordance with our Articles of Association and our audit committee charter, all of the members of our audit committee must be persons who qualify as independent directors under the standards set forth in Nasdaq Rules 5605(c)(2)(A)(i) and (ii) and each of them is able to read and understand fundamental financial statements. During fiscal 2019, our audit committee met five times.

Our compensation committee currently consists of Casey K. TUNG and John Ping Chang HUANG. The principal duties and responsibilities of our compensation committee include: (1) reviewing and approving the goals and objectives relevant to the chief executive officer's and other executive officers' compensation; (2) evaluating the performance of the chief executive officer and other executive officers in light of those goals and objectives; (3) making recommendations to the Board with respect to non-employee director compensation; and (4) making recommendations to the Board with respect to incentive-compensation plans and equity-based plans. In accordance with our compensation committee charter, all of the members of the compensation committee are qualified independent directors under the standards set forth in Nasdaq Rules 5605(c)(2)(A)(i) and (ii). During fiscal 2019, our compensation committee met two times.

D. Employees

In the years ended December 31, 2017, 2018 and 2019, our total employees were 151, 154 and 136, respectively.

The following table sets out, as of the dates indicated, a breakdown of the number of our full-time employees by function:

Function	December 31		
	2017	2018	2019
Development	40	41	48
Operation	61	65	42
Customer Service	20	19	19
Administrative Support	30	29	27
	<u>151</u>	<u>154</u>	<u>136</u>

The following table sets out, as of the dates indicated, a breakdown of the number of our full-time employees by geographic location:

Location	December 31		
	2017	2018	2019
Taipei City, Taiwan	121	131	117
Hong Kong	30	23	19
	<u>151</u>	<u>154</u>	<u>136</u>

E. Share Ownership

Share Ownership of Directors and Executive Officers

The table below sets forth information as to our directors' and executive officers' share ownership in our Company as of March 31, 2020:

Person	Number of Common Shares	Number of Shares Issuable upon exercise of options
HUANG, James Cheng-Ming	873,069	*
HUANG, John Ping Chang	—	*
LIU, Nick Chia-En	—	*
TUNG, Casey K.	—	*
HUANG, Bing-Yuan	—	*
HONG, Chin Fock	—	*
Directors and executive officers as a group (6 individuals)	873,069	24,000

* Less than 1%

ITEM 7. MAJOR SHAREHOLDERS AND RELATED-PARTY TRANSACTIONS

A. Major Shareholders

The following table sets forth information known to us with respect to the ownership of our shares as of March 31, 2020 by each shareholder known by us to own more than 5% of our shares:

Name of Owner	Shares Owned	Percentage of Shares Owned
John-Lee Andre Koo ⁽¹⁾	2,159,999	19.54%
James Cheng-Ming Huang ⁽²⁾	873,069	7.90%
Collin Hwang ⁽³⁾	696,435	6.30%
Jonathan Honig ⁽⁴⁾	625,105	5.65%

- (1) Based on a Schedule 13G/A filed on August 14, 2017, through Champion Allied Limited, a British Virgin Islands company, and Symporium (PTC) Ltd, as trustee for Citadelle Trust, John-Lee Andre Koo has beneficial ownership of 2,159,999 common shares of our Company. On the 16th of November, 2015, John-Lee Andre Koo transferred his shareholding vehicle for shares of GigaMedia Limited from Best Method Limited to Champion Allied Limited. On the 14th of August, 2017, John-Lee Andre Koo transferred his share in Champion Allied Limited to Symporium (PTC) Ltd, in its capacity as trustee of Citadelle Trust. John-Lee Andre Koo is the settlor of Citadelle Trust and exercises sole voting and investment power over all of the shares of GigaMedia Limited held by Syporium (PTC) Ltd, in its capacity as trustee of Citadelle Trust. The Citadelle Trust is a revocable trust and John-Lee Andre Koo is the sole beneficiary of the trust. The address for John-Lee Andre Koo is No.6-1, Aly. 72, Ln. 114, Sec. 7, Zhongshan N. Rd., Shilin Dist., Taipei City 111, Taiwan, Republic of China.
- (2) James Cheng-Ming Huang has beneficial ownership of 873,069 common shares of our Company as of March 31, 2020. James Cheng-Ming Huang's address is 8F, No.22, Lane 407, Sec. 2 Tiding Blvd., Neihu Dist., Taipei City 114, Taiwan, Republic of China.
- (3) Based on the Schedule 13G filed with the SEC on June 19, 2017, Collin Hwang has beneficial ownership of 696,435 shares of our Company. Collin Hwang's address is 11F, No.36-10, Sec. 1, Fu-hsing South Rd., Taipei, Taiwan
- (4) Based on the Schedule 13G/A filed with the SEC on February 14, 2020, Jonathan Honig has beneficial ownership of 625,105 common shares of our Company as follows:
- (a) Includes (i) 5,145 shares held by Mr. Honig as UTMA custodian for Morgan Honig, (ii) 5,400 shares held by Mr. Honig as UTMA custodian for Skylar Honig and (iii) 6,800 shares held by Mr. Honig as UTMA custodian for Jett Honig.
- (b) Includes (i) 22,000 shares held by Titan Multi-Strategy Fund, Inc. ("Titan") (ii) 168,360 shares held by Titan Multi-Strategy Fund, Inc. Profit Sharing Plan (the "Plan")(iii)17,225 shares held by Titan Multi-Strategy Fund 401k Roth FBO Jonathan Honig and (iv) 11,700 shares held by Titan Multi-Strategy Fund 401k Roth FBO Elizabeth Honig. Mr. Honig is the President of Titan Multi-Strategy Fund, Inc. and trustee of the Plans, and in such capacities has voting and dispositive power over the securities held by such entities.
- (c) Includes (i) 5,400 shares held by Elizabeth Honig, (ii) 77,500 shares held by Elizabeth Honig Lifetime Trust, (iii) 1,200 shares held by Elizabeth Honig IRA TD Ameritrade Clearing, Custodian, (iv) 13,500 shares held by Elizabeth Honig as UTMA custodian for Jett Honig (v) 13,000 shares held by Elizabeth Honig as UTMA Custodian for Skylar Honig and (vi) 12,800 shares held by Elizabeth Honig UTMA Custodian for Morgan Honig. Elizabeth Honig and Mr. Honig are married, and Mr. Honig has voting and dispositive power of the securities held by the foregoing.

The address of Jonathan Honig is 5825 Windsor Court, Boca Raton, FL 33496.

As of March 31, 2020, we had 11,052,235 Shares outstanding, of which 6,697,627 Shares representing 60.60% of our total outstanding Shares were not held by our major shareholders as disclosed above. As of March 31, 2020, one shareholder of record with a registered address in the United States, Cede & Co., nominee of The Depository Trust Company, held 8,732,197 shares.

The amounts and percentages of common shares beneficially owned are reported on the basis of regulations of the SEC, governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a "beneficial owner" of a security if that person has or shares "voting power," which includes the power to vote or to direct the voting of such security, or "investment power," which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within 60 days. Under these rules, more than one person may be deemed a beneficial owner of securities as to which such person has no economic interest. None of our major shareholders have voting rights different from those of our other shareholders.

Description of reverse stock split

A 1-for-5 reverse stock split was approved by our shareholders at a special shareholders meeting held on December 16, 2015. The reverse stock split was effective as of December 16, 2015, which resulted in our common stock trading on a split-adjusted basis at market open on December 16, 2015. Upon completion of the reverse stock split, every five shares of common stock owned by a shareholder were combined into one share of common stock, with a proportionate adjustment made to the per-share value of common stock.

B. Related Party Transactions

We have engaged from time to time in various transactions with related parties.

For the years ended December 31, 2017, 2018 and 2019, we were not a party to any transaction with any related party that did not arise in the ordinary course of business or that was material to us.

Stock Option Grants and Employee Share Purchase

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

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

Financial Statements

See pages beginning on page F-1 in this annual report.

Dividend Policy

We have neither declared nor paid any dividends on our Shares. We anticipate that we will continue to retain any earnings for use in the operation of our business, and we do not intend to pay dividends in the foreseeable future. See Item 10, “Additional Information — B. Memorandum and Articles of Association — Dividends” in this annual report.

B. Significant Changes

Except as disclosed in this annual report, no significant change has occurred since the date of our consolidated financial statements.

ITEM 9. THE OFFER AND LISTING

Our Shares have been listed and traded on the Nasdaq Stock Market under the symbol “GIGM” since February 18, 2000.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

On December 16, 2015, we conducted a reverse stock split of the Company’s ordinary shares at a ratio of 5 to 1 to regain compliance with Nasdaq’s \$1.00 minimum bid price listing requirement. Consequently and as of March 31, 2020, an aggregate of 11,052,235 shares of our Company are issued and outstanding.

B. Memorandum and Articles of Association

Our current amended and restated memorandum and articles of association (the “Memorandum and Articles”), the full text of which was filed as an exhibit to our annual report on Form 20-F with the SEC on April 30, 2014, were first adopted on our date of incorporation and have been amended since that date. We incorporate by reference into this annual report the description of certain significant provisions of our Memorandum and Articles contained in our annual report for the year ended December 31, 2007 on Form 20-F, filed with the SEC on June 30, 2008.

There are no limitations imposed by Singapore law or by our Articles of Association on the right of a non-resident or foreign owner to hold or vote the Shares.

C. Material Contracts

Other than contracts entered into in the ordinary course of business, during the two years immediately preceding the date of this annual report, no material contracts been made, amended, or modified.

D. Exchange Controls

Exchange Controls in the R.O.C.

The R.O.C. Foreign Exchange Control Statute and regulations provide that all foreign exchange transactions must be executed by banks designated to handle such business by the Financial Supervisory Commission of the R.O.C. and by the Central Bank of the Republic of China (Taiwan). Current regulations favor trade-related foreign exchange transactions. Consequently, foreign currency earned from exports of merchandise and services may now be retained and used freely by exporters, and all foreign currency needed for the importation of merchandise and services may be purchased freely from the designated foreign exchange banks.

Trade aside, R.O.C. companies and resident individuals may, without foreign exchange approval, remit to and from the R.O.C. foreign currency of up to US\$50 million (or its equivalent) and US\$5 million (or its equivalent), respectively, in each calendar year.

Furthermore, any remittance of foreign currency into the R.O.C. by a R.O.C. company or resident individual in a year will be offset by the amount remitted out of R.O.C. by such company or individual (as applicable) within its annual quota and will not use up its annual inward remittance quota to the extent of such offset. The above limits apply to remittances involving a conversion of NT dollars to a foreign currency and vice versa. A requirement is also imposed on all enterprises to register medium- and long-term foreign debt with the Central Bank of the Republic of China (Taiwan).

In addition, foreign persons may, subject to certain requirements, but without foreign exchange approval of the Central Bank of the Republic of China (Taiwan), remit outside and into the R.O.C. foreign currencies of up to US\$100,000 (or its equivalent) for each remittance. The above limit applies to remittances involving a conversion of NT dollars to a foreign currency and vice versa. The above limit does not, however, apply to the conversion of NT dollars into other currencies, including U.S. dollars, in respect of the proceeds of sale of any underlying shares withdrawn from a depositary receipt facility.

E. Taxation

Singapore Tax Considerations

Taxation of Dividends Received by Singapore Resident Shareholders

On the basis that we are not tax resident in Singapore, dividends paid by us would be taxable in Singapore if they are received in Singapore or if they are considered, in the hands of a particular shareholder, to be derived in Singapore (for example if they constitute the income of a trade or business carried out in Singapore).

Foreign-sourced dividends received on or after June 1, 2003 by any person, not being an individual, resident in Singapore, or on or after January 1, 2004 by any individual resident in Singapore through a partnership in Singapore will be exempt from tax if certain conditions are met. The main conditions to be satisfied for such exemption are that:

- the income is subject to tax of a similar character to income tax (by whatever name called) under the law of the territory from which the income is received; and
- at the time the income is received in Singapore by the person resident in Singapore, the highest rate of tax of a similar character to income tax (by whatever name called) levied under the law of the territory from which the income is received on any gains or profits from any trade or business carried on by any company in that territory at that time is not less than 15%.

The normal tax rate for corporate profits in Singapore is 17%, with a certain amount of normal chargeable income exempt from tax. Resident individuals deriving chargeable income above certain amount are subject to tax at progressive rates ranging from 2% to 22% with effect from Year of Assessment 2017 (income year 2016).

If our shareholders are corporations, our shareholders will be regarded as being tax resident in Singapore if the control and management of our shareholders' business is exercised in Singapore. For example, if the board of directors of a company meets and conducts the business of such company in Singapore, such company would generally be regarded as tax resident in Singapore. An individual will be regarded as being a tax resident in Singapore in a year of assessment if, in the preceding year, he was physically present in Singapore or exercised an employment in Singapore (other than as director of a company) for 183 days or more, or if he ordinarily resides in Singapore.

All foreign-sourced income received or deemed received in Singapore by tax resident individuals (except for income received or deemed received through a partnership in Singapore) on or after January 1, 2004 will be exempt from taxation.

Gains on Disposal of Shares

Singapore does not impose taxes on capital gains. However, there are no specific laws or regulations that concern the characterization of capital gains and hence, gains on disposal of shares may be construed to be income in nature and subject to Singapore income taxation if they arise from or are otherwise connected with the activities which the Inland Revenue Authority of Singapore regards as the carrying on of a trade or business in Singapore. You should consult your tax advisors concerning the Singapore tax consequences of acquiring, owning, selling or otherwise disposing the Shares.

Stamp Duty

There is no stamp duty payable in respect of the issuance and holding of our Shares. Where existing shares are acquired in Singapore, stamp duty is payable on the instrument of transfer of the shares at the rate of S\$2.00 for every S\$1,000 or any part thereof, of the consideration for or market value of the Shares, whichever is higher. The stamp duty is borne by the purchaser unless there is an agreement to the contrary. Where an instrument is executed outside Singapore, or no instrument of transfer is executed, no stamp duty is payable on the acquisition of existing Shares. However, stamp duty would be payable if an instrument of transfer which is executed outside Singapore is received in Singapore.

Under Singapore law, our directors may not register a transfer of our Shares unless the instrument of transfer has been duly stamped.

Singapore Estate Duty

Estate duty has been abolished for deaths occurring on or after February 15, 2008.

You should consult your tax advisors regarding the non-Singapore estate duty consequences of your ownership of our Shares.

Goods and Services Tax (“GST”)

The sale of our Shares by an investor belonging in Singapore to another person belonging in Singapore is an exempt supply not subject to GST. Any GST directly or indirectly incurred by the investor in respect of this exempt supply would be a cost to the investor.

Where our Shares are sold by a GST-registered investor to a person belonging outside Singapore and that person is outside Singapore when the sale is executed, the sale should generally be considered as a taxable supply subject to GST at zero-rate. Any GST incurred by the investor in the making of such a supply, if the same is a supply in the course of or furtherance of a business, may be fully recoverable from the Comptroller of GST.

Services such as brokerage, handling and clearing services rendered by a GST-registered person to an investor belonging in Singapore in connection with the investor’s purchase, sale or holding of our Shares will be subject to GST at the rate of 7%. Similar services rendered to an investor belonging outside Singapore should generally be subject to GST at zero-rate.

U.S. Tax Considerations

U.S. Federal Income Tax Considerations for U.S. Persons

The following is a discussion of certain U.S. federal income tax considerations for U.S. persons (as defined below) that are investors in Shares. This discussion is based on U.S. federal income tax law as in effect on the date hereof, which is subject to differing interpretations or change, possibly on a retroactive basis. This discussion applies only to U.S. persons that will acquire and hold the Shares as “capital assets” (generally, property held for investment). This discussion is for general information only and does not address all of the tax considerations that may be relevant to you in light of your particular circumstances or if you are subject to special treatment under the U.S. federal income tax laws, including if you are a:

- bank;
- broker-dealer;
- financial institution or insurance company;
- tax-exempt entity;
- person holding Shares as part of a straddle, hedge, conversion or other integrated investment;
- person owning (actually or constructively, as determined under U.S. federal income tax law), 10% or more of the combined voting power all classes of our stock entitled to vote, or 10% or more of the total value of all classes of our stock;
- person whose “functional currency” is not the U.S. dollar;

- an entity which is classified for U.S. federal income tax purposes as a “partnership” or an owner of such equity interests in such an entity; or
- trader in securities that has elected the mark-to-market method of accounting for securities.

This discussion does not address any U.S. state, local or non-United States tax considerations, or any U.S. federal estate, gift or alternative minimum tax considerations.

As used in this discussion, the term “U.S. person” means:

- an individual who is a citizen or resident (as determined under U.S. federal income tax laws) of the United States;
- an entity which is treated as a corporation for U.S. federal income tax purposes, created in or organized under the laws of the United States or any political subdivision thereof;
- an estate, the income of which is includible in gross income for U.S. federal income tax purposes regardless of its source; or
- an arrangement which is treated for U.S. federal income tax purposes as a trust if (1) it is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust, or (2) it has otherwise elected to be treated as a U.S. person under the Internal Revenue Code.

If an entity treated as a partnership for U.S. federal income tax purposes holds Shares, the tax treatment of a holder of equity interests in such entity will generally depend upon the status of such holder and the activities of such entity. If you are a holder of equity interests in an entity which is treated as a partnership for U.S. federal tax purposes, and such entity holds Shares, you are urged to consult your tax advisor as to the particular U.S. federal income tax consequences of an investment in the Shares that are applicable to you.

You are urged to consult your tax advisor concerning the particular U.S. federal, state, local and non-United States income and other tax considerations regarding the ownership and disposition of the Shares, including the application of the passive foreign investment company rules discussed below. Investors should carefully review the discussion below under “—Passive Foreign Investment Company.”

Passive Foreign Investment Company

Due to the price of our Shares during 2019 and the composition of our assets (in particular, the retention of a large amount of cash), we believe that is likely that we were classified as a passive foreign investment company (“PFIC”), for United States federal income tax purposes, for the taxable year ended December 31, 2018, and that we will likely be a PFIC for our current taxable year ending December 31, 2019, unless our share value increases substantially and/or we invest a substantial amount of the cash and other passive assets we hold in assets that produce or are held for the production of non-passive income. In general, we will be classified as a PFIC for any taxable year if either (i) 75% or more of our gross income for such year is passive income or (ii) 50% or more of the average quarterly value of our assets (as generally determined on the basis of fair market value) produce or are held for the production of passive income. For this purpose, cash and assets readily convertible into cash are generally classified as passive and goodwill and other unbooked intangibles associated with active business activities may generally be classified as non-passive. We will be treated as owning a proportionate share of the assets and earning a proportionate share of the income of any other corporation more than 25% (by value) of whose stock is owned, directly or indirectly, by us.

If we are classified as a PFIC for any taxable year during which you hold Shares, and unless you make a mark-to-market election (as described below), you will generally be subject to special tax rules that have a penalizing effect, regardless of whether we remain a PFIC, on (i) any excess distribution that we make to you (which generally means any distribution received by you in a taxable year that is greater than 125% of the average annual distributions received by you in the three preceding taxable years or your holding period for the Shares, if shorter), and (ii) any gain realized on the sale or other disposition, including a pledge, of our Shares. Under the PFIC rules:

- such excess distribution or gain will be allocated ratably over your holding period for the Shares;
- such amount allocated to the current taxable year and any taxable year prior to the first taxable year in which we are classified as a PFIC (a “pre-PFIC year”) will be taxable as ordinary income;
- such amount allocated to each prior taxable year, other than a pre-PFIC year, will be subject to tax at the highest tax rate in effect applicable to you for that year; and

- an interest charge generally applicable to underpayments of tax will be imposed on the tax attributable to each prior taxable year, other than the current taxable year or a pre-PFIC year.

As an alternative to the foregoing rules, a holder of “marketable stock” in a PFIC may make a mark-to-market election, provided that the Shares are “regularly traded” on a “qualified exchange”. Although we believe that, based on the current level of trading activity of our Shares on the Nasdaq Capital Market, the Shares should qualify as being regularly traded on a qualified exchange, no assurance can be given that the Shares will continue to be readily tradable on a qualified exchange in the United States. If you make this election, you will generally (i) include in gross income as ordinary income for each taxable year the excess, if any, of the fair market value of your Shares at the end of the taxable year over the adjusted tax basis of the Shares and (ii) deduct as an ordinary loss the excess, if any, of the adjusted tax basis of the Shares over the fair market value of the Shares at the end of the taxable year, but only to the extent of the amount previously included in income as a result of the mark-to-market election. Your adjusted tax basis in the Shares would be adjusted to reflect any income or loss resulting from the mark-to-market election. If you make a mark-to-market election in respect of a corporation classified as a PFIC and such corporation ceases to be classified as a PFIC, you will generally not be required to take into account the gain or loss described above during any period that such corporation is not classified as a PFIC. If you make a mark-to-market election, any gain you recognize upon the sale or other disposition of Shares will be treated as ordinary income and any loss will be treated as ordinary loss, but such loss will only be treated as ordinary to the extent of the net amount previously included in income as a result of the mark-to-market election. In the case of a U.S. person who has held Shares during any taxable year in which we are classified as PFIC and continues to hold such Shares (or any portion thereof), and who is considering making a mark-to-market election, special tax rules may apply relating to purging the PFIC taint of such Shares. If a U.S. Holder makes a mark-to-market election, the tax rules that apply to distributions by corporations which are not PFICs would apply to distributions, except that the reduced tax rate applicable to qualified dividend income (as discussed below in “–Dividends”) would not apply.

Because a mark-to-market election cannot be made for any lower-tier PFICs that we may own, a U.S. person may continue to be subject to the PFIC rules with respect to such U.S. person’s indirect interest in any investment held by us that is treated as an equity interest in a PFIC for United States federal income tax purposes.

We do not intend to provide U.S. persons with the information necessary to permit U.S. persons to make qualified electing fund elections (a “QEF election”), which, if available, would result in tax treatment different from (and generally less adverse than) the general tax treatment for PFICs described above. Please consult your U.S. tax advisor regarding the requirements and consequences to you of making such a QEF election with respect to your Shares.

Each U.S. person who holds an interest in a PFIC is required to file an annual report containing such information as the U.S. Treasury may require. In addition, if a U.S. person holds Shares in any year in which we are a PFIC, such holder will be required to file Internal Revenue Service Form 8621 regarding distributions received on the Shares, any gain realized on the disposition of the Shares, and any “reportable election.” You are urged to consult your tax advisor regarding the application of the PFIC rules, including the possibility of making a mark-to-market election.

Taxation of Dividends

The following description of the taxation of dividends is subject to the discussion above with respect to the passive foreign investment company tax rules. The amount of distributions you receive on your Shares (other than certain pro rata distributions of our Shares or rights to subscribe for Shares) will generally be reported as dividend income to you if the distributions are made from our current or accumulated earnings and profits as calculated according to U.S. federal income tax principles. Because we do not intend to determine our earnings and profits on the basis of U.S. federal income tax principles, any distribution paid will generally be reported as a “dividend” for U.S. federal income tax purposes. You will include such dividends in your gross income as ordinary income on the day you actually or constructively receive them. The amount of any distribution of property other than cash will be the fair market value of such property on the date it is distributed. A non-corporate recipient of dividend income will generally be subject to tax on dividend income from a “qualified foreign corporation” at a reduced United States federal tax rate rather than the marginal tax rates generally applicable to ordinary income, so long as certain holding period requirements are met. A non-U.S. corporation generally will be considered to be a qualified foreign corporation (i) if it is eligible for the benefits of a comprehensive tax treaty with the United States which the Secretary of Treasury of the United States determines is satisfactory for purposes of this provision and which includes an exchange of information program or with respect to any dividend it pays on stock which is readily tradable on an established securities market in the United States and (ii) the corporation is not a PFIC and is not treated as a PFIC with respect to you for the taxable year in which the dividend was paid and the preceding taxable year. There is currently no tax treaty in effect between the United States and Singapore. Although the Shares are currently tradable on the Nasdaq Capital Market, which is an established securities market in the United States, no assurance can be given that the Shares will continue to be readily tradable on an established securities market in the United States. U.S. corporate holders will generally not be eligible for the dividends received deduction allowed to corporations unless the U.S. corporation holds stock representing at least 10% of the total voting power or the total value of all of our stock, in which case the U.S. corporation may be entitled to a 100% deduction for dividends we pay.

The amount of any distribution paid in a currency other than the U.S. dollar will equal the U.S. dollar value of the foreign currency you receive, calculated by reference to the exchange rate in effect on the date you actually or constructively receive the distribution, regardless of whether the foreign currency is actually converted into U.S. dollars. If you do not convert the foreign currency you receive as a dividend on the date of receipt, you will have a basis in such foreign currency equal to its U.S. dollar value on the date of receipt. Any gain or loss you realize when you subsequently sell or otherwise dispose of such foreign currency generally will be ordinary income or loss from sources within the United States for U.S. foreign tax credit limitation purposes.

Dividends on Shares will generally be treated as foreign source income for U.S. foreign tax credit purposes and generally will constitute passive category income. A U.S. person 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 Shares. A U.S. person who does not elect to claim a foreign tax credit for foreign tax withheld may instead claim a deduction for U.S. federal income tax purposes, in respect of such withholding, but only for a year in which such holder elects to do so for all creditable foreign income taxes. The rules governing U.S. foreign tax credits are complex. Accordingly, you are urged to consult your tax advisor regarding the availability of a U.S. foreign tax credit under your particular circumstances.

Sale or Other Disposition of Shares

Except as discussed above with respect to the passive foreign investment company tax rules, a U.S. person generally will recognize capital gain or loss for U.S. federal income tax purposes upon a sale or other disposition of Shares in an amount equal to the difference between the amount realized from the sale or disposition and the holder’s adjusted tax basis in the Shares. Such gain or loss generally will be long-term (taxable at a reduced rate for individuals) if, on the date of sale or disposition, the Shares were held by the holder for more than one year and will generally be treated as gain or loss from U.S. sources for foreign tax credit purposes. The deductibility of a capital loss may be subject to limitations. You are urged to consult your tax advisor regarding the consequences if a foreign withholding tax is imposed on a disposition of Shares, including the availability of the foreign tax credit under your particular circumstances.

Backup Withholding and Information Reporting

U.S. persons may be subject to information reporting to the Internal Revenue Service with respect to dividends on and proceeds from the sale or other disposition of our Shares. Dividend payments with respect to our Shares and proceeds from the sale or other disposition of our Shares are not generally subject to United States backup withholding (provided that certain certification requirements are satisfied). You are advised to consult your tax advisor regarding the application of the United States information reporting and backup withholding rules to your particular circumstances.

Individuals who are U.S. person, and who hold “specified foreign financial assets”, including stock of a non-U.S. corporation that is not held in an account maintained by a U.S. “financial institution”, whose aggregate value exceeds US\$50,000 during the tax year, may be required to attach to their tax returns for the year certain specified information. An individual who fails to timely furnish the required information may be subject to a penalty. Each U.S. person who is an individual is advised to consult its tax advisor regarding its reporting obligations under this legislation.

F. Dividends and Paying Agents

Not applicable.

G. Statements by Experts

Not applicable.

H. Documents on Display

The SEC allows us to “incorporate by reference” the information we file with the SEC. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference in this annual report is considered to be part of this annual report. We therefore incorporate by reference in Item 19 of this annual report certain exhibits, which we filed with the SEC in prior filings. You may read and copy this annual report, including the exhibits incorporated by reference in this annual report, at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You can request copies of these documents upon payment of a duplicating fee, by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference rooms. Additional information may also be obtained over the Internet at the SEC’s website at www.sec.gov.

You may also request a copy of our SEC filings, at no cost, upon written request to our investor relations department at 8th Floor, No. 22, Lane 407, Section 2, Tiding Boulevard, Taipei 11492, Taiwan R.O.C, or by e-mail to: IR@Gigamedia.com.tw. A copy of each report submitted in accordance with applicable U.S. law is also available for public review at our principal executive offices.

As a foreign private issuer, we are exempt under the Securities Exchange Act from, among other things, the rules prescribing the furnishing and content of proxy statements, and our executive officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Securities Exchange Act. In addition, we will not be required under the Securities Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Securities Exchange Act.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk is the risk of loss related to adverse changes in market prices, including interest rates and foreign exchange rates, of financial instruments. We are exposed to various types of market risks in the normal course of business, including changes in interest rates and foreign currency exchange rates.

There may be material limitations that cause the information disclosed below not to fully reflect the net market risk exposures of our company. The limitations include financial instruments that we may utilize in the future, and transactions we may enter into for managing risks, that have not yet been determined. The limitations may also include mismatches in our positions, and other features of the instruments, positions and transactions that are mentioned below.

Foreign Currency Risk

Our subsidiaries conduct most of their business transactions in their own measurement currencies; therefore, the foreign currency risks derived from operations are not significant. However, we hold some assets or liabilities in foreign currencies other than measurement currency and the value of these assets and liabilities are subject to foreign currency risks resulting from fluctuations in exchange rates between the foreign-denominated currency and the measurement currency. We have not used hedging transactions to reduce our exposure to exchange rate fluctuations; however, we may choose to do so in the future. For more information on foreign currency translations for our financial reporting purposes, see note 1(b) to our audited consolidated financial statements beginning on page F-1 in this annual report.

As of December 31, 2019, we had bank deposits of approximately US\$7.8 million denominated in foreign currencies other than measurement currencies of the entities holding such assets. These assets are subject to foreign currency exchange risk. We recognized a realized foreign exchange loss of approximately US\$227 thousand and unrealized foreign exchange gain of approximately US\$159 thousand in the year ended December 31, 2019.

Based on the sensitivity analysis of our exposure to foreign currency exchange rate risk related our bank deposits and available-for-sale marketable securities which were denominated in a foreign currency other than functional currencies of the entities holding such assets, a hypothetical 10% change in the exchange rate between the U.S. dollar and the underlying currencies of those instruments subject to foreign currency exchange rate risk would result in a change of 1.1% in our total equity as of December 31, 2019.

While the current COVID-19 pandemic has resulted in extreme volatility in global financial markets, the exchange rates of NT dollar and Hong Kong dollar against U.S. dollar have been relatively stable. From January 1, 2020 to April 10, 2020, the NT dollar to U.S. dollar exchange rate fluctuated approximately 2%, and the Hong Kong dollar to U.S. dollar exchange rate fluctuated less than 0.6%.

Interest Rate Risk

Our exposure to interest rates related primarily to our short-term loans from various banks. As of December 31, 2019, we did not have outstanding bank loans.

Other Market Risks

We are also exposed to other market risks, which are mainly derived from our investments.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not applicable.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

A. Material Modification to the Instruments Defining the Rights of Security Holders

None.

B. Material Modification to the Rights of Registered Securities by Issuing or Modifying or any Other Class of Securities

None.

C. Withdrawal or Substitution of a Material Amount of the Assets Securing any Registered Securities

Not applicable.

D. Change of Trustees or Paying Agents for any Registered Securities

None.

E. Use of Proceeds

Not applicable.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined by Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act) as of December 31, 2019. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, in designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable, rather than absolute, assurance of achieving the desired control objectives, and management was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based upon that evaluation, and taking into account the foregoing, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2019, our disclosure controls and procedures were effective in providing reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act was recorded, processed, summarized and reported on a timely basis, and these controls and procedures were effective in ensuring that 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 Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management’s Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined by Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States (“US GAAP”). Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with US GAAP and that receipts and expenditures are being made only in accordance with authorizations of our management and directors and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements. Also, projections of any evaluation of the effectiveness of internal control to future periods are subject to the risk that controls may become inadequate because of changes in conditions, and that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO 2013”) in Internal Control - Integrated Frameworks. Based on our assessment using those criteria, our management has concluded that our internal control over financial reporting as of December 31, 2019 was effective.

Attestation Report of the Independent Registered Public Accounting Firm

This annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting, as we are a non-accelerated filer exempted from section 404(b) of the Sarbanes-Oxley Act.

Changes in Internal Control Over Financial Reporting

During the year ended December 31, 2019, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVED

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Mr. Casey K. TUNG, an independent director and member of our audit committee, is the audit committee financial expert.

ITEM 16B.CODE OF ETHICS

We have adopted a code of ethics, as defined in Item 16B of Form 20-F. Our code of ethics applies to our Chief Executive Officer, Chief Financial Officer and persons performing similar functions, as well as to our directors, other officers, employees and consultants. The full text of our code of ethics is available on our website, www.gigamedia.com. If we further amend any provisions of our code of ethics that apply to our Chief Executive Officer, Chief Financial Officer or persons performing similar functions, or if we grant any waiver of such provisions, we will disclose such amendment or waiver on our website at the same address. We will also provide any person without charge a copy of our code of ethics upon written request to our investor relations department at 8th Floor, No. 22, Lane 407, Section 2, Tiding Boulevard, Taipei 114, Taiwan R.O.C., or by e-mail to: IR@Gigamedia.com.tw.

On December 19, 2005, our board of directors adopted an anti-fraud policy for the purpose of preventing fraud schemes, including fraudulent financial reporting misappropriation of assets, any fraud committed by senior management, and information technology fraud. The anti-fraud policy was also amended on February 13, 2009. According to our anti-fraud policy, our audit committee is responsible for monitoring the implementation of our anti-fraud policy and procedures, and an anti-fraud taskforce is assigned by our audit committee to be responsible for the anti-fraud hotline management, risk assessment, complaint investigation and resolution, and reporting to our Chief Executive Officer, Chief Financial Officer and audit committee.

On May 10, 2006, our audit committee adopted a whistleblower program pursuant to our anti-fraud policy. The whistleblower program enables all employees to know how and when to use the whistleblower hotline and communicate or report, on a confidential or anonymous basis, without fear of retribution, concerns related to wrongdoings or violations, and ensures that all reported incidents are properly investigated.

On April 30, 2010, our board of directors adopted a non-competition provision under which all of our employees, consultants, officers and directors may not participate, invest, license, employ or being employed, or cooperate with any company or entity engaged in a line of business which may be competitive with the business of the Company within three months after termination of their employment of the Company, except in cases where the local law or the contract states otherwise. An amended non-solicitation provision was also adopted, under which all our employees, consultants, officers and directors may not, during their employment or within twelve months after termination of the employment, directly or indirectly, solicit, entice, or attempt to approach, solicit or entice any of the other employees of the Company or its affiliates to terminate the employment.

ITEM 16C.PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table summarizes the aggregate fees billed to us by Deloitte & Touche for the fiscal years ended December 31, 2018 and 2019, respectively.

For the Years Ended December 31	2018 (in US\$)	2019 (in US\$)
Audit Fees	\$ 237,000	\$ 248,000
Audit-Related Fees	0	0
Tax Fees	18,000	7,000
All Other Fees	0	0

A. Audit Fees

Audit fees consist of fees billed for the annual audit of our consolidated financial statements. Audit fees also include fees for services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings or engagements.

B. Tax Fees

Tax fees include fees billed for tax compliance services.

C. Audit Committee Pre-Approval Policies and Procedures

In May 2005, we adopted our audit committee charter. Consistent with the SEC's policies regarding auditor independence, our audit committee is directly responsible for the appointment, compensation, retention and oversight of the work of auditors engaged to provide us with audit, review or attest services. Our audit committee has sole discretion to review and pre-approve the appointment of auditors, subject to the appointment, replacement or removal from office of our independent public accountants as approved by our shareholders at our Annual General Meeting, and to set their fees for the performance of audit and non-prohibited non-audit services in accordance with the Sarbanes-Oxley Act of 2002 and the SEC rules and regulations promulgated thereunder.

The appointment of our independent registered public accounting firm, Deloitte & Touche, as well as the scope of each audit, audit-related or non-prohibited, as well as any non-audit services provided pursuant to such appointment, and our auditors' fees for all such services, were approved by our audit committee.

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

Not applicable.

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

Not applicable.

ITEM 16F. CHANGES IN REGISTRANT'S CERTIFYING ACCOUNTANTS

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

Summary of Significant Differences in Corporate Governance Practices

Our Shares are currently listed on the Nasdaq Stock Market and, for so long as our securities continue to be listed, we will remain subject to the rules and regulations established by Nasdaq as being applicable to listed companies. Under Nasdaq Rule 5615(a)(3), a foreign private issuer such as our Company may follow its home country practice in lieu of the requirements of the Nasdaq Rule 5600 Series, with certain exceptions, provided that it discloses each requirement that it does not follow and describes the home country practice followed in lieu of such requirements. In addition, Nasdaq has amended its Rule 5615(a)(3) to permit foreign private issuers to follow certain home country corporate governance practices without the need to seek an individual exemption from Nasdaq. However, a foreign private issuer must disclose in its annual report filed with the SEC each requirement it does not follow and the alternative home country practice it does follow.

We are incorporated under the laws of Singapore. We currently comply with the specifically mandated provisions of Nasdaq Rule 5615(a)(3). We are currently exempt from the DRS eligibility provisions of Nasdaq Rule 5255(c) as we are not allowed to issue of non-certificated securities under Singapore law. See Item 9, "The Offer and Listing" in this annual report. We have elected to voluntarily comply with other requirements of Nasdaq Rule 5600 Series in all material aspects, notwithstanding that our home country does not mandate compliance; although we may in the future determine to cease voluntary compliance with those provisions of Nasdaq Rule 5600 Series.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

See Item 18.

ITEM 18. FINANCIAL STATEMENTS

Our consolidated financial statements and the reports thereon by our independent registered public accounting firms listed below are attached hereto as follows:

	<u>Page</u>
(a) Report of Independent Registered Public Accounting Firm	F-2
(b) Consolidated Balance Sheets as of December 31, 2018 and 2019	F-3 F-4
(c) Consolidated Statements of Operations for the years ended December 31, 2017, 2018 and 2019.....	F-5
(d) Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2017, 2018 and 2019..	F-6
(e) Consolidated Statements of Changes in Shareholders' Equity for the years ended December 31, 2017, 2018 and 2019.....	F-7
(f) Consolidated Statements of Cash Flows for the years ended December 31, 2017, 2018 and 2019	F-8 F-9
(g) Notes to the consolidated financial statements	F-10 F-34

ITEM 19. EXHIBITS

EXHIBIT	INDEX
1.1	Amended Memorandum and Articles of Association of our Company, incorporated by reference to Exhibit 1.1 to our annual report for the year 2013 on Form 20-F filed with the SEC on April 30, 2014
8.1*	List of Subsidiaries
11.1	Code of Ethics, as last amended by the board of directors on April 30, 2010, incorporated by reference to Exhibit 11.1 to our annual report for the year 2013 on Form 20-F filed with the SEC on April 30, 2014
12.1*	Certification by our Chief Executive Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act
12.2*	Certification by our Chief Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act
13.1*	Certification by our Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.2*	Certification by our Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Deloitte & Touche, Independent Registered Public Accounting Firm
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

SIGNATURE

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.

GIGAMEDIA LIMITED

By: /s/ HUANG, CHENG-MING
HUANG, CHENG-MING
Chief Executive Officer

Date: April 27, 2020

GIGAMEDIA LIMITED AND SUBSIDIARIES
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Consolidated balance sheets as of December 31, 2018 and 2019	F-3
Consolidated statements of operations for the years ended December 31, 2017, 2018 and 2019.....	F-5
Consolidated statements of comprehensive income (loss) for the years ended December 31, 2017, 2018 and 2019.....	F-6
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
GigaMedia Limited

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of GigaMedia Limited and subsidiaries (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), changes in shareholders’ equity, and cash flows for each of the three years in the period ended December 31, 2019 and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for leases in 2019 due to the adoption of Accounting Standards Codification (“ASC”) Topic 842. Further, as discussed in Note 10 to the consolidated financial statements, the Company changed its method of accounting for revenue from contracts with customers in 2018 due to the adoption of ASC Topic 606.

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 consolidated 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 consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche
Taipei, Taiwan
Republic of China

April 24, 2020

We have served as the Company’s audit since 2017.

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
DECEMBER 31, 2018 AND 2019
(in thousands of US dollars)

	December 31	
	2018	2019
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents (Note 5)	\$ 59,308	\$ 57,743
Accounts receivable - net (Note 6)	523	368
Prepaid expenses	122	112
Restricted cash (Note 5)	518	531
Other current assets (Note 7)	124	139
Total Current Assets	60,595	58,893
PROPERTY, PLANT AND EQUIPMENT, NET	121	—
INTANGIBLE ASSETS - NET	38	—
OTHER ASSETS		
Refundable deposits	197	199
Prepaid licensing and royalty fees (Note 3)	435	44
Other (Note 11)	59	86
TOTAL ASSETS	\$ 61,445	\$ 59,222

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS - (Continued)
DECEMBER 31, 2018 AND 2019
(in thousands of US dollars, except share data)

	December 31	
	2018	2019
<u>LIABILITIES & EQUITY</u>		
CURRENT LIABILITIES		
Accounts payable	\$ 104	\$ 64
Accrued expenses (Note 9)	1,433	1,280
Deferred revenue (Note 10)	1,370	1,365
Other current liabilities (Notes 8 and 16)	366	875
Total Current Liabilities	3,273	3,584
NONCURRENT LIABILITIES		
Lease liabilities (Note 8)	—	94
Total Liabilities	3,273	3,678
COMMITMENTS AND CONTINGENCIES (Note 16)		
	—	—
SHAREHOLDERS' EQUITY (Note 12)		
Common shares, no par value, and additional paid-in capital; issued and outstanding 11,052 thousand shares in 2018 and 2019	308,750	308,751
Accumulated deficit	(228,246)	(230,961)
Accumulated other comprehensive loss	(22,332)	(22,246)
Total GigaMedia Shareholders' Equity	58,172	55,544
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$ 61,445	\$ 59,222

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

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED DECEMBER 31, 2017, 2018 AND 2019
(in thousands of US dollars, except for earnings per share amounts)

	2017	2018	2019
OPERATING REVENUES			
Digital entertainment service revenues (Note 17)	\$ 11,596	\$ 7,101	\$ 6,645
COSTS OF REVENUES			
Cost of digital entertainment service revenues	(5,098)	(3,585)	(3,064)
GROSS PROFIT	<u>6,498</u>	<u>3,516</u>	<u>3,581</u>
OPERATING EXPENSES			
Product development and engineering expenses	(1,072)	(1,091)	(1,186)
Selling and marketing expenses	(3,993)	(3,297)	(1,995)
General and administrative expenses	(3,528)	(3,684)	(3,182)
Impairment loss on property, plant and equipment (Note 4)	—	—	(109)
Impairment loss on intangible assets (Note 4)	—	—	(15)
Impairment loss on prepaid licensing and royalty fees (Notes 3 and 4)	—	(244)	(85)
Gain on termination of licensing agreement (Note 3)	1,732	—	—
Bad debt expense (Note 6)	(127)	(23)	(24)
	<u>(6,988)</u>	<u>(8,339)</u>	<u>(6,596)</u>
LOSS FROM OPERATIONS	<u>(490)</u>	<u>(4,823)</u>	<u>(3,015)</u>
NON-OPERATING INCOME (EXPENSES)			
Interest income	602	1,302	1,483
Interest expense	(34)	—	—
Foreign exchange gain (loss), net	(551)	267	(68)
Net loss on equity investments	(24)	—	—
Impairment loss on investments	(52)	—	—
Other	(36)	61	(59)
	<u>(95)</u>	<u>1,630</u>	<u>1,356</u>
LOSS BEFORE INCOME TAXES	<u>(585)</u>	<u>(3,193)</u>	<u>(1,659)</u>
INCOME TAX BENEFIT (Note 15)	<u>1,671</u>	<u>—</u>	<u>—</u>
NET INCOME (LOSS) ATTRIBUTABLE TO SHAREHOLDERS OF GIGAMEDIA	<u>\$ 1,086</u>	<u>\$ (3,193)</u>	<u>\$ (1,659)</u>
EARNINGS (LOSS) PER SHARE ATTRIBUTABLE TO GIGAMEDIA			
Basic and Diluted:	<u>\$ 0.10</u>	<u>\$ (0.29)</u>	<u>\$ (0.15)</u>
WEIGHTED AVERAGE SHARES USED TO COMPUTE EARNINGS (LOSS) PER SHARE ATTRIBUTABLE TO GIGAMEDIA SHAREHOLDERS (Note 2)			
Basic	<u>11,052</u>	<u>11,052</u>	<u>11,052</u>
Diluted	<u>11,052</u>	<u>11,052</u>	<u>11,052</u>

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

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
FOR THE YEARS ENDED DECEMBER 31, 2017, 2018 AND 2019
(in thousands of US dollars)

	2017	2018	2019
NET INCOME (LOSS)	\$ 1,086	\$ (3,193)	\$ (1,659)
OTHER COMPREHENSIVE INCOME (LOSS) - NET OF TAX:			
Realized gain on marketable securities reclassified into income	(2)	—	—
Defined benefit pension plan adjustment	(11)	(17)	20
Foreign currency translation adjustment	641	(332)	66
	628	(349)	86
COMPREHENSIVE INCOME (LOSS) ATTRIBUTABLE TO GIGAMEDIA SHAREHOLDERS	<u>\$ 1,714</u>	<u>\$ (3,542)</u>	<u>\$ (1,573)</u>

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

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEARS ENDED DECEMBER 31, 2017, 2018 AND 2019
(in thousands of US dollars and shares)

GIGAMEDIA SHAREHOLDERS

	Common shares and additional paid-in capital		Accumulated deficit (Note 12)	Accumulated other comprehensive loss (Note 13)	Total
	Shares	Amount			
Balance as of January 1, 2017	11,052	\$ 308,754	\$ (226,485)	\$ (22,611)	\$ 59,658
Stock-based compensation	—	(7)	—	—	(7)
Net income	—	—	1,086	—	1,086
Other comprehensive income	—	—	—	628	628
Balance as of December 31, 2017	11,052	308,747	(225,399)	(21,983)	61,365
Cumulative effect of initially applying new accounting standards (Note 10)	—	—	346	—	346
Stock-based compensation	—	3	—	—	3
Net loss	—	—	(3,193)	—	(3,193)
Other comprehensive loss	—	—	—	(349)	(349)
Balance as of December 31, 2018	11,052	308,750	(228,246)	(22,332)	58,172
Cumulative effect of initially applying new accounting standards (Note 1)	—	—	(1,056)	—	(1,056)
Stock-based compensation	—	1	—	—	1
Net loss	—	—	(1,659)	—	(1,659)
Other comprehensive income	—	—	—	86	86
Balance as of December 31, 2019	11,052	\$ 308,751	\$ (230,961)	\$ (22,246)	\$ 55,544

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

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2017, 2018 AND 2019
(in thousands of US dollars)

	2017	2018	2019
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income (loss)	\$ 1,086	\$ (3,193)	\$ (1,659)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Depreciation	43	100	61
Amortization	12	36	47
Stock-based compensation	(7)	3	1
Impairment loss on property, plant and equipment	—	—	109
Impairment loss on intangible assets	—	—	15
Impairment losses on prepaid licensing and royalty fees	—	244	85
Bad debt expense	127	23	24
Gains on disposals of property, plant and equipment - net	(1)	—	—
Gains on disposal of marketable securities	(2)	—	—
Net loss on equity investments	24	—	—
Impairment losses on marketable securities and investments	52	—	—
Deferred income tax benefits	(1,672)	—	—
Loss of lawsuit contingent liabilities	—	—	96
Net changes in:			
Accounts receivable	14	205	130
Prepaid expenses	137	267	10
Other current assets	(6)	35	(15)
Prepaid licensing and royalty fees	561	(220)	306
Prepaid pension assets	(9)	14	(29)
Accounts payable	48	(210)	(40)
Accrued expenses	(1,331)	(1,273)	(153)
Other liabilities	(186)	55	(555)
Net cash used in operating activities	<u>(1,110)</u>	<u>(3,914)</u>	<u>(1,567)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:			
Proceeds from disposals of marketable securities	2	—	—
Purchases of property, plant and equipment	(192)	(66)	(48)
Proceeds from disposals of property, plant and equipment	1	—	—
Proceeds from disposals of subsidiary and equity investments	1,058	—	—
Increase in intangible assets	(11)	(61)	(14)
Decrease (increase) in refundable deposits	37	11	(2)
Other	40	26	(9)
Net cash provided by (used in) investing activities	<u>935</u>	<u>(90)</u>	<u>(73)</u>

GIGAMEDIA LIMITED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS - (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2017, 2018 AND 2019
(in thousands of US dollars)

	2017	2018	2019
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from short-term borrowings	986	—	—
Repayments of short-term borrowings	(3,617)	—	—
Net cash used in financing activities	(2,631)	—	—
Net foreign currency exchange differences on cash, restricted cash and cash equivalents	772	(347)	88
NET DECREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	(2,034)	(4,351)	(1,552)
CASH, CASH EQUIVALENTS AND RESTRICTED CASH AT BEGINNING OF YEAR	66,211	64,177	59,826
CASH, CASH EQUIVALENTS AND RESTRICTED CASH AT END OF YEAR	\$ 64,177	\$ 59,826	\$ 58,274
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Interest paid during the year	\$ 35	\$ —	\$ —
Income tax paid (refund) during the year	\$ 1	\$ —	\$ (6)

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

GIGAMEDIA LIMITED AND SUBSIDIARIES
Notes To Consolidated Financial Statements
December 31, 2017, 2018 and 2019

NOTE 1. Principal Activities, Basis of Presentation, and Summary of Significant Accounting Policies

(a) Principal Activities

GigaMedia Limited (referred to hereinafter as GigaMedia, our Company, we, us, or our) is a diversified provider of digital entertainment services, with a headquarters in Taipei, Taiwan.

Our digital entertainment service business operates a suite of play-for-fun digital entertainment services, mainly targeting online and mobile-device users across Asia.

(b) Basis of Presentation

The accompanying consolidated financial statements of our Company have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

(c) Summary of significant accounting policies

Principles of Consolidation

The consolidated financial statements include the accounts of GigaMedia and its subsidiaries after elimination of all inter-company accounts and transactions.

Foreign Currency Translation and Transactions

Assets and liabilities denominated in non-U.S. dollars are translated to U.S. dollars at year-end exchange rates. Income and expense items are translated at average rates of exchange prevailing during the year. Cumulative translation adjustments resulting from this process are charged or credited to other comprehensive income. Gains and losses on foreign currency transactions are included in other income and expenses.

Use of Estimates

The preparation of 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 and disclosures of contingent assets and liabilities at the dates of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting periods. Management bases its estimates on historical experience and also on assumptions that it believes are reasonable. Management assesses these estimates on a regular basis; however, actual results could differ from those estimates. Items subject to such estimates and assumptions include but not limit to the deferral and breakage of revenues; the useful lives of property, plant and equipment; allowances for doubtful accounts; the valuation of deferred tax assets, long-lived assets, investments and share-based compensation; and accrued pension liabilities (prepaid pension assets), income tax uncertainties and other contingencies. We believe the critical accounting policies listed below affect management’s judgments and estimates used in the preparation of the consolidated financial statements.

Revenue Recognition and Deferral

General

On January 1, 2018, we adopted Accounting Standards Codification (“ASC”) Topic 606, “*Revenue from Contracts with Customers*”, using the modified retrospective transition method applied to contracts that were not complete as of the adoption date. Consolidated financial results for reporting periods beginning after January 1, 2018 are presented under ASC Topic 606, while prior period amounts continue to be reported in accordance with ASC Topic 605, “*Revenue Recognition*”.

Please refer to Note 1 of our consolidated financial statements contained in our previously-filed Annual Report on Form 20-F for the year ended December 31, 2017 for our revenue recognition accounting policy as it relates to revenue transactions prior to January 1, 2018. The revenue recognition accounting policy described below relates to revenue transactions from January 1, 2018 and onward, which are accounted for in accordance with ASC Topic 606.

Our recognition of revenue from contracts with customers is in accordance with the five-step revenue recognition model: (1) identify the contract with a customer; (2) identify the performance obligation in the contract; (3) determine the transaction price; (4) allocate the transaction price to each performance obligation; and (5) recognize revenue when or as we satisfy a performance obligation.

Sales taxes assessed by governmental authorities on our revenue transactions are presented on a net basis of digital entertainment service revenues in our consolidated financial statements.

In addition to the aforementioned general policies, the following are the specific revenue recognition policies for revenue from contracts with customers.

Digital Entertainment Product and Service Revenues

Digital entertainment product and service revenues are mainly generated through sale of virtual points and in-game items, and those virtual goods purchased in our games can only be consumed in our games. Therefore, we regard the sale of a virtual good as a service, where the related performance obligation is satisfied over time, and revenues are recognized by measuring progress toward satisfying the performance obligation in a manner that best depicts the transfer of goods or services to the customer. Accordingly, we recognize revenues from the sale of virtual goods over the period of time using the output method, which is generally the estimated service period.

Digital entertainment product and service revenues are generated through the sale of virtual points, prepaid cards and game packs via various third-party storefronts, distributors and payment channels, including but not limited to the “Google Play Store,” the “Apple App Store,” convenience stores, telecom service providers and other payment service providers. Proceeds from sales of prepaid cards and game packs, net of sales discounts, and virtual points are deferred when received, and revenue is recognized upon the actual usage of the playing time or in-game virtual items by the end-users, or over the estimated useful life of virtual items, when the game is terminated and the period of refund claim for any sold virtual items is ended in accordance with our published policy, or when the likelihood of the customer exercising the remaining rights becomes remote. (Please see “Deferred Revenues and Breakage” below for more discussion of accounting treatments of the unexercised rights.)

Estimated Service Period

The virtual goods for our games may have different service periods. We use the weighted average number of days of a player’s payment interval as the estimate for the service period of each game. We evaluate the appropriateness of such estimates quarterly to see if they are in line with our observations in the operations. We believe this provides a reasonable depiction of the transfer of services to our customers, as it is the best representation of the time period during which our customers play our games. Determining the estimated service period is subjective and requires management’s judgment. Future usage patterns may differ from historical ones, and therefore the estimated service period may change in the future. The estimated service periods for players of our current games are generally less than 6 months.

Principal Agent Considerations

For the revenues generated from our digital entertainment offerings which are licensed to us for using, marketing, distributing, selling and publishing, and for the sales of our products and services via third-party storefronts and other channels, we evaluate to determine whether our revenues should be reported on a gross or net basis. Key indicators that we evaluate in determining whether we are the principal in the sale (gross reporting) or an agent (net reporting) include, but are not limited to:

- which party is primarily responsible for fulfilling the promise to provide the specified good or service; and
- which party has discretion in establishing the price for the specified good or service.

Based on our evaluation of various indicators, we report revenues on a gross basis for games that we publish and operate, as we are, and we present ourselves as, responsible for fulfilling the promise of delivering the virtual goods in the game and maintaining the game environment for customers’ consumption of such virtual goods. We have the discretion in establishing the price for those virtual goods, including the power to decide the range and extent of price discount or quantity discount, while the licensors or the third-party channels charge a fixed percentage of fees for such sales. And any loss on the receivables has to be absorbed by us and not the third-party channels.

Deferred Revenues and Breakage

Deferred revenues representing contract liabilities consist mainly of the advanced income related to our digital entertainment business. Deferred revenue represents proceeds received relating to the sale of virtual points and in-game items that are activated or charged to the respective user account by users, but which have not been consumed by the users or expired. Deferred revenue is credited to profit or loss when the virtual points and in-game items are consumed or have expired. Pursuant to relevant requirements in Taiwan, as of December 31, 2018 and 2019, cash totaling \$518 thousand and \$531 thousand, respectively, had been deposited in an escrow account in a bank as a performance bond for the users' prepayments and virtual points, and is included within restricted cash in the consolidated balance sheets.

For deferred revenues, some users may not exercise all of their contractual rights, and those unexercised rights are referred to as breakage. We estimate and recognize the breakage amount as revenue when the likelihood of the customer exercising the remaining rights becomes remote. We consider a variety of data points when determining the estimated breakage amount, including the time when we ceased selling prepaid products for certain services and when such prepaid products were last used in charging users' accounts.

Prepaid Licensing and Royalty Fees

Our Company, through our subsidiaries, routinely enters into agreements with licensors to acquire licenses for using, marketing, distributing, selling and publishing digital entertainment offerings.

Prepaid licensing fees paid to licensors are amortized on a straight-line basis over the shorter of the estimated useful economic life of the relevant product and service or license period, which is usually within one to two years.

Prepaid royalty fees and related costs are initially deferred when paid to licensors and amortized as operating costs based on certain percentages of revenues generated by the licensee from operating the related digital entertainment product and service in the specific country or region over the contract period.

Fair Value Measurements

Our Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible. We determine fair value based on assumptions that market participants would use in pricing an asset or liability in the principal or most advantageous market. When considering market participant assumptions in fair value measurements, the following fair value hierarchy distinguishes between observable and unobservable inputs, which are categorized in one of the following levels:

- Level 1 Inputs: Unadjusted quoted prices in active markets for identical assets or liabilities accessible to the reporting entity at the measurement date.
- Level 2 Inputs: Other than quoted prices included in Level 1 inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability.
- Level 3 Inputs: Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at measurement date.

Our Company generally determines or calculates the fair value of financial instruments using quoted market prices in active markets when such information is available; otherwise we apply appropriate present value or other valuation techniques, such as discounted cash flow analyses, incorporating adjusted available market discount rate information and our Company's estimates for non-performance and liquidity risk. These techniques rely extensively on the use of a number of assumptions, including the discount rate, credit spreads, and estimates of future cash flows. (Please see Note 4, "Fair Value Measurements", for additional information.)

Cash Equivalents, Restricted Cash and Presentation of Statements of Cash Flows

Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and so near to their maturity that they present relatively insignificant risk from changes in interest rates. Commercial paper, negotiable certificates of deposit, time deposits and bank acceptances with original maturities of three months or less are considered to be cash equivalents.

Our consolidated 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. Amounts generally described as restricted cash and restricted cash equivalents are included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows.

Marketable Securities

Prior to 2018, our Company's investments in marketable securities were classified either as available-for-sale or trading. For the marketable securities classified as available-for-sale, the investments were stated at fair value with any unrealized gains or losses reported in accumulated other comprehensive income (loss) within equity until realized. For the marketable security classified as trading, we recognized the changes of the fair value of the investment in our consolidated statements of operations.

Other-than-temporary impairments, if any, were charged to non-operating expense in the period in which the loss occurs. In determining whether an other-than-temporary impairment had occurred, our Company primarily considered, among other factors, the length of the time and the extent to which the fair value of an investment had been at a value less than cost. When an other-than-temporary loss was recognized, the fair value of the investment became the new cost basis of the investment and was not adjusted for subsequent recoveries in fair value. Realized gains and losses also were included in non-operating income and expense in the consolidated statements of operations.

The Financial Accounting Standards Board ("FASB") issued Accounting Standards Update (ASU) No. 2016-01, *Financial Instruments – Overall* (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The new guidance makes targeted improvements to existing U.S. GAAP mainly by requiring the following accounting treatments, along with certain disclosure and presentation requirements and improvements:

- Equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) are to be measured at fair value with changes in fair value recognized in net income;
- Public business entities are to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes.
- An entity are to evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets.

Our Company adopted this new guidance as of January 1, 2018 on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings or accumulated deficit. As we had disposed of all our marketable securities by the end of 2017, the adoption did not have any impact on our consolidated financial statements.

Investments

Prior to 2018, equity investments in non-publicly traded securities of companies over which our Company had no ability to exercise significant influence were accounted for under the cost method. Unrealized losses that were considered other-than-temporary, if any, were charged to non-operating expenses. Realized gains and losses, measured against carrying amount, were also included in non-operating income and expenses. (Please see Note 4, "Fair Value Measurements", for additional information.)

For equity investments accounted for as available-for-sale or trading, cash dividends were recognized as investment income. Stock dividends were recognized as an increase in the number of shares held and did not affect investment income. The cost per share was recalculated based on the new total number of shares.

For equity investments accounted for under the equity method, stock dividends received from investees as a result of appropriation of net earnings and additional paid-in capital were recognized as an increase in the number of shares held and did not affect investment income. The cost per share was recalculated based on the weighted-average method. Cash dividends were accounted for as a reduction to the carrying value of the investment.

Equity investments in companies over which our Company had the ability to exercise significant influence but did not hold a controlling financial interest were accounted for under the equity method. We recognized our share of the earnings or losses of the investee. When our Company's carrying value in an equity method investee was reduced to zero, no further losses were recorded in our consolidated financial statements unless our Company guaranteed obligations of the investee or has committed to additional funding. When the investee subsequently reports income, our Company would not record its share of such income until it equaled the amount of its share of losses not previously recognized.

As discussed above, for our equity investments we had adopted ASU No. 2016-01 as of January 1, 2018 on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings or accumulated deficits. Since all of our equity investments in non-publicly traded securities of companies were fully impaired as of December 31, 2017, the adoption did not have any impact on our consolidated financial statements.

Receivables

Accounts receivable are recorded at the invoiced amount and do not bear interest. Amounts collected on accounts receivable are included in net cash provided by operating activities in the consolidated statements of cash flows. Our Company maintains an allowance for doubtful accounts for estimated losses inherent in its accounts receivable portfolio. In establishing the required allowance, management considers historical losses adjusted to take into account the amount of receivables in dispute, and the current receivables aging and current payment patterns. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

Property, Plant and Equipment

Property, plant and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation is recorded on a straight-line basis over useful lives that correspond to categories as follows:

<u>Categories</u>	<u>Years</u>
Information and communication equipment	2 to 5
Office furniture and equipment	3 to 5
Leasehold improvements	3 to 5

Leasehold improvements are amortized over the shorter of the term of the lease or the economic useful life of the assets. Improvements and replacements are capitalized and depreciated over their estimated useful lives, while ordinary repairs and maintenance are expensed as incurred.

Software Cost

We capitalize certain costs incurred to purchase computer software. These capitalized costs are amortized on a straight-line basis over the shorter of the useful economic life of the software or its contractual license period, which is typically one to three years.

Impairment of Long-Lived Assets

Long-lived assets other than goodwill not being amortized are reviewed for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value of an asset might not be recoverable from its related future undiscounted cash flows. If such assets are considered to be impaired, the impairment to be recognized is measured by the extent to which the carrying amount of the assets exceeds the estimated fair value of the assets. Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary. When impairment is identified, the carrying amount of the asset is reduced to its estimated fair value, and is recognized as a loss from operations. (Please see Note 4, "Fair Value Measurements", for additional information.)

Product Development and Engineering

Product development and engineering expenses primarily consist of research compensation, depreciation and amortization, and are expensed as incurred.

Advertising

Costs of broadcast advertising are recorded as expenses as advertising airtime is used. Other advertising expenditures are expensed as incurred.

Advertising expenses incurred in 2017, 2018 and 2019 totaled \$1.9 million, \$1.2 million and \$0.4 million, respectively. As of December 31, 2018 and 2019, prepaid advertising costs amounted to \$1 thousand and \$0 thousand, respectively.

Leases

General

On January 1, 2019, we adopted Accounting Standards Codification (“ASC”) Topic 842, “*Leases*,” using the modified retrospective transition method applied to contracts that were not complete as of the adoption date. Consolidated financial results for reporting periods beginning after January 1, 2019 are presented under ASC Topic 842, while prior period amounts continue to be reported in accordance with ASC Topic 840, “*Leases*”. Please refer to (d) for information about the impact of adoption on our consolidated financial statements.

Please refer to Note 1 of our consolidated financial statements contained in our previously-filed Annual Report on Form 20-F for the year ended December 31, 2018 for our lease accounting policy as it relates to lease transactions prior to January 1, 2019. The leases accounting policy described below relates to lease transactions from January 1, 2019 and onward, which are accounted for in accordance with ASC Topic 842.

We determine if an arrangement is or contains a lease at contract inception. In certain situations, judgment may be required in determining if a contract contains a lease. For these arrangements, there is judgment in evaluating if the arrangement provides us with an asset that is physically distinct, or that represents substantially all of the capacity of the asset, and if we have the right to direct the use of the asset. Lease assets and liabilities are recognized based on the present value of future lease payments over the lease term at the commencement date. Included in the lease liability are future lease payments that are fixed, in-substance fixed, or are payments based on an index or rate known at the commencement date of the lease. Variable lease payments are recognized as lease expenses as incurred, and generally relate to variable payments made based on the level of services provided by the lessor of our leases. The operating lease right-of-use (“ROU”) asset also includes any lease payments made prior to commencement, initial direct costs incurred, and lease incentives received. As most of our leases do not provide an implicit rate, we generally use our incremental borrowing rate in determining the present value of future payments. The incremental borrowing rate represents the rate required to borrow funds over a similar term to purchase the leased asset, and is based on the information available at the commencement date of the lease. For leased assets with similar lease terms and asset type we applied a portfolio approach in determining a single incremental borrowing rate to apply to the leased assets.

In determining our lease liability, the lease term includes options to extend or terminate the lease when it is reasonably certain that we will exercise such option. Leases with an initial term of 12 months or less are not recorded on the balance sheet, and we recognize lease expense for these leases on a straight-line basis over the lease term.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, our Company remeasures the lease liabilities with a corresponding adjustment to the ROU assets.

Operating lease ROU assets are presented in “Other assets” and operating lease liabilities are presented in “Other current liabilities” and “Other liabilities” on our consolidated balance sheets.

Share-Based Compensation

Share-based compensation represents the cost related to share-based awards granted to employees. We measure share-based compensation cost at the grant date, based on the estimated fair value of the award. Share-based compensation is recognized for the portion of the award that is ultimately expected to vest, and the cost is amortized on a straight-line basis (net of estimated forfeitures) over the vesting period. Our Company estimates the fair value of stock options using the Black-Scholes valuation model. The cost is recorded in costs of revenues and operating expenses in the consolidated statements of operations on the date of grant based on the employees’ respective function.

For shares and stock options granted to non-employees, we measure the fair value of the equity instruments granted at the earlier of the performance commitment date or when the performance is completed.

Retirement Plan and Net Periodic Pension Cost

Under our defined benefit pension plan, net periodic pension cost, which includes service cost, interest cost, expected return on plan assets, amortization of unrecognized net transition obligation and gains or losses on plan assets, is recognized based on an actuarial valuation report. We recognize the funded status of pension plans and non-pension post-retirement benefit plans (retirement-related benefit plans) as an asset or a liability in the consolidated balance sheets.

Under our defined contribution pension plans, net periodic pension cost is recognized as incurred.

Income Taxes

The asset and liability method is used in accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between financial reporting and tax bases of assets and liabilities. Deferred tax assets and liabilities, which are classified as noncurrent on the consolidated balance sheets, are measured using the enacted tax rate and laws that will be in effect when the related temporary differences are expected to reverse. A valuation allowance is established when necessary to reduce deferred tax assets to the amount that more-likely-than-not will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences and loss carryforwards become deductible.

In addition, we recognize the financial statement impact of a tax position when it is more-likely-than-not that the position will be sustained upon examination. If the tax position meets the more-likely-than-not recognition threshold, the tax effect is measured at the largest amount that is greater than a 50% likelihood of being realized upon settlement. Interest and penalties on an underpayment of income taxes are reflected as income tax expense in the consolidated financial statements.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed by dividing the net income (loss) attributable to common shareholders for the period by the weighted average number of common shares outstanding during the period. Diluted earnings (loss) per share is computed by dividing the net earnings (loss) for the period by the weighted average number of common shares and potential common shares outstanding during the period. Potential common shares, composed of incremental common shares issuable upon the exercise of options in all periods, are included in the computation of diluted earnings (loss) per share to the extent such shares are dilutive. Diluted earnings (loss) per share also takes into consideration the effect of dilutive securities issued by subsidiaries. In a period in which a loss is incurred, only the weighted average number of common shares issued and outstanding is used to compute the diluted loss per share, as the inclusion of potential common shares would be anti-dilutive. Therefore, for the years ended December 31, 2018 and 2019, basic and diluted loss per share were the same.

Segment Reporting

Our segment reporting is mainly based on lines of business. We use the management approach in determining reportable operating segments. The management approach considers the internal organization and reporting used by our Company's chief operating decision maker for making operating decisions, allocating resources and assessing performance as the source for determining our operating segments. Our Company's chief operating decision maker ("CODM") has been identified as the Chief Executive Officer.

Segment profit and loss is determined on a basis that is consistent with how our Company reports operating loss in its consolidated statements of operations. Our Company does not report segment asset information to the CODM. Consequently, no asset information by segment is presented. There are no intersegment transactions.

(d) Recently Adopted Accounting Pronouncements

Leases

As noted above, we adopted the new leases accounting standard effective January 1, 2019. We utilized the modified retrospective method upon adoption and elected to use the transition method that retrospectively reflected at the beginning of the period of adoption through a cumulative-effect adjustment. Additionally, we elected the practical expedients regarding (1) not reassessing to identify leases and initial direct costs and (2) using hindsight in determining the lease term and in assessing impairment of right-of-use assets; when applying the new leases accounting standard. As a result, the comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

We recognized the cumulative effect of initially applying the new leases accounting standard as an adjustment to the opening balance of retained earnings (accumulated deficit). The cumulative effect adjustment recorded to our accumulated deficits was \$1.1 million (please see our consolidated statements of changes in shareholders' equity) and included the impact from the following adjustments to our consolidated balance sheet at January 1, 2019:

(in US\$ thousands)	Balance at December 31, 2018	Adjustments due to adoption of new leases accounting standard	Balance at January 1, 2019
Consolidated Balance Sheet			
Liabilities			
Other noncurrent liabilities	\$ —	\$ 1,056	\$ 1,056
Shareholders' equity			
Accumulated deficit	(228,246)	(1,056)	(229,302)

The cumulative effect of the new leases accounting standard are mainly with respect to recognizing the lessee's lease liability under operating leases and impairments of the corresponding right-of-use assets, as such impairments occurred before the date of initial application. Under the prior accounting standards, payments for operating leases were recognized as expenses on a straight-line basis. Under the new leases standard, we are required to recognize right-of-use assets and lease liabilities for all leases at the commencement date of the lease, except for leases with terms of less than 12 months, and the right-of-use assets are to be subjected to impairment assessment.

Except for the cumulative effects discussed above, adoption of the new leases accounting standard did not have a significant impact to our consolidated balance sheet, consolidated statement of operations, and consolidated statement of cash flows as of and for the year ended December 31, 2019.

(e) Recent Accounting Pronouncements Not Yet Adopted

Financial Instruments

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which is an accounting update to amend the guidance on the impairment of financial instruments that are not measured at fair value through profit and loss. The amendment introduces a current expected credit loss (CECL) model based on expected losses rather than incurred losses to estimate credit losses on financial instruments measured at amortized cost and requires a broader range of reasonable and supportable information to estimate expected credit loss. In addition, under the amendment, an entity recognizes an allowance for expected credit losses on financial instruments measured at amortized cost and available-for-sale debt securities rather than the current methodology of delaying recognition of credit losses until it is probable a loss has been incurred. The amendment is effective for fiscal years beginning after December 15, 2019, and earlier adoption is permitted as of the fiscal years beginning after December 15, 2018. The adoption of the amendments are not expected to have a material impact on our Company's financial position, results of operations, cash flow and financial statement disclosures.

Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement*, which is an accounting update to amend fair value measurement disclosure requirements to eliminate, add and modify certain disclosures to improve the effectiveness of such disclosure. The amendments removed (1) the disclosure requirements for transfers between Levels 1 and 2 of the fair value hierarchy, (2) the policy for timing of transfers between levels of the fair value hierarchy, and (3) the valuation processes for Level 3 fair value measurements. Additionally, the amendments modified the disclosure requirements for investments in certain entities that calculate net asset value and measurement uncertainty. Finally, the amendments added disclosure requirements for the changes in unrealized gains and losses included in other comprehensive income for recurring Level 3 fair value measurements and the range and weighted average of significant unobservable inputs used to develop Level 3 measurements. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. This amendment is effective for annual periods beginning after December 15, 2019. Early adoption is permitted. The adoption of this amendment is not expected to have a material impact on the Company's financial statement disclosures.

Retirement Plan

In August 2018, the FASB issued ASU No. 2018-14, *Compensation—Retirement Benefits — Defined Benefit Plans — General* (Subtopic 715-20): Disclosure Framework — Changes to the Disclosure Requirements for Defined Benefit Plans, which is an accounting update to modify the disclosure requirements by removing, modifying and clarifying disclosures related to defined benefit plans. This amendment modified the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. Certain disclosure requirements have been removed while the disclosure requirements of (1) the weighted-average interest crediting rates for cash balance plans and other plans with promised interest crediting rates; and (2) an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period, have been added. The amendment also clarified the disclosure requirements with respect to the projected benefit obligation and the accumulated benefit obligation. The amendment is effective for fiscal years ending after December 15, 2020. Early adoption is permitted. The amendments should be applied on a retrospective basis to all periods presented. The adoption of this amendment is not expected to have a material impact on our Company’s financial statement disclosures.

Intangibles—Goodwill and Other

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software* (Subtopic 350-40), which is an accounting update to align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The amendment also requires the entity to present capitalized implementation costs and the related amortization in the same line item in the balance sheet, income statement and statement of cash flows as the presentation of the hosting (service) element of the arrangement. The amendment is effective for our Company’s fiscal years beginning after December 15, 2019. Early adoption is permitted. The amendment should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Our Company will adopt the amendments in this Update for fiscal years beginning January 1, 2020. The adoption of this amendment is not expected to have a material impact on our financial position, results of operations, cash flows and financial statement disclosures.

Income Taxes

In December 2019, the FASB issued ASU 2019-12 *Income Taxes* (Topic 740), which is an amendment that (i) eliminated certain exceptions for recognizing deferred taxes liability associated with ownership changes in foreign equity method investments, performing intraperiod allocation, and calculating income taxes in interim periods for year-to-date losses that exceed anticipated losses, (ii) simplified income tax accounting for franchise taxes that are partially based on income, transactions with a government that results in a step-up in the tax basis of goodwill, separate financial statements of legal entities that are not subject to tax, and (iii) enacted changes in tax laws in interim periods. This amendment is effective for our Company’s fiscal years beginning after December 15, 2020. Early adoption is permitted. The adoption of this amendment is not expected to have a material impact on our Company’s financial position, results of operations, cash flow and financial statement disclosures.

NOTE 2. EARNINGS (LOSS) PER SHARE

The following table provides a reconciliation of the denominators of the basic and diluted per share computations:

(in thousand shares)	2017	2018	2019
Weighted average number of outstanding shares			
Basic	11,052	11,052	11,052
Effect of dilutive securities			
Employee share-based compensation	—	—	—
Diluted	<u>11,052</u>	<u>11,052</u>	<u>11,052</u>

Certain outstanding options were excluded from the computation of diluted EPS since their effect would have been anti-dilutive. The antidilutive stock options excluded and their associated exercise prices per share were 308 thousand shares at the range of \$2.9 to \$80.05 as of December 31, 2017, 229 thousand shares at \$2.90 to \$12.35 as of December 31, 2018, and 225 thousand shares at \$2.90 to \$12.35 as of December 31, 2019. There were no antidilutive Restricted Stock Units (“RSUs”) as of December 31, 2019, 2018, and 2017.

NOTE 3. PREPAID LICENSING AND ROYALTY FEES

The following table summarizes changes to our Company's prepaid licensing and royalty fees:

(in US\$ thousands)	2017	2018	2019
Balance at beginning of year	\$ 1,020	\$ 459	\$ 435
Addition	486	968	205
Amortization and usage	(1,040)	(747)	(511)
Exchange difference	(7)	(1)	—
Impairment charges (Note 4)	—	(244)	(85)
Balance at end of year	<u>\$ 459</u>	<u>\$ 435</u>	<u>\$ 44</u>

At the end of 2018 and 2019, we recognized impairment losses of \$244 thousand and \$85 thousand, respectively, for the prepaid licensing and royalty fees related to certain licensed games that we stopped operating or for which the carrying amounts of the related assets were determined not to be recoverable from their expected future undiscounted cash flows.

We have entered licensing arrangements for our digital entertainment business. During prior years, prepaid licensing and royalty fees for one of the licensed games had been fully impaired and as a result the cost became nil. In 2017, the licensor of that gaming development company reached an agreement with us to terminate the license by compensating us in the amount of \$1.75 million and accordingly, we have recognized a gain of \$1.7 million as a reduction of operating expenses in the consolidated statements of operations for the year ended December 31, 2017.

NOTE 4. FAIR VALUE MEASUREMENTS

The following table presents the carrying amounts and estimated fair values of our Company's financial instruments at December 31, 2018 and 2019.

(in US\$ thousands)	2018		2019	
	Carrying amount	Fair value	Carrying amount	Fair value
<u>Financial assets</u>				
Cash and cash equivalents	\$ 59,308	\$ 59,308	\$ 57,743	\$ 57,743
Accounts receivable	523	523	368	368
Restricted cash	518	518	531	531
Refundable deposits	197	197	199	199
<u>Financial liabilities</u>				
Accounts payable	104	104	64	64
Accrued expenses	1,433	1,433	1,280	1,280
Lease liabilities - current and noncurrent	—	—	592	592

The carrying amounts shown in the table are included in the consolidated balance sheets under the indicated captions.

The fair values of the financial instruments shown in the above table as of December 31, 2018 and 2019 represent the amounts that would be received to sell those assets or that would be paid to transfer those liabilities in an arm's length transaction between market participants at that date. Those fair value measurements maximize the use of observable inputs. In situations where there is little market activity for the asset or liability at the measurement date, the fair value measurement reflects our Company's own judgments about the assumptions that market participants would use in pricing the asset or liability. Those judgments are developed by us based on the best information available in the circumstances, including expected cash flows and appropriately risk-adjusted discount rates, available observable and unobservable inputs.

The following methods and assumptions were used to estimate the fair value of each class of financial instruments:

- Cash and cash equivalents, accounts receivable, restricted cash, accounts payable, accrued expenses: The carrying amounts, at face value or cost plus accrued interest, approximate fair value because of the short maturity of these instruments.
- Refundable deposits: Measurement of refundable deposits with no fixed maturities is based on carrying amounts.

- Lease liabilities: Measured at discounted amounts of lease payments.

Assets and Liabilities that are Measured at Fair Value on a Recurring Basis

Our Company has segregated all financial assets and liabilities that are measured at fair value on a recurring basis (at least annually) into the most appropriate level within the fair value hierarchy based on the inputs used to determine the fair value at the measurement date in the table below.

Assets and liabilities measured at fair value on a recurring basis are summarized as below:

(in US\$ thousands)	Fair Value Measurement Using			At December 31, 2019
	Level 1	Level 2	Level 3	
Assets				
Cash equivalents - time deposits	\$ —	\$ 7	\$ —	\$ 7
Restricted cash - time deposits	—	531	—	531
	<u>\$ —</u>	<u>\$ 538</u>	<u>\$ —</u>	<u>\$ 538</u>

(in US\$ thousands)	Fair Value Measurement Using			At December 31, 2018
	Level 1	Level 2	Level 3	
Assets				
Cash equivalents - time deposits	\$ —	\$ 6	\$ —	\$ 6
Restricted cash - time deposits	—	518	—	518
	<u>\$ —</u>	<u>\$ 524</u>	<u>\$ —</u>	<u>\$ 524</u>

Our Company's accounting policy is to recognize transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer. There were no transfers into or out of Level 3 for the years ended December 31, 2018 and 2019.

Level 1 and 2 measurements:

Cash equivalents – time deposits and restricted cash – time deposits are interest-earning deposits in banks, and the cash flows are estimated based on the terms of the contracts and discounted using the market interest rates applicable to the maturity of the contracts, which are adjusted to reflect credit risks on counterparties. As the inputs into the valuation techniques are readily observable, these deposits are classified in Level 2 of the fair value hierarchy.

Level 3 measurements:

We did not hold assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during 2018 and 2019.

Assets and Liabilities that are Measured at Fair Value on a Nonrecurring Basis

Assets and liabilities measured at fair value on a nonrecurring basis include measuring impairment when required for long-lived assets. For GigaMedia, long-lived assets measured at fair value on a nonrecurring basis include investments accounted for under the equity method and cost method, property, plant, and equipment, intangible assets, operating lease ROU assets, and prepaid licensing and royalty fees.

We recognized the cumulative effects of impairment on the operating lease ROU assets when initially applying the new leases accounting standard at January 1, 2019, as such impairments occurred before the date of initial application. Please see Note 1, “Principal Activities, Basis of Presentation, and Summary of Significant Accounting Policies”, for additional information. Assets and liabilities measured at fair value on a nonrecurring basis that were determined to be impaired as of December 31, 2018 and 2019 are summarized as below:

(in US\$ thousands)	Fair Value measurement Using			At December 31, 2019	Total Impairment Losses
	Level 1	Level 2	Level 3		
Assets					
(a) Prepaid licensing and royalty fees	\$ —	\$ —	\$ —	\$ —	\$ 85
(b) Property, plant and equipment	—	—	—	—	109
(c) Intangible assets	—	—	—	—	15
Total	\$ —	\$ —	\$ —	\$ —	\$ 209

(in US\$ thousands)	Fair Value measurement Using			At December 31, 2018	Total Impairment Losses
	Level 1	Level 2	Level 3		
Assets					
(a) Prepaid licensing and royalty fees	\$ —	\$ —	\$ 84	\$ 84	\$ 244
Total	\$ —	\$ —	\$ 84	\$ 84	\$ 244

(a) Impairment losses on certain prepaid licensing and royalty fees which were determined to be impaired:
In 2018 and 2019, certain prepaid licensing and royalty fees were written down to \$84 thousand and zero, resulting in an impairment charge of \$244 thousand and \$85 thousand, respectively. This impairment is included in operating expenses in the consolidated statements of operations. The impairment charges for the prepaid licensing and royalty fees related to certain licensed games within our digital entertainment business that we stopped operating or for which the carrying amounts of the related assets were determined not to be recoverable from their expected future undiscounted cash flows. The licensing fee and related royalties are re-valued when impairment exists, using unobservable inputs such as discounted cash flows, incorporating adjusted available market discount rate information and our Company’s estimates for liquidity risk, along with other cash flow model related assumptions.

(b) Impairment losses on certain property, plant, and equipment which were determined to be impaired:

In 2019, we recognized an impairment loss of \$109 thousand on property, plant and equipment as while the recent years’ operating losses were expected to continue in the short-term, the carrying amounts of those long-lived assets would not be recoverable based on cash flow projections.

(c) Impairment losses on certain intangible assets which were determined to be impaired:

In 2019, we recognized an impairment loss of \$15 thousand on intangible assets as while the recent years’ operating losses were expected to continue in the short-term, the carrying amounts of those intangible assets would not be recoverable based on cash flow projections.

NOTE 5. CASH, CASH EQUIVALENTS AND RESTRICTED CASH

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the consolidated balance sheets that sum to the total of the same such amounts shown in the consolidated statements of cash flows as of December 31, 2018 and 2019.

(in US\$ thousands)	December 31	
	2018	2019
Cash and savings accounts	\$ 59,302	\$ 57,736
Time deposits	6	7
Cash and cash equivalents reported on the consolidated balance sheets	59,308	57,743
Cash restricted as performance bond	518	531
Total cash, cash equivalents and restricted cash reported on the consolidated statements of cash flows	\$ 59,826	\$ 58,274

As of December 31, 2018 and 2019, cash amounting to \$518 thousand and \$531 thousand, respectively, has been deposited in an escrow account in a bank as a performance bond for our players' game points. These deposits are restricted and are included in restricted cash in the consolidated balance sheets.

We maintain cash and cash equivalents, as well as restricted cash, in bank accounts with major financial institutions with high credit ratings located in the following jurisdictions:

(in US\$ thousands)	December 31	
	2018	2019
Taiwan	\$ 54,078	\$ 52,261
Hong Kong	5,732	5,997
China	16	16
	\$ 59,826	\$ 58,274

NOTE 6. ACCOUNTS RECEIVABLE – NET

Accounts receivable consist of the following:

(in US\$ thousands)	December 31	
	2018	2019
Accounts receivable	\$ 528	\$ 371
Less: Allowance for doubtful accounts	(5)	(3)
	\$ 523	\$ 368

The following is a summary of the changes in our Company's allowance for doubtful accounts during the years ended December 31, 2017, 2018 and 2019:

(in US\$ thousands)	2017	2018	2019
Balance at beginning of year	\$ 32	\$ 12	\$ 5
Additions: Bad debt expense	127	23	24
Less: Write-off	(149)	(29)	(26)
Translation adjustment	2	(1)	—
Balance at end of year	\$ 12	\$ 5	\$ 3

NOTE 7. OTHER CURRENT ASSETS

Other current assets consist of the following:

(in US\$ thousands)	December 31	
	2018	2019
Loans receivable - current	\$ 29	\$ 30
Less: Allowance for loans receivable - current	(29)	(30)
Other receivable	3	—
Other	121	139
	<u>\$ 124</u>	<u>\$ 139</u>

The following is a reconciliation of changes in our Company's allowance for loans receivable - current during the years ended December 31, 2017, 2018 and 2019:

(in US\$ thousands)	2017	2018	2019
Balance at beginning of year	\$ 28	\$ 30	\$ 29
Reversal for collection of bad debt	—	—	—
Translation adjustment	2	(1)	1
Balance at end of year	<u>\$ 30</u>	<u>\$ 29</u>	<u>\$ 30</u>

NOTE 8. LEASE ARRANGEMENTS

a. Right-of-use assets

(in US\$ thousands)	2019		
	Cost	Accumulated depreciation	Net
Recognition of right-of-use assets upon adoption of ASC 842 at beginning of year (Note 1)	\$ 1,056	\$ —	\$ 1,056
Recognition of impairment upon adoption of ASC 842 at beginning of year (Note 1)	(1,056)	—	(1,056)
Balance at end of year	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

b. Lease liabilities

(in US\$ thousands)	December 31, 2019
Carrying amount:	
Current portion (classified under other current liabilities)	\$ 498
Noncurrent portion	94
	<u>\$ 592</u>

Discount rates for the existing lease liabilities ranged from 1.7% to 2.8%.

c. Material terms of right-of-use assets

We lease office premises, office equipment and automobile for operational use with lease terms of 2 to 5 years. We do not have purchase options to acquire the leasehold office premises at the end of the lease terms.

d. Supplemental information

Supplemental disclosures of cash flow information consist of the following:

(in US\$ thousands)	For the Year ended December 31, 2019
Cash paid for operating leases	\$ 510
Right-of-use assets obtained in exchange for operating lease liabilities	1,056

Operating lease expenses were \$15 thousand during the year ended December 31, 2019.

The table below reconciles the undiscounted cash flows for each of the first five years and total of the remaining years to the operating lease liabilities recorded on the consolidated balance sheet as of December 31, 2019:

(in US\$ thousands)	Operating Leases
Year	
2020	\$ 504
2021	92
2022	1
2023	1
2024	1
Total minimum lease payments	599
Less: amount of lease payments representing interest	(7)
Present value of future minimum lease payments	592
Less: current obligation under leases	(498)
Non-current lease obligations	<u>\$ 94</u>

We have elected the transition option under ASU 2016-02 and continued to apply the prior accounting standard for leases, including the disclosure requirements, in the comparative periods. Future minimum lease payments due under those lease agreements as of December 31, 2018 were as follows:

(in US\$ thousands)	December 31, 2018
Not later than 1 year	\$ 450
Later than 1 year and not later than 5 years	504
Later than 5 years	—
Balance at end of year	<u>\$ 954</u>

Rent expense for the years ended December 31, 2018 and 2017 were \$493 thousand and \$577 thousand, respectively, recognized on a straight-line basis for the Company's office and car leases which were accounted for as operating leases.

NOTE 9. ACCRUED EXPENSES

Accrued expenses consist of the following:

(in US\$ thousands)	December 31	
	2018	2019
Accrued professional fees	\$ 429	\$ 401
Accrued compensation	170	200
Accrued royalties	275	152
Accrued advertising expenses	134	76
Accrued director compensation and liability insurance	70	70
Other	355	381
	<u>\$ 1,433</u>	<u>\$ 1,280</u>

NOTE 10. DEFERRED REVENUE

Deferred revenue consists of the following:

(in US\$ thousands)	December 31	
	2018	2019
Unused virtual points	\$ 1,094	\$ 999
Unamortized virtual items	276	366
	<u>\$ 1,370</u>	<u>\$ 1,365</u>

The breakage amounts recognized as revenue during the years ended December 2018 and 2019 were \$0 and \$63 thousand, respectively. The cumulative amount of breakage for the years during and prior to 2017 was \$346 thousand, recorded to our accumulated deficits at January 1, 2018 as a cumulative effect of initially applying the new revenue accounting standard.

NOTE 11. PENSION BENEFITS

Our Company and our subsidiaries have defined benefit and defined contribution pension plans that cover substantially all of our employees.

Defined Benefit Pension Plan

We have a defined benefit pension plan in accordance with the Labor Standards Law of the Republic of China (R.O.C.) for our employees located in Taiwan, covering substantially all full-time employees for services provided prior to July 1, 2005, and employees who have elected to remain in the defined benefit pension plan subsequent to the enactment of the Labor Pension Act on July 1, 2005. Under the defined benefit pension plan, employees are entitled to a lump sum retirement benefit upon retirement equivalent to the aggregate of 2 months' pensionable salary for each of the first 15 years of service and 1 month's pensionable salary for each year of service thereafter subject to a maximum of 45 months' pensionable salary. The pensionable salary is the monthly average salary or wage of the final six months prior to approved retirement.

We use December 31 as the measurement date for our defined benefit pension plan. As of December 31, 2018 and 2019, the accumulated benefit obligation amounted to \$233 thousand and \$238 thousand, respectively, and the funded status of prepaid pension assets amounted to \$56 thousand and \$85 thousand, respectively. The fair value of plan assets amounted to \$376 thousand and \$411 thousand as of December 31, 2018 and 2019, respectively. The accumulated other comprehensive loss amounted to (\$86) thousand and (\$66) thousand as of December 31, 2018 and 2019, respectively. The net periodic benefit cost for 2017, 2018 and 2019 amounted to \$0 thousand, \$1 thousand and \$2 thousand, respectively.

The following table sets forth the plan's benefit obligations, fair value of plan assets, and funded status at December 31, 2018 and 2019:

(in US\$ thousands)	December 31	
	2018	2019
Benefit Obligation	\$ 320	\$ 326
Fair value of plan assets	376	411
	<u>\$ (56)</u>	<u>\$ (85)</u>
Amounts recognized in the balance sheet consist of:		
Noncurrent liabilities (assets)	\$ (56)	\$ (85)
Accumulated other comprehensive income	—	—
Net amount recognized	<u>\$ (56)</u>	<u>\$ (85)</u>
Amounts recognized in accumulated comprehensive income (loss) consist of:		
Unrecognized net gain (loss)	\$ (86)	\$ (66)

For the years ended December 31, 2017, 2018 and 2019, the net period pension cost consisted of the following:

(in US\$ thousands)	December 31		
	2017	2018	2019
Service cost	\$ —	\$ —	\$ —
Interest cost	4	5	4
Expected return on plan assets	(5)	(6)	(5)
Amortization of net loss	1	2	3
Curtailment gain	—	—	—
	<u>\$ —</u>	<u>\$ 1</u>	<u>\$ 2</u>

Weighted average assumptions used to determine benefit obligations for 2018 and 2019 were as follows:

	December 31	
	2018	2019
Discount rate	1.375%	1.125%
Rate of compensation increase	2.00%	2.00%

Weighted average assumptions used to determine net periodic benefit cost for end of fiscal year were as follows:

	2018	2019
	Discount rate	1.625%
Rate of return on plan assets	1.625%	1.375%
Rate of compensation increase	2.00%	2.00%

Management determines the discount rate and rate of return on plan assets based on the yields of twenty year ROC central government bonds which is in line with the respective employees remaining service period and the historical rate of return on the above mentioned Fund mandated by the ROC Labor Standard Law.

We have contributed an amount equal to 2% of the salaries and wages paid to all qualified employees located in Taiwan to a pension fund (the “Fund”). The Fund is administered by a pension fund monitoring committee (the “Committee”) and deposited in the Committee’s name in the Bank of Taiwan. Our Company makes pension payments from our account in the Fund unless the Fund is insufficient, in which case we make payments from internal funds as payments become due. We seek to maintain a normal, highly liquid working capital balance to ensure payments are made timely.

We expect to make a contribution of \$8 thousand to the Fund in 2020. We expect to make future benefit payments of \$1 thousand to employees from 2020 to 2024 and \$14 thousand from 2025 to 2029.

Defined Contribution Pension Plans

We have provided defined contribution plans for employees located in Taiwan and Hong Kong. Contributions to the plans are expensed as incurred.

Taiwan

Pursuant to the new “Labor Pension Act” enacted on July 1, 2005, our Company has a defined contribution pension plan for our employees located in Taiwan. For eligible employees who elect to participate in the defined contribution pension plan, we contribute no less than 6% of an employee’s monthly salary and wage and up to the maximum amount of NT\$9 thousand (approximately \$300), to each of the eligible employees’ individual pension accounts at the Bureau of Labor Insurance each month. Pension payments to employees are made either by monthly installments or in a lump sum from the accumulated contributions and earnings in employees’ individual accounts.

Hong Kong

According to the relevant Hong Kong regulations, we provide a contribution plan for the eligible employees in Hong Kong. We must contribute at least 5% of the employees’ total salaries. For this purpose, the monthly relevant contribution to their individual contribution accounts is subject to a cap of HK\$1.5 thousand (approximately \$193). After the termination of employment, the benefits still belong to the employees in any circumstances.

The total amount of defined contribution pension expenses pursuant to our defined contribution plans for the years ended December 31, 2017, 2018 and 2019 were \$190 thousand, \$210 thousand, and \$187 thousand, respectively, which are included in operating expenses.

NOTE 12. SHAREHOLDERS' EQUITY

In accordance with Singapore law, the holders of ordinary shares that do not have par value, are entitled to receive dividends as declared from time to time and are entitled to one vote per share at the general meeting of our company. All shares rank equally with regard to our company's residual assets. In addition, we are not required to have a number of authorized common shares to be issued.

NOTE 13. ACCUMULATED OTHER COMPREHENSIVE LOSS

The accumulated balances for each component of other comprehensive income (loss) are as follows:

(in US\$ thousands)	Foreign currency items	Unrealized gain on securities	Pension and post retirement benefit plans	Accumulated other comprehensive loss
Balance at January 1, 2017	\$ (22,555)	\$ 2	\$ (58)	\$ (22,611)
Net current period change	641	—	(11)	630
Reclassification adjustments for gains reclassified into income	—	(2)	—	(2)
Balance at December 31, 2017	(21,914)	—	(69)	(21,983)
Net current period change	(332)	—	(17)	(349)
Balance at December 31, 2018	(22,246)	—	(86)	(22,332)
Net current period change	66	—	20	86
Balance at December 31, 2019	<u>\$ (22,180)</u>	<u>\$ —</u>	<u>\$ (66)</u>	<u>\$ (22,246)</u>

There were no significant tax effects allocated to each component of other comprehensive income for the years ended December 31, 2017, 2018 and 2019.

NOTE 14. SHARE-BASED COMPENSATION

During 2017, 2018 and 2019, all the stock-based compensation expenses were recognized in the general and administrative expenses in our consolidated statements of operations. The stock-based compensation expense recognized in the general and administrative expenses in our consolidated statements of operations were (\$7) thousand, \$3 thousand and \$1 thousand, respectively.

There were no significant capitalized stock-based compensation costs at December 31, 2018 and 2019. There was no recognized stock-based compensation tax benefit for the years ended December 31, 2017, 2018 and 2019, as our Company recognized a full valuation allowance on net deferred tax assets as of December 31, 2018 and 2019.

(a) Overview of Stock-Based Compensation Plans**2004 Employee Share Option Plan**

At the June 2004 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2004 Employee Share Option Plan (the “2004 Plan”) under which up to 1.4 million common shares of our Company have been reserved for issuance. All employees, officers, directors, supervisors, advisors, and consultants of our Company are eligible to participate in the 2004 Plan. The 2004 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the exercise price for the option grants, the eligible individuals who are to receive option grants, the time or times when options grants are to be made, the number of shares subject to grant and the vesting schedule. The maximum contractual term for the options under the 2004 Plan is 10 years.

2006 Equity Incentive Plan

At the June 2006 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2006 Equity Incentive Plan (the “2006 Plan”) under which up to 200 thousand common shares of our Company have been reserved for issuance. The 2006 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2006 Plan. The maximum contractual term for the options under the 2006 Plan is 10 years.

2007 Equity Incentive Plan

At the June 2007 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2007 Equity Incentive Plan (the “2007 Plan”) under which up to 400 thousand common shares of our Company have been reserved for issuance. The 2007 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2007 Plan. The maximum contractual term for the options under the 2007 Plan is 10 years.

2008 Equity Incentive Plan

At the June 2008 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2008 Equity Incentive Plan (the “2008 Plan”) under which up to 200 thousand common shares of our Company have been reserved for issuance. The 2008 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2008 Plan. The maximum contractual term for the options under the 2008 Plan is 10 years.

2008 Employee Share Purchase Plan

At the June 2008 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2008 Employee Share Purchase Plan (the “2008 ESPP”) under which up to 40 thousand common shares of our Company were reserved for issuance. Any person who is regularly employed by our Company or our designated subsidiaries shall be eligible to participate in the 2008 ESPP. Pursuant to the 2008 ESPP, our Company would offer the shares to qualified employees on favorable terms. Employees are also subject to certain restrictions on the amount that may be invested to purchase the shares and to other terms and conditions of the 2008 ESPP. The 2008 ESPP is administered by a committee designated by the board of directors. As of December 31, 2019, no shares have been subscribed by qualified employees under the 2008 ESPP.

2009 Equity Incentive Plan

At the June 2009 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2009 Equity Incentive Plan (the “2009 Plan”) under which up to 300 thousand common shares of our Company have been reserved for issuance. The 2009 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2009 Plan. The maximum contractual term for the options under the 2009 Plan is 10 years.

2009 Employee Share Purchase Plan

At the June 2009 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2009 Employee Share Purchase Plan (the “2009 ESPP”) under which up to 40 thousand common shares of our Company have been reserved for issuance. To be eligible, employees must be regularly employed by us or our designated subsidiaries. Employees are also subject to certain restrictions on the amount that may be invested to purchase the shares and to other terms and conditions of the 2009 ESPP. The 2009 ESPP is administered by a committee designated by the board of directors. As of December 31, 2019, no shares were issued to employees under the 2009 ESPP.

2010 Equity Incentive Plan

At the June 2010 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2010 Equity Incentive Plan (the “2010 Plan”) under which up to 200 thousand common shares of our Company have been reserved for issuance. The 2010 Plan is administered by a committee designated by the board of directors. The committee as plan administrator has complete discretion to determine the grant of awards under the 2010 Plan. The maximum contractual term for the options under the 2010 Plan is 10 years.

2010 Employee Share Purchase Plan

At the June 2010 annual general meeting of shareholders, the shareholders of our Company approved the GigaMedia Limited 2010 Employee Share Purchase Plan (the “2010 ESPP”) under which up to 40 thousand common shares of our Company have been reserved for issuance. To be eligible, employees must be regularly employed by us or our designated subsidiaries. Employees are also subject to certain restrictions on the amount that may be invested to purchase the shares and to other terms and conditions of the 2010 ESPP. The 2010 ESPP is administered by a committee designated by the board of directors. As of December 31, 2019, no shares were issued to employees under the 2010 ESPP.

Summarized below are the general terms of our stock-based compensation plans, for which awards have been granted as of December 31, 2019.

Stock-Based compensation plan	Granted awards	Vesting schedule	Options' exercise price	RSUs' grant date fair value
2004 plan	1,575,037 ⁽¹⁾	immediately upon granting to four years	\$3.95~\$12.75	—
2006 Plan	256,716 ⁽²⁾	immediately upon granting to four years	\$3.85~\$83	\$14.55~\$80.05
2007 Plan	675,057 ⁽³⁾	immediately upon granting to four years	\$2.90~\$90.85	\$12.35~\$76.75
2008 Plan	200,000	immediately upon granting to six years	\$12.35~\$21.20	—
2009 Plan	500,000 ⁽⁴⁾	immediately upon granting to four years	\$4.775~\$12.35	—
2010 Plan	440,000 ⁽⁵⁾	three years	\$4.0505~\$5.7	—

(1) The granted awards, net of forfeited or canceled options, were within reserved shares of 1,400 thousand common shares.

(2) The granted awards, net of forfeited or canceled options or shares, were within reserved shares of 200 thousand common shares.

(3) The granted awards, net of forfeited or canceled options or shares, were within reserved shares of 400 thousand common shares.

(4) The granted awards, net of forfeited or canceled options, were within reserved shares of 300 thousand common shares.

(5) The granted awards, net of forfeited or canceled options, were within reserved shares of 200 thousand common shares.

Options and RSUs generally vest over the schedule described above. Certain RSUs provide for accelerated vesting if there is a change in control. All options and RSUs are expected to be settled by issuing new shares.

(b) Options

In 2017, 2018 and 2019, no options were exercised for each year.

Our Company uses the Black-Scholes option-pricing model to estimate the fair value of stock options granted to employees on the grant date. No options were granted to employees during 2018 and 2019. The following table summarizes the assumptions used in the model for options granted during 2017:

	2017
Option term (years)	6.01
Volatility	48.997%
Weighted-average volatility	48.997%
Risk-free interest rate	2.031%
Dividend yield	0%
Weighted-average fair value of option granted	\$ 1.41

Option term. The expected term of the options granted represents the period of time that they are expected to be outstanding. Our Company estimates the expected term of options granted based on historical experience with grants and option exercises.

Expected volatility rate. An analysis of historical volatility was used to develop the estimate of expected volatility.

Risk-free interest rate. The risk-free interest rate is based on yields of U.S. Treasury bonds for the expected term of the options.

Expected dividend yield. The dividend yield is based on our Company's current dividend yield.

Option transactions during the last three years are summarized as follows:

	2017		2018		2019		Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (in thousands)
	Weighted Avg. Exercise Price	No. of Shares (in thousands)	Weighted Avg. Exercise Price	No. of Shares (in thousands)	Weighted Avg. Exercise Price	No. of Shares (in thousands)		
Balance at January 1	\$ 20.63	613	\$ 14.78	308	\$ 10.88	229		
Options granted	2.90	4	—	—	—	—		
Options exercised	—	—	—	—	—	—		
Options Forfeited / canceled / expired	26.24	(309)	26.08	(79)	3.85	(4)		
Balance at December 31	\$ 14.78	308	\$ 10.88	229	\$ 11.00	225	1.07	\$ —
Exercisable at December 31	\$ 15.16	298	\$ 10.97	227	\$ 11.05	224	1.03	\$ —
Vested and expected to vest at December 31	\$ 14.78	308	\$ 10.88	229	\$ 11.00	225	1.07	\$ —

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value (the difference between GigaMedia's closing stock price on the last trading day of 2019 and the exercise price of an option, multiplied by the number of in-the-money options) that would have been received by the option holders had they exercised their options on December 31, 2019. This amount changes based on the fair market value of GigaMedia's stock.

As of December 31, 2019, there was approximately \$0.3 thousand of unrecognized compensation cost related to nonvested options. That cost is expected to be recognized over a period of 0.35 years.

The following table sets forth information about stock options outstanding at December 31, 2019:

Options outstanding			Option currently exercisable	
Exercise price	No. of Shares (in thousands)	Weighted average remaining contractual life	Exercise price	No. of Shares (in thousands)
Under \$5	8	4.68 years	Under \$5	7
\$5~\$50	217	0.93 years	\$5~\$50	217
\$50~\$100	—		\$50~\$100	—
	<u>225</u>			<u>224</u>

(c) RSUs

The fair value of RSUs is determined and fixed on the grant date based on our stock price. No RSUs were granted during the years ended December 31, 2017, 2018 and 2019.

As of December 31 2018 and 2019, there was no unrecognized compensation cost related to nonvested RSUs. Our Company received no cash from employees as a result of employee stock award vesting and the forfeiture of RSUs during 2017, 2018 and 2019.

NOTE 15. INCOME TAXES

Income (loss) before income taxes by geographic location is as follows:

(in US\$ thousands)	2017	2018	2019
Taiwan operations	\$ 893	\$ (3,146)	\$ (2,191)
Non-Taiwan operations	(1,478)	(47)	532
	<u>\$ (585)</u>	<u>\$ (3,193)</u>	<u>\$ (1,659)</u>

The components of income tax benefit (expense) by taxing jurisdiction are as follows:

(in US\$ thousands)	2017	2018	2019
Taiwan:			
Current	\$ —	\$ —	\$ —
Deferred	—	—	—
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Non-Taiwan:			
Current	\$ (1)	\$ —	\$ —
Deferred	1,672	—	—
	<u>\$ 1,671</u>	<u>\$ —</u>	<u>\$ —</u>
Total current income tax benefit (expense)	<u>\$ (1)</u>	<u>\$ —</u>	<u>\$ —</u>
Total deferred income tax benefit	<u>\$ 1,672</u>	<u>\$ —</u>	<u>\$ —</u>
Total income tax benefit	<u>\$ 1,671</u>	<u>\$ —</u>	<u>\$ —</u>

Our ultimate parent company is based in Singapore.

A reconciliation of our effective tax rate related to the statutory tax rate in Taiwan, where our major operations are based, is as follows:

	2017	2018	2019
Taiwan statutory rate, including taxes on income and retained earnings	23.85%	24.00%	24.00%
Foreign tax differential	1.10%	3.43%	10.14%
Reversal of deferred withholding tax liabilities	285.84%	—	—
Tax-exempt income	—	—	—
Non-deductible items - bad debts	—	(0.22)%	—
Other non-deductible expenses	(44.79)%	(3.50)%	(7.01)%
Changes in unrecognized tax benefits	—	17.17%	—
Cumulative effect of initially applying new accounting standards	—	—	13.13%
Change in deferred tax assets and valuation allowance	13.43%	(42.02)%	(43.38)%
Change in tax rate	—	0.15%	—
Other	6.33%	0.99%	3.12%
Effective rate	<u>285.76%</u>	<u>—</u>	<u>—</u>

The significant components of our deferred tax assets consist of the following:

(in US\$ thousands)	December 31	
	2018	2019
Net operating loss carryforwards	\$ 11,136	\$ 12,005
Share-based compensation	292	299
Investments	131	134
Lease right-of-use assets	—	122
Intangible assets and goodwill	119	64
Other	87	108
	<u>11,765</u>	<u>12,732</u>
Less: valuation allowance	(11,765)	(12,732)
Deferred tax assets - net	<u>\$ —</u>	<u>\$ —</u>

In October 2017, a subsidiary of ours in the U.S. dissolved and liquidated, for which it filed a final tax return in February 2018. The gain resulted from such liquidation was treated as capital gain, which is exempt from U.S. withholding tax. As such, there was a reversal of the deferred income tax liabilities of \$1,671 thousand as such deferred income tax liabilities were originally accrued for a potential withholding obligation upon possible distribution.

A reconciliation of the beginning and ending amounts of our valuation allowance on deferred tax assets for the years ended December 31, 2017, 2018 and 2019 are as follows:

(in US\$ thousands)	2017	2018	2019
Balance at beginning of year	\$ 11,852	\$ 9,928	\$ 11,765
Subsequent reversal and utilization of valuation allowance	(3,352)	—	(17)
Additions to valuation allowance	745	2,107	723
Exchange differences	683	(270)	261
Balance at end of year	<u>\$ 9,928</u>	<u>\$ 11,765</u>	<u>\$ 12,732</u>

Under ROC Income Tax Act, the tax loss carryforward in the preceding ten years would be deducted from income tax for Taiwan operations.

As of December 31, 2019, we had net operating loss carryforwards available to offset future taxable income, shown below by major jurisdictions:

<u>Jurisdiction</u>	<u>Amount</u>	<u>Expiring year</u>
Hong Kong	\$ 15,759	indefinite
Taiwan	39,189	2020~2029
	<u>\$ 54,948</u>	

Pursuant to the amendment of the ROC Income Tax Act in February 2018, starting from 2018, the corporate income tax rate was adjusted from 17% to 20%. In addition, the tax rate applicable to the undistributed portion of earnings to be made in 2018 and thereafter was reduced from 10% to 5%.

Unrecognized Tax Benefits

A reconciliation of the beginning and ending amount of unrecognized tax benefits (excluding the effects of accrued interest) for the years 2017, 2018 and 2019 are as follows:

(in US\$ thousands)	2017	2018	2019
Balance at beginning of year	\$ 1,024	\$ 1,110	\$ —
Increase related to prior year tax positions	—	—	—
Decrease related to prior year tax positions	—	—	—
Settlement of intercompany charge adjustments	—	(1,095)	—
Expiration of statute of limitations	—	—	—
Exchange differences	86	(15)	—
Balance at end of year	<u>\$ 1,110</u>	<u>\$ —</u>	<u>\$ —</u>

As of December 31, 2017, 2018 and 2019, there were no unrecognized tax benefits that if recognized would affect the effective tax rate. As of December 31, 2017, 2018 and 2019, \$1.1 million, \$0 and \$0 of the total unrecognized tax benefit were presented as a reduction of a deferred tax asset that, if recognized, would be offset by a valuation allowance.

There were no interest and penalties related to income tax liabilities recognized for the years ended December 31, 2017, 2018 and 2019.

Our major tax paying components are all located in Taiwan. As of December 31, 2019, the income tax filings in Taiwan have been examined for the years through 2017.

In 2017 and 2018, our unrecognized tax benefits were related to intercompany charges in 2014 and 2015. The income tax authority has made decisions on the intercompany charges for our tax filings through 2014. We filed appeals against the unfavorable parts of the decision regarding these intercompany charge adjustments, and subsequently reached agreement and settlement in 2018 with the tax authority regarding the tax filings for those years. The settlement did not have significant impact to our financial statements.

The amount of unrecognized tax benefits may increase or decrease in the future for various reasons such as current year tax positions, expiration of statutes of limitations, litigation, legislative activity, or other changes in facts regarding realizability. Taiwanese entities are customarily examined by the tax authorities and it is reasonably possible that a future examination may result in positive or negative adjustment to our unrecognized tax benefit within the next 12 months.

NOTE 16. COMMITMENTS AND CONTINGENCIES

Commitments

(a) Operating Leases

We rent certain office premises, office equipment and automobile for operation use under lease agreements that expire at various dates through 2024. The following table sets forth our future aggregate minimum lease payments required under these operating leases, as of December 31, 2019:

(in US\$ thousands)	Amount
2020	\$ 504
2021	92
2022	1
2023	1
2024 and after	1
	<u>\$ 599</u>

Please refer to Note 8 for more information of our lease arrangements.

(b) License Agreements

We have contractual obligations under various license agreements to pay the licensors license fees and minimum guarantees against future royalties. There were no committed license fees and minimum guarantees against future royalties set forth in our significant license agreements as of December 31, 2019.

For a specific licensed game, we are committed to paying an incentive fee of \$30 thousand to the licensor for every \$500 thousand additional revenues generated from the game during the agreement period from January 2018 to January 2020. In January 2020, we entered an extension and amendment agreement to extend the term and modified certain provisions. The extension term commenced on January 27, 2020, and expires on January 26, 2022, and the incentive fee is \$30 thousand for every \$500 thousand additional revenues generated during the extension term.

Contingencies

We are subject to legal proceedings and claims that arise in the normal course of business.

On January 15, 2018, Ennoconn Corporation (“Ennoconn”) filed a complaint against one of our subsidiaries, GigaMedia Cloud Services Co., Ltd. (“GigaMedia Cloud”) in the Taiwan Taipei District Court. The complaint alleged that GigaMedia Cloud is obligated to pay Ennoconn NTD 79,477,648 (approximately \$2,697,471) in connection with a transaction to purchase taximeters in 2015. GigaMedia Cloud filed an answer to the complaint denying Ennoconn’s allegations in the lack of factual and legal basis on March 1, 2018. On November 15, 2018, the Taiwan Taipei District Court determined that all of Ennoconn’s claims were without merit and made a judgment denying the complaint. On January 3, 2019, Ennoconn filed an appeal demanding the judgment which was entered in the District Court, to be reversed and amended. The civil court of the second instance, the Taiwan High Court, has conducted the session of the preparatory proceedings for several times during the past year. As a result, the Taiwan High Court ruled on January 8, 2020, that the decision of the Taiwan Taipei District Court should be partially modified and Ennoconn is entitled to NTD 27,084,180 (approximately \$892,763). GigaMedia Cloud has filed another appeal with the Taiwan Supreme Court on February 4, 2020. GigaMedia Cloud accrued its best estimate for the ultimate resolution of this claim. On the other hand, pursuant to Taiwan’s Company Act, the shareholder of GigaMedia Cloud is limitedly liable for GigaMedia Cloud in an amount equal to the total value of shares subscribed. Therefore, we believe that the immediate parent company, the intermediate parent companies, as well as GigaMedia, the ultimate parent company, individually or collectively do not have obligations to absorb GigaMedia Cloud’s loss exceeding its net worth, amounting to approximately \$100 thousand before such accrual, as of December 31, 2019, and accordingly, it will not have a material adverse effect on our financial condition, results of operations or cash flows.

NOTE 17. SEGMENT, PRODUCT, GEOGRAPHIC AND OTHER INFORMATION

We have only one segment, the digital entertainment business segment, which operates a portfolio of digital entertainment products, primarily targeting digital entertainment service users across Asia.

Our Company uses the income from operations as the measurement for the basis of performance assessment. The basis for such measurement is the same as that for the preparation of financial statements. Please refer to the consolidated statements of profit or loss and other comprehensive income for the related segment revenue and operating results.

Major Product Lines

Revenues from our Company's major product lines are summarized as follow:

(in US\$ thousands)	2017	2018	2019
MahJong and casino casual games	\$ 2,364	\$ 1,816	\$ 1,778
PC-based massive multiplayer online games	1,400	1,272	1,204
Mobile role playing games	7,776	3,998	3,538
Other games and game related revenues	56	15	125
	<u>\$ 11,596</u>	<u>\$ 7,101</u>	<u>\$ 6,645</u>

Major Customers

No single customer represented 10% or more of GigaMedia's consolidated total net revenues in any period presented.

Geographic Information

Revenues by geographic area are attributed by country of the operating entity location. Revenue from by geographic region is as follows:

(in US\$ thousands)	2017	2018	2019
Geographic region / country			
Taiwan	\$ 2,349	\$ 2,958	\$ 3,074
Hong Kong	9,247	4,143	3,571
	<u>\$ 11,596</u>	<u>\$ 7,101</u>	<u>\$ 6,645</u>

Net tangible long-lived assets by geographic region are as follows:

(in US\$ thousands)	December 31		
Geographic region / country	2017	2018	2019
Taiwan	\$ 62	\$ 94	\$ —
Hong Kong	96	27	—
	<u>\$ 158</u>	<u>\$ 121</u>	<u>\$ —</u>

NOTE 18. SUBSEQUENT EVENT

There have been no events that have occurred subsequent to December 31, 2019 and through the date that the consolidated financial statements are issued that would require adjustment to or disclosure except as already disclosed in the consolidated financial statements.

List of Subsidiaries

Subsidiary	Year of Incorporation	Jurisdiction of Incorporation
Hoshin GigaMedia Center Inc.....	1998	Taiwan
GigaMedia (HK) Limited.....	2004	Hong Kong
GigaMedia International Holdings Limited.....	2004	British Virgin Islands
Cambridge Entertainment Software Limited.....	2004	British Virgin Islands
FunTown World Limited.....	2005	British Virgin Islands
GigaMedia Online Entertainment Corp.....	2009	Cayman Islands
FunTown Hong Kong Limited.....	1999	Hong Kong
GigaMedia Freestyle Holdings Limited.....	2009	British Virgin Islands
GigaMedia Cloud Services Co. Ltd.	2011	Taiwan
GigaMedia Development Corporation.....	2013	Taiwan
Gaminfinity Publishing Co. Ltd.	2013	Taiwan
Play2gether Digital Technology Co. Ltd.....	2013	Taiwan
GigaMedia (Cayman) Ltd.	2015	Cayman Islands
Megabiz Limited.....	2010	British Virgin Islands
Wen He Investment Ltd.	2014	Taiwan
Shanghai Pontoon Networking Technology Co., Ltd.....	2014	China

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14 OR 15d-14 OF THE SECURITIES EXCHANGE ACT OF 1934, AS
ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Cheng-Ming Huang, Chief Executive Officer of GigaMedia Limited, certify that:

1. I have reviewed this annual report on Form 20-F of GigaMedia Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer 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 officer 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 27, 2020

By: /s/ HUANG, CHENG-MING
Name: HUANG, CHENG-MING
Title: Chief Executive Officer

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14 OR 15d-14 OF THE SECURITIES EXCHANGE ACT OF 1934, AS
ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Cheng-Ming Huang, Chief Financial Officer of GigaMedia Limited, certify that:

1. I have reviewed this annual report on Form 20-F of GigaMedia Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer 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 officer 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 27, 2020

By: /s/ HUANG, CHENG-MING
Name: HUANG, CHENG-MING
Title: Chief Financial Officer

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of GigaMedia Limited (the “Company”) on Form 20-F for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Cheng-Ming Huang, 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), as applicable, 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 27, 2020

By: /s/ HUANG, CHENG-MING
HUANG, CHENG-MING
Chief Executive Officer

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of GigaMedia Limited (the “Company”) on Form 20-F for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Cheng-Ming Huang, 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), as applicable, 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 27, 2020

By: /s/ HUANG, CHENG-MING
HUANG, CHENG-MING
Chief Financial Officer

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement No. 333-148663, 333-142963, 333-119616, 333-160535 and 333-168123 on Form S-8 of our report dated April 24, 2020, relating to the 2019 consolidated financial statements of GigaMedia Limited and subsidiaries, appearing in this Annual Report on Form 20-F of GigaMedia Limited for the year ended December 31, 2019.

/s/ Deloitte & Touche
Taipei, Taiwan
Republic of China

April 27, 2020