

GLU MOBILE INC
Form 10-K
February 28, 2019
Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

Commission file number: 001-33368

Glu Mobile Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization)	91-2143667 (IRS Employer Identification No.)
875 Howard Street, Suite 100 San Francisco, California (Address of Principal Executive Offices)	94103 (Zip Code)

(415) 800-6100

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(Registrant's Telephone Number, Including Area Code)

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

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value \$0.0001 per share	Nasdaq Global Select Market

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

None

(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. 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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the voting stock held by non-affiliates of the registrant as of June 30, 2018, the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing price of such stock on such date as reported by The Nasdaq Global Select Market, was approximately \$713,370,079. Shares of common stock held by each executive officer and director of the registrant and by each person who owns 10% or more of the registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock as of February 15, 2019 was 144,120,408.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for registrant's 2019 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A within 120 days after registrant's fiscal year ended December 31, 2018 are incorporated by reference into Part III of this Annual Report on Form 10-K.

Table of Contents

TABLE OF CONTENTS

	Page	
<u>PART I</u>		
<u>Item 1.</u>	<u>Business</u>	3
<u>Item 1A.</u>	<u>Risk Factors</u>	16
<u>Item 1B.</u>	<u>Unresolved Staff Comments</u>	40
<u>Item 2.</u>	<u>Properties</u>	40
<u>Item 3.</u>	<u>Legal Proceedings</u>	41
<u>Item 4.</u>	<u>Mine Safety Disclosures</u>	41
<u>PART II</u>		
<u>Item 5.</u>	<u>Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	41
<u>Item 6.</u>	<u>Selected Financial Data</u>	42
<u>Item 7.</u>	<u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	44
<u>Item 7A.</u>	<u>Quantitative and Qualitative Disclosures About Market Risk</u>	67
<u>Item 8.</u>	<u>Financial Statements and Supplementary Data</u>	69
<u>Item 9.</u>	<u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	116
<u>Item 9A.</u>	<u>Controls and Procedures</u>	116
<u>Item 9B.</u>	<u>Other Information</u>	117
<u>PART III</u>		
<u>Item 10.</u>	<u>Directors, Executive Officers and Corporate Governance</u>	117
<u>Item 11.</u>	<u>Executive Compensation</u>	117
<u>Item 12.</u>	<u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	117
<u>Item 13.</u>	<u>Certain Relationships and Related Transactions, and Director Independence</u>	118
<u>Item 14.</u>	<u>Principal Accounting Fees and Services</u>	118
<u>PART IV</u>		
<u>Item 15.</u>	<u>Exhibits, Financial Statement Schedules</u>	118
<u>Item 16.</u>	<u>Form 10-K Summary</u>	118
<u>Signatures</u>		123

Table of Contents

Forward-Looking Statements

The information in this Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Such statements are based upon current expectations that involve risks and uncertainties. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. For example, words such as “may,” “will,” “should,” “estimates,” “predicts,” “potential,” “continue,” “strategy,” “believes,” “anticipates,” “plans,” “expects,” “intends” and similar expressions are intended to identify forward-looking statements. Our actual results and the timing of certain events may differ significantly from the results discussed in the forward-looking statements. Factors that might cause or contribute to such differences include, but are not limited to, those discussed elsewhere in this report, particularly in the section titled “Risk Factors,” and the risks discussed in our other Securities and Exchange Commission, or SEC, filings. We undertake no obligation to update the forward-looking statements after the date of this report, except as required by law.

PART I

Item 1. Business

General

Glu Mobile develops, publishes and markets a portfolio of free-to-play mobile games designed to appeal to a broad cross section of users who download and make purchases within our games through direct-to-consumer digital storefronts, such as the Apple App Store, Google Play Store, and others. Free-to-play games are games that a player can download and play for free, but which allow players to access a variety of additional content and features for a fee and to engage with various advertisements and offers that generate revenue for us. We have a portfolio of compelling games based on our own intellectual property such as Cooking Dash, Covet Fashion, Deer Hunter, Design Home and QuizUp, as well as games based on or significantly incorporating third party licensed brands including Kim Kardashian: Hollywood, MLB Tap Sports Baseball and Restaurant Dash with Gordon Ramsay. We are headquartered in San Francisco, California, with another U.S. office in San Mateo, California, and international locations in Toronto, Canada and Hyderabad, India.

We were incorporated in Nevada in May 2001 as Cyent Studios, Inc. and changed our name to Sorrent, Inc. later that year. In November 2001, we incorporated a wholly owned subsidiary in California, and, in December 2001, we merged the Nevada corporation into this California subsidiary to form Sorrent, Inc., a California corporation. In May 2005, we changed our name to Glu Mobile Inc. In March 2007, we completed our initial public offering and our common stock is traded on the Nasdaq Global Select Market under the symbol “GLUU.” Except where the context requires otherwise, in this Annual Report on Form 10-K, references to “Company,” “Glu,” “Glu Mobile,” “we,” “us” and “our”

refer to Glu Mobile Inc., and where appropriate, its subsidiaries.

Available Information

We file annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other reports, and amendments to these reports, required of public companies with the SEC. The public can read and copy the materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549 and can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. We make available free of charge on the Investor Relations section of our corporate website all of the reports we file with the SEC as soon as reasonably practicable after they are filed. Our internet website is located at www.glu.com and our Investor Relations website is located at www.glu.com/investors. The information on our website is not incorporated into this report, unless otherwise expressly stated. Copies of our Annual Report on Form 10-K for the year ended December 31, 2018 may also be obtained, without charge, by contacting Investor Relations, Glu Mobile Inc., 875 Howard Street, Suite 100, San Francisco, California 94103 or by emailing IR@glu.com.

Table of Contents

Strategy and Business Developments

Our Strategy

Our goal is to become the leading developer and publisher of free-to-play mobile games. Our strategy for achieving this goal is comprised of three parts:

- Building Growth Games and Maximizing the Value of Evergreen Games;
- Attracting and Fostering Creative Leaders; and
- Cultivating Highly Creative Environments.

Building Growth Games and Maximizing the Value of Evergreen Games

The first prong of our strategy is to build growth games for smartphones and tablets as well as maximize the value we derive from our evergreen games. Growth games are titles that we continue to update with additional content and features and which grow revenue year over year. We believe a key component of driving revenue growth year over year from a growth game is the inclusion of community features which may involve users competing with each other, forming clubs or groups to cooperate in completing goals or events, or contributing their own original content to the game. *Covet Fashion*, *Design Home* and *MLB Tap Sports Baseball* are our existing growth games. We are focused on building growth games in what we refer to as “blue oceans,” meaning that we seek to identify genres that are not oversaturated with competitive titles and where we believe we can become the leader in that genre. We currently publish titles primarily in four genres: home décor, sports and action, fashion and celebrity, and time management. We believe these are genres in which we have already established a leadership position, are otherwise aligned with our strengths or are conducive to the establishment of a growth game.

Evergreen games are similar to growth games in that we continue to update them with additional content and features, but differ from growth games in that our focus is to reduce and potentially reverse their year over year revenue declines; to the extent that we succeed in our efforts to grow annual revenue from an evergreen game and expect such title’s revenues to continue to grow on an annual basis, we would then consider such evergreen game to be a growth game. For example, we succeeded in growing annual revenues from 2017 to 2018 for *Kim Kardashian: Hollywood*, a title that we first released in June 2014, though we do not expect revenues from this title to continue to grow in 2019. *Cooking Dash*, *Deer Hunter 2018*, *Kim Kardashian: Hollywood* and *Restaurant Dash* with Gordon Ramsay are examples of our existing evergreen games.

While we have generally designed our games to incorporate social features that enhance the user's gameplay experience, as part of our product strategy we are emphasizing adding new social and community-based features, systems, and modes into our growth games. For example, Covet Fashion allows users to join "Fashion Houses" with other users and then borrow each others' clothes, receive advice on their looks, chat and work together to unlock additional rewards in special style challenges, and our Tap Sports Baseball franchise allow players to challenge their friends to head-to-head matchups and to join clubs that compete in daily events against other clubs. We intend to continue to innovate to further enable our titles' ability to function as successful growth or evergreen titles. For example, we plan to introduce a new meta game experience to Design Home during 2019 which is designed to deepen the experience for the game's long-term players.

We have begun to emphasize developing new titles based on original intellectual property. Reflecting this strategy, revenue from games based on our own intellectual property increased from 59.1% of our total revenues in 2017 to 65.7% of our total revenues in 2018. However, we also seek to selectively license and utilize key brands within our titles if we believe this will maximize their consumer appeal and revenue potential. For example, in 2017, we added content from Major League Baseball, or MLB, for the first time in our Tap Sports Baseball franchise, which helped us to meaningfully grow revenue from this franchise year over year. In addition, in 2019 we intend to release WWE Universe, a title featuring WWE Superstars, logos and marks, and Disney Sorcerer's Arena in collaboration with Disney Consumer Products and Interactive Media. We have also worked with our celebrity licensors to engage their social media audiences

Table of Contents

and build games that will resonate with their unique fan bases. In particular, Kim Kardashian: Hollywood utilizes transmedia storytelling, leveraging Ms. Kardashian West's built-in social media fan base to drive installs and awareness of the game, and then attempts to surprise and delight those fans with real-world events and other game content based on her life. Our Restaurant Dash with Gordon Ramsay title utilizes Gordon Ramsay's personality to guide users to become a restaurateur in the image of Mr. Ramsay. We believe that we can continue to drive installs and awareness of our games through our licensing efforts with recognized brands, celebrities and social influencers that resonate with potential players of our games. Partnering with desirable licensing partners and renewing our existing licenses requires that we continue to develop successful games based on licensed content and are able to compete with other mobile gaming companies on financial and other terms in signing such partners. We also plan to continue introducing third-party licensed brands, properties and personalities into our games as additional licensed content, for cameo appearances or for limited time events in order to drive awareness and monetization.

We also plan to continue monitoring the successful aspects of our games to drive downloads and enhance monetization and retention as part of our product strategy, whether by optimizing advertising revenue within each title, including deeper meta game features, building enhanced and more complex core gameplay, adding additional social features, tournaments and events or otherwise.

Attracting and Fostering Creative Leaders

The second prong of our strategy is to attract, cultivate and retain proven creative leaders who will develop and update our growth and evergreen games. Each creative leader is responsible for the long-term planning of his or her titles and to identify and invest in long-term opportunities and concepts that have the potential to become growth games. Our talent model is to attract the industry's finest and provide them with world-class infrastructure, tools, funding and the support to create hit games. We have made, and plan to make, significant investment in our creative leaders.

We have worked with our creative leaders to instill financial discipline and operational excellence in our organization by revamping our prototyping and greenlight processes. Prior to developing a new game, a creative leader works with a small team to rapidly prototype new ideas that have the potential to become growth games. We expect our creative leaders to fail fast and to either continue to iterate on a game concept or to move on to rapidly prototyping a new concept. Once the creative leader and his or her team have sufficiently iterated on their concept and are satisfied that their game has the potential to be a growth game, the creative leader will submit a playable version of the game for greenlighting. If the game is greenlit, we then commit larger investments in terms of headcount and resources.

Cultivating Highly Creative Environments

We believe a key part of building growth games and attracting and cultivating creative leaders is providing them with highly creative environments that are optimal for creating hit games. In December 2017, we moved into our new

headquarters in San Francisco that were designed to foster collaboration among our game teams and focus the company around our core values and creative-led vision. Creative environments that support our creative leaders and other game development personnel are also needed to attract the level of talent that will support our growth and evergreen games. We not only consolidated our studio footprint by moving into our creative center in San Francisco and relocating our Burlingame studio to our San Francisco headquarters, but have also significantly increased our investment in our low-cost, scaled center in Hyderabad, India which provides live operations for some of our evergreen games, insourced art, quality assurance and low cost repeatable sales, marketing and general and administrative functions. As part of this consolidation, in the last several years, we closed or sold development studios in Beijing, China; Bellevue, Washington; Portland, Oregon; San Mateo and Long Beach, California; and Moscow, Russia.

Business Developments

Since January 1, 2018, we have taken the following actions to support our business:

- We continued to focus our efforts on developing and publishing games for smartphones and tablet devices.

Table of Contents

Our significant achievements related to these efforts include the following:

- We generated total revenue of \$366.6 million for the year ended December 31, 2018, a 27.8% increase compared to total revenue of \$286.8 million for the year ended December 31, 2017.
- In December 2018, we had approximately 3.2 million daily active users and 21.1 million monthly active users of our games on our primary distribution platforms, including Apple's App Store and the Google Play Store.
- As of December 31, 2018, we had approximately 1.9 billion cumulative installs of our games on our primary distribution platforms, including approximately 29.0 million installs during the fourth quarter of 2018.

We grew revenues on an annual basis from each of our growth games, as follows:

- Revenues from Design Home increased from \$71.4 million in 2017 to \$145.7 million in 2018;
- Revenues from Covet Fashion increased from \$35.7 million in 2017 to \$49.0 million in 2018; and
- Revenues from our Tap Sports Baseball franchise increased from \$42.1 million in 2017 to \$69.1 million in 2018.
- In February 2018, we announced that we are collaborating with Disney Consumer Products and Interactive Media ("Disney") on the development of an upcoming mobile game that is expected to include characters and stories from across Disney and Pixar franchises.

Across the globe our industry is experiencing a trend where hit titles generally remain higher in the top grossing charts for longer. We believe this is due to the continued specialization and investment of teams and companies in their hit titles, and the live, social nature of certain games. Our strategy and the measures we have implemented to support our business position us to take advantage of these trends. We plan to continue to regularly update and otherwise support our growth and evergreen games in order to ensure that those games monetize and retain users for even longer periods of time. In addition, we plan to continue to invest in our creative leaders and the creative environments in which they and their teams work to increase our likelihood of creating significant hit growth games in 2019 and beyond.

Our Products

We develop and publish a portfolio of mobile games designed to appeal to a broad cross section of the users of smartphones and tablet devices. Our portfolio of growth and evergreen games is spread across the following genres:

- o Home Décor

- o Design Home, which launched in November 2016 and was acquired as part of our acquisition of Crowdstar, has become our most successful growth game. Design Home allows users to participate in daily Design Challenges in which they style three dimensional spaces with real, high-end furniture and décor. We are planning key updates for Design Home in 2019, including the introduction of a deeper meta loop and e-commerce functionality.
- o Sports and Action

- o MLB Tap Sports Baseball 2018, which launched in March 2018, was the fifth installment in our popular Tap Sports Baseball franchise in which we partnered with the MLB, MLBPA and MLBPAA to include real-world baseball stars from each of the MLB's 30 teams. MLB Tap Sports Baseball 2018 was our second largest revenue contributor and the highest ranked baseball title in the Apple App Store's U.S.

Table of Contents

iPhone top grossing games rankings during 2018. We expect to launch MLB Tap Sports Baseball 2019 in March 2019.

- o Deer Hunter 2018, originally launched in September 2015 as Deer Hunter 2016, remained as one of our top action titles during 2018. We released a new Hunting Tournament feature in 2018 along with three major updates to this title in 2016 and 2017, which updates have helped slow the annual revenue declines from this title.
- o We expect to add to our portfolio of sports and action titles through the worldwide release of WWE Universe in 2019 and the next iteration of our Deer Hunter franchise in 2020.
- o Fashion and Celebrity
- o Covet Fashion, which we acquired as part of our acquisition of Crowdstar, is a top grossing fashion title that was our third largest revenue contributor during 2018. Covet Fashion features continually changing content and daily Style Challenges to help drive engagement and monetization of its users. During 2018, we entered into an agreement with Disney which has enabled us to introduce a series of Disney-themed Style Challenges.
- o Kim Kardashian: Hollywood is a narrative role playing game featuring Kim Kardashian-West's likeness, voice and creative influence as she guides players on their journey to success in Hollywood. We globally launched Kim Kardashian: Hollywood in June 2014, and it continues to be one of our top revenue-generating titles on an annual basis. In fact, we grew revenue from this title on an annual basis from \$26.6 million in 2017 to \$34.0 million in 2018.
- o Time Management
- o Cooking Dash, while launched in June 2015, continued to be one of our top revenue-generating titles during 2018. We released a significant update to this title at the end of 2017 and have continued to introduce new cooking venues through regular content updates, which we believe will maintain this title's position as one of our top evergreen games into 2019.
- o Restaurant Dash with Gordon Ramsay, launched in June 2016, utilizes Gordon Ramsay's personality to guide users to become a restaurateur in the image of Mr. Ramsay. We are no longer developing content updates for this title, but have streamlined our live operations in an effort to maximize revenue and reduce costs from this title in 2019.
- o We expect to add to our portfolio of time management titles with the release of Diner DASH Adventures in 2019. Diner DASH Adventures will offer world decoration, a deep story, and an exciting consolidation of different Dash time-management styles.

In addition, our portfolio of evergreen games also includes QuizUp, which is a multiplayer trivia game where users can challenge friends to trivia games and create their own trivia competitions. QuizUp was released in 2013 by Plain Vanilla and acquired by us in December 2016.

Across genres, we view our titles as either growth games or catalog games, and within the catalog group, our titles are either classified as evergreen games or legacy games. Legacy games are those titles that are still published by us and earn revenue, but on which we expend little to no investment in terms of updates and enhancements.

We work to ensure that our games have consistently high production values, are visually appealing and have engaging core gameplay. These characteristics have typically helped to drive installs and awareness of our games and resulted in highly positive consumer reviews.

We have continued to improve monetization in our games, with our most popular games remaining successful for longer periods of time. The longevity of our most successful games derives from strong core gameplay, deep meta

Table of Contents

game features, regular content updates and social and community features, such as the ability to join clans or clubs, tournaments, player-versus-player gameplay and live events.

Our games historically have had “thick clients” due to their high production values and, in some cases, 3-D graphics. A thick client game means that our games have a large file size, often 150 megabytes or more, that resides on the player’s device. Because of the inherent limitations of the digital platforms and telecommunications networks, which, at best, only allow applications that are less than 150 megabytes to be downloaded over a carrier’s wireless network, users often must download one of our games either via a wireless Internet (wifi) connection or initially to their computer and then load the game to their device.

Our Revenue

We generate the majority of our revenue through “in-app-purchases,” with the balance of our revenue primarily generated by offers and in-game advertising. When we incorporate licensed content into our games, we share a portion of our revenue with the licensors featured in these titles.

In-App Purchases

Although users can download and play our games free of charge, they can purchase virtual currency, virtual items, other virtual benefits like time and energy or subscriptions of any of these categories, to enhance their gameplay experience – we refer to these as “in-app purchases” or “micro-transactions.” Some of the benefits that players receive from their in-app purchases include:

- Play Longer Through Better Equipment – We generally design our games to become significantly more challenging as the player advances through the game. For a game like Cooking Dash, players can purchase higher-quality ingredients and various boosts that can help them complete increasingly difficult levels more easily.
- Play Longer Through Energy Replenishment – We design some of our games, such as Deer Hunter 2018 and Kim Kardashian: Hollywood, to have short playing sessions, the duration of which are limited by the energy available for each session. Players of Deer Hunter 2018 and Kim Kardashian: Hollywood can use their virtual currency to purchase items that will replenish their energy and enable them to extend their gameplay session.
- Accelerate Game Progress – Although some players are content to slowly “grind” their way through progressing in a game, others are willing to purchase items to accelerate their progression. For example, our Tap Sports Baseball titles enable players to spend their virtual currency to upgrade their roster of players and boost the effectiveness of such players, thus allowing the player to more quickly assemble a winning team.
- Customization – Our games generally enable players to express themselves by customizing their character, the world the character inhabits or a room. For example, Covet Fashion and Design Home each allow users to customize the look of their avatar or room, respectively, by purchasing clothing or home design elements. While in Covet Fashion users own a clothing or accessory item indefinitely after it is purchased and can use it in multiple events, Design Home limits the player to five uses of any purchased design element.

We sell virtual currency to consumers at various prices ranging from \$0.99 to \$400.00 depending on the available storefront pricing (adjusted for local currencies for sales to players in foreign countries) with the significant majority

of player purchases occurring at the lower price points. The digital storefronts generally share with us 70% of the consumers' payments for in-app purchases; we do not have any special agreement or arrangement with respect to pricing or terms with any of the digital storefronts. Consumers may also acquire virtual currency, other virtual items or virtual benefits through gameplay or by completing offers, as described below.

Offers and In-Game Advertising

In addition to in-app purchases of virtual currency, we also monetize our games through offers and in-game advertising. Optimizing advertising revenue within our games requires us to continue taking advantage of positive trends

8

Table of Contents

in the mobile advertising industry, particularly as brands continue to migrate budgets from web to mobile. Offers enable users to acquire virtual currency without paying cash but by instead taking specified actions, such as downloading another application, watching a short video, subscribing to a service or completing a survey. We work with third parties to provide these offers to players of our games, and we receive a payment from the third party offer provider based on consumer response to these offers. We also work with third party advertising aggregators who embed advertising, such as incented video ads, ads appearing within the game between content transitions and as pop-up ads; the aggregators typically pay us based on the number of impressions, which is the number of times an advertisement is shown to a player, or conversions, which is the number of times players complete an advertiser's desired action. In addition, from time to time we work directly with other application developers to include advertising for their applications in our games, and the developers pay us based on either the number of impressions in our games or the number of users who download the developer's application. We also sometimes include virtual product integrations of goods directly into certain of our titles such as Design Home, Covet Fashion and Kim Kardashian: Hollywood and expect that we may generate increasing advertising revenue from these types of product integrations in the future.

Licensed Content

Following the success of Kim Kardashian: Hollywood and games incorporating licensed third-party brands and properties, like our Tap Sports Baseball franchise, we increased our licensing efforts, both in terms of securing licenses to develop games based upon or significantly featuring celebrities and other third-party intellectual property and for cameo appearances or to otherwise incorporate third-party intellectual property into our games. However, we have more recently begun to emphasize developing new titles based on original intellectual property. In 2018, 2017, and 2016, games based on our own intellectual property accounted for approximately 65.7%, 59.1%, and 39.7% of our revenue, respectively. The increase from 2017 to 2018 was due primarily to the success of Design Home, the Tap Sports Baseball franchise, and Covet Fashion, as well as the continued strength of some of our evergreen games, such as Cooking Dash and our Deer Hunter franchise. The increase from 2016 to 2017 was due primarily to the success of Design Home and Covet Fashion as well as the continued strength of Cooking Dash. We expect to launch three new titles in 2019, MLB Tap Sports Baseball 2019, WWE Universe and Disney Sorcerer's Arena, each of which will include third-party licensed content. We intend to continue to selectively license and utilize key brands within our titles if we believe this will maximize their consumer appeal and revenue potential.

For games based on or significantly incorporating licensed brands, properties or other content, we share a portion of our revenue with the respective licensors. The average royalty rate that we paid on games based on licensed content (such as Kim Kardashian: Hollywood and Restaurant Dash with Gordon Ramsay) or significantly incorporating licensed content (such as MLB Tap Sports Baseball 2018) was approximately 20.2% of gross revenue in 2018, 18.2% in 2017, and 21.9% in 2016. However, the individual royalty rates that we pay can be meaningfully above or below the average based on a variety of factors, such as the strength of the licensed brand, our development and porting obligations, and the platforms on which we are permitted to distribute the licensed content.

Sales, Marketing and Distribution

We market, sell and distribute our games primarily through direct-to-consumer digital storefronts, such as Apple's App Store and the Google Play Store. In addition to publishing our smartphone games on direct-to-consumer digital storefronts, we also publish some of our titles on other platforms, such as the Mac App Store and Facebook. The significant majority of our smartphone revenue has historically been derived from Apple's iOS platform, which accounted for approximately 63.1%, 63.0%, and 62.4% of our total revenue in 2018, 2017, and 2016, respectively. We generated the majority of these iOS-related revenue from the Apple App Store, which represented 54.7%, 54.2%, and 52.7% of our total revenue in 2018, 2017, and 2016, respectively, with the significant majority of such revenue derived from in-app purchases. We generated the balance of our iOS-related revenue from offers and advertisements in games distributed on the Apple App Store and, to a far lesser extent, sales of premium games. In addition, we generated approximately 36.6%, 36.0%, and 36.1% of our total revenue in 2018, 2017, and 2016, respectively, from the Android platform. We generated the majority of our Android-related revenue from in-app purchases and sales of premium games made through the Google Play Store, which represented 31.3%, 30.3%, and 27.6% of our total revenue in 2018, 2017, and 2016, respectively. No other customer or digital storefront accounted for more than 10% of our total revenue in 2018, 2017, and 2016.

Table of Contents

As part of our efforts to successfully market our games on the direct-to-consumer digital storefronts, we attempt to educate the storefront owners about our title roadmap and seek to have our games featured or otherwise prominently placed within the storefront. We believe that the featuring or prominent placement of our games facilitates organic user discovery and is likely to result in our games achieving a greater degree of commercial success. We believe that a number of factors may influence the featuring or placement of a game, including:

- the perceived attractiveness and quality of the title, brand, or licensed intellectual property;
- the level of critical or commercial success of the game or of other games previously introduced by a publisher;
- incorporation of the storefront owner's latest technology in the publisher's title;
- how strong the consumer experience is on all of the devices that discover titles using any given digital storefront;
- the publisher's relationship with the applicable storefront owner and future pipeline of quality titles for it; and
- the current market share of the publisher.

The majority of our games have been featured on the Apple and Google storefronts when they were commercially released, which we believe is in part due to our efforts to be a consistently good partner with Apple and Google. In addition to our efforts to secure prominent featuring or placement for our games, we have also undertaken a number of marketing initiatives designed to acquire players and increase downloads of our games and increase sales of virtual currency, including:

- using social networking websites, such as Facebook and Twitter, to build a base of fans and followers to whom we can quickly and easily provide information about our games;
 - paying third parties, including advertising networks, social media channels and social influencers, to advertise or incentivize consumers to download our games through offers or recommendations;
- using "push" notifications to alert users of sales on virtual currency or items in our games; and
- cross-promoting our games through banner advertisements in our other games, as well as advertising our games in our competitors' games;

In addition, certain of our games featuring celebrities or other licensed content like Kim Kardashian: Hollywood generate significant attention through word of mouth, particularly through social media channels. We look to leverage existing social media presences in order to increase the virality and commercial success of our games. Furthermore, social-based methods for promoting our games include in-game events where players compete with and against each other, in-game social promotions and regular content updates, including in-game content that leverages real world events, such as holiday promotions or current events in the life of our celebrity partners.

We have sought to deepen player engagement by fostering a sense of community in our games. As part of these efforts, we have organized player councils for certain of our games where we have invited some of our most dedicated players to special events to engage with the development teams and share their feedback about our games. For example, we held a CovetCon event in 2018 where 10 VIP players were chosen to participate in a multi-day event focusing on Covet Fashion, and we are planning additional CovetCon events in 2019.

Table of Contents

Development Studios

Our creative leaders have primary responsibility for overseeing game development for our growth and evergreen games. The internal studios that develop our games are located in San Francisco and San Mateo, California; and Toronto, Canada. In addition, as part of our restructuring activities in 2016 and 2017 and the acquisition of QuizUp from Plain Vanilla in December 2016, we moved certain of our catalog games to our Hyderabad, India location to run live operations and produce content updates for these games.

Our studios are generally supported by central services personnel in our San Francisco, California headquarters who provide expertise with respect to areas such as user experience, analytics and marketing, with each studio leveraging these services to varying degrees. In August 2017, we consolidated certain central technology functions, including analytics and software development kit (SDK) development, under our Chief Revenue Officer's organization to better align these departments with Glu's user acquisition and advertising revenue teams.

Our game development process involves a significant amount of creativity, particularly with respect to developing original intellectual property franchises or games in which we license intellectual property from celebrities, Hollywood studios or other owners of brands, properties and other content. Creative and technical studio expertise is necessary to design games that appeal to players who typically play in short sessions and to develop games that work well on mobile phones and tablets with their inherent limitations, such as small screen sizes and control buttons. During 2019, we plan to hire additional game development personnel and invest in technical studio expertise to drive content and features in our growth games and to prototype ideas that we believe can become hit growth games.

Despite our efforts to reduce our geographical footprint and consolidate studios, our development personnel are located in four cities in three different countries, which results in certain inherent complexities. To address these issues, we instituted our Glu University training program. Glu University is designed to increase interaction among our studio teams, including having international studio team members regularly spend time in our U.S. studios. The goal of this program is to ensure that we increase the uniformity, quality and commercial success of our games. In addition, we believe that our strategy of focusing our development efforts on building and maintaining growth and evergreen games will help ensure more efficient use of our talent and resources across our studios and further promote the sharing of expertise and best practices.

Product Development

Since the markets for our products are characterized by rapid technological change, particularly in the technical capabilities of mobile phones and tablets, and changing end-user preferences, continuous investment is required to innovate and publish new games, regularly update our games, and modify existing games for distribution on new platforms.

We have continued to utilize measures designed to ensure that we publish and launch games that have a greater likelihood of being commercially successful, while identifying earlier in the development process game concepts and designs that are unlikely to produce hits. Prior to developing a new game, a creative leader works with a small team to rapidly prototype new ideas that have the potential to become growth games. We expect our creative leaders to fail fast and to either continue to iterate on a game concept or to move on to rapidly prototyping a new concept. Once the

creative leader and his or her team have sufficiently iterated on their concept and are satisfied that their game has the potential to be a hit title, the creative leader will submit a playable version of the game for greenlighting. If the game is greenlit, only at that point will we commit larger investments in terms of headcount and resources.

In addition, we plan to continue holding detailed post-mortems for all products to review and analyze the positive and negative results from each new game launch. These are in addition to our Glu University training sessions where we formally share best practices and learnings amongst the leadership of all functions of our global studios.

We use third-party development tools to create our games, including a game development engine licensed from Unity Technologies to create most of our newest games and our games in development. In addition, we rely on our own servers and third-party infrastructure to operate our games and to maintain and provide our analytics data. In particular, a

Table of Contents

significant portion of game traffic is hosted by Amazon Web Services, which provides us server redundancy by using multiple locations on various distinct power grids, and we expect to continue utilizing Amazon for a significant portion of our hosting services for the foreseeable future.

Furthermore, we have made significant investments in building out a personalization and experimentation engine that seamlessly integrates with our proprietary analytics system, advertisement related activities, and game environment. We believe this new capability will greatly enhance our ability to segment and personalize our players' in-game experience with a focus on further monetizing our highest spending and most engaged players. We aim to connect the data, insights and knowledge gained from our analytics and monetization techniques to every element of our business – from marketing to merchandising – in order to improve player retention and monetization.

Seasonality

Many new smartphones and tablets are released in, or shortly before, the fourth calendar quarter to coincide with the holiday shopping season. Because many players download our games soon after they purchase or receive their new devices, we generally experience seasonal sales increases based on the holiday selling period. Although we believe that the majority of this holiday impact occurs during the fourth quarter, some of this seasonality also occurs for us in our first calendar quarter due to some lag between device purchases and game purchases. However, the impact of this seasonality on our operating results is significantly affected by our title release schedule. For example, we have historically released each year's new version of our Tap Sports Baseball franchise late in the first quarter, which has resulted in revenues from this title peaking in the second or third quarter, with declining revenues in the fourth quarter and the first quarter of the following year leading up to the launch of the next version of the title. In addition, companies' advertising budgets are generally highest during the fourth quarter and decline significantly in the first quarter of the following year, which affects the revenue we derive from advertisements and offers in our games. Conversely, our marketing expenses also increase in the fourth quarter, since demand for marketing is higher during the holiday season and this increased demand drives up marketing costs.

Competition

Developing, distributing and selling mobile games is a highly competitive business, characterized by frequent product introductions and rapidly emerging new platforms, technologies and storefronts. For players, we compete primarily on the basis of game quality, brand and customer reviews. We compete for space on user's smartphones and tablet devices in terms of the number of applications on their device and the amount of storage consumed by such applications. We also compete more generally for the time, attention and discretionary spending of users of smartphones and tablet devices who are spending ever-increasing amounts of time on social media, messaging and music, movie and television streaming applications, personal computer and console games, sports and the Internet. We compete for promotional and digital storefront placement based on our relationship with the digital storefront owner, historical performance, game quality, perception of sales potential, customer reviews and relationships with celebrities and other licensors of brands and other content. For content licensors, we compete based on royalty and other economic terms, historical financial performance of prior licensed content titles, perceptions of development quality, speed of execution, distribution breadth and relationships with storefront owners. We also compete for experienced

and talented employees.

We compete with a continually increasing number of companies, including Activision (the parent company of King Digital Entertainment), DeNA, Disney, Electronic Arts (EA Mobile), Gameloft, Gamevil, GREE, GungHo Online Entertainment, Netease, Netmarble, Nexon, Rovio, Warner Brothers, and Zynga and many well-funded private companies, including DoubleDown, Epic Games, Jam City, Machine Zone, Miniclip, Niantic, Peak Games, Playrix, Pocket Gems, Scopely, Storm 8/Team Lava, and Supercell. We also face competition from online game developers and distributors who are primarily focused on specific international markets. We could also face increased competition if those companies choose to compete more directly in the United States or the other markets that are significant to us or if large companies with significant online presences such as Apple, Google, Amazon, Facebook, Microsoft or Verizon, choose to enter or expand in the games space or develop competing games. In addition, we also face competition from mobile applications and websites focused on the home design market, which may include games, e-commerce titles, design applications and others seeking to displace our Design Home title which is a leading title in the currently unsaturated home design application market. Competitors in this space include, or may include, established game

12

Table of Contents

developers, established real estate companies, interior design companies, e-commerce companies and other well-funded private companies looking to enter the home design market.

In addition, given the open nature of the development and distribution for smartphones and tablets and the relatively low barriers to entry, we also compete or will compete with a vast number of small companies and individuals who are able to create and launch games and other content for these devices using relatively limited resources and with relatively limited start-up time or expertise. As an example of the competition that we face, it has been estimated that more than 3.3 million applications, including more than 800,000 active games, were available on Apple's U.S. App Store as of January 31, 2019. The proliferation of titles in these open developer channels makes it difficult for us to differentiate ourselves from other developers and to compete for players without substantially increasing our marketing expenses and development costs.

We also compete for downloads and time spent on mobile devices with companies that develop popular social media and messaging applications, such as Facebook (with its Facebook, Facebook Messenger, Instagram, WhatsApp and other applications), Pinterest, Reddit, Snapchat, Twitter, Vevo and YouTube, companies that develop streaming music, movie and television applications, such as Pandora, Spotify, Tidal, HBO Go, Netflix, Amazon Prime and Hulu, and with companies that create other non-gaming related software applications, for example for celebrities, such as Kim Kardashian West's own personal media application.

Some of our competitors and our potential competitors have one or more advantages over us, either globally or in particular geographic markets, which include:

- significantly greater financial resources;
- greater experience with free-to-play games, building and maintaining growth or evergreen games, and building social and community features into mobile games, as well as more effective game monetization;
- stronger brand and consumer recognition regionally or worldwide;
- the capacity to leverage their marketing expenditures across a broader portfolio of mobile and non-mobile products;
- larger installed user bases from their existing mobile games;
- larger installed user bases from related platforms, such as console gaming or social networking websites, to which they can market and sell mobile games;
- more substantial intellectual property of their own from which they can develop games without having to pay royalties;
- lower labor and development costs and better overall economies of scale;
- greater platform-specific focus, experience and expertise;
- broader global distribution and presence; and
- greater talent, both in overall headcount and in terms of experience in creating successful titles.

Intellectual Property

Our intellectual property is an essential element of our business. We use a combination of trademark, copyright, trade secret and other intellectual property laws, confidentiality agreements and license agreements to protect our intellectual property. Our employees and independent contractors are required to sign agreements acknowledging that all

Table of Contents

inventions, trade secrets, works of authorship, developments and other processes generated by them on our behalf are our property, and assigning to us any ownership that they may claim in those works. We also vigorously defend our intellectual property. Despite our precautions, it may be possible for third parties to obtain and use without our consent intellectual property that we own or license. Unauthorized use of our intellectual property by third parties, including piracy, and the expenses incurred in protecting our intellectual property rights, may adversely affect our business. In addition, some of our competitors have in the past released games that are nearly identical to successful games released by their competitors in an effort to confuse the market and divert users from the competitor's game to the copycat game. To the extent that these tactics are employed with respect to any of our games, it could reduce our revenue.

Our trademarks that have been registered with the U.S. Patent and Trademark Office include Glu, Crowdstar, our 2-D 'g' character logo, our 3-D 'g' character logo and several of our game titles, including Blood & Glory, Contract Killer, Cooking Dash, Deer Hunter, Diner Dash, Eternity Warriors, Frontline Commando, Gun Bros, QuizUp, and Tap Sports. In addition, we have trademark applications pending with the U.S. Patent and Trademark Office for other of our game titles. For certain titles we do not yet have, and do not intend to seek, trademark registration. We also own, or have applied to own, one or more registered trademarks in certain foreign countries, depending on the relevance of each brand to other markets. Registrations of both U.S. and foreign trademarks are renewable every ten years.

We have eleven patents issued by the U.S. Patent and Trademark Office and have five patent applications pending. In addition, we have one international patent issued through the Patent Cooperation Treaty (PCT), which corresponds to one of our pending U.S. patent applications. We also have patent applications in Canada, China, and Europe that correspond to one of our eleven issued U.S. patents, and we also have patent applications pending in Canada and Europe that correspond to another of our eleven issued U.S. patents.

We also use third-party development tools to create many of our games, including a game development engine licensed from Unity Technologies to create most of our newest games.

From time to time, we encounter disputes over rights and obligations concerning intellectual property. If we do not prevail in these disputes, we may lose some or all of our intellectual property protection, be enjoined from further sales of our games or other applications determined to infringe the rights of others, and/or be forced to pay substantial royalties to a third party, any of which would have a material adverse effect on our business, financial condition and results of operations.

Government Regulation

We are subject to various federal, state and international laws and regulations that affect our business, including those relating to the privacy and security of customer and employee personal information and those relating to the Internet, behavioral tracking, mobile applications, advertising and marketing activities, sweepstakes and contests, and gambling. Additional laws in all of these areas are likely to be passed in the future, which could result in significant limitations on or changes to the ways in which we can collect, use, host, store or transmit the personal information and data of our customers or employees, communicate with our customers, and deliver products and services, or may significantly increase our compliance costs. As our business expands to include new uses or collection of data that are subject to privacy or security regulations, our compliance requirements and costs will increase and we may be subject

to increased regulatory scrutiny.

Financial Information about Segments and Geographic Areas

We manage our operations and allocate resources as a single reportable segment. Financial information about our segment and geographic areas is incorporated into this section by reference to Note 13 of Notes to Consolidated Financial Statements contained in Item 8 of this report. In addition, financial information regarding our operations, assets and liabilities, including our total net revenue and net loss for the years ended December 31, 2018, 2017, and 2016, and our total assets as of December 31, 2018 and 2017, is included in our Consolidated Financial Statements contained in Item 8 of this report.

14

Table of Contents

Employees

As of December 31, 2018, we had 659 employees, of which 425 were based in the United States and Canada, and 234 were based in India. We have not experienced any employment-related work stoppages and consider relations with our employees to be good. We believe that our future success depends in part on our continued ability to hire, assimilate and retain qualified employees.

Executive Officers

The following table shows Glu's executive officers as of February 28, 2019 and their areas of responsibility. Their biographies follow the table.

Name	Age	Position
Niccolo M. de Masi	38	Executive Chairman
Nick Earl	53	President and Chief Executive Officer
Eric R. Ludwig	49	Executive Vice President, Chief Operating Officer and Chief Financial Officer
Chris Akhavan	36	Chief Revenue Officer
Scott J. Leichtner	48	Vice President, General Counsel and Corporate Secretary

Niccolo M. de Masi has served as our Executive Chairman since November 2016, President and Chief Executive Officer from January 2010 to November 2016, as one of our directors since January 2010, as interim Chairman of our board of directors from July 2014 to December 2014 and as the Chairman of our board of directors since December 2014. Mr. de Masi served as the President of Essential, a mobile phone hardware company from November 2016 to October 2018. Prior to joining Glu, Mr. de Masi was the Chief Executive Officer and President of Hands-On Mobile, a mobile technology company and developer and publisher of mobile entertainment, from October 2009 to December 2009, and previously served as the President of Hands-On Mobile from March 2008 to October 2009. Prior to joining Hands-On Mobile, Mr. de Masi was the Chief Executive Officer of Monsternob Group PLC, a mobile entertainment company, from June 2006 to February 2007. Mr. de Masi joined Monsternob in 2004 and, prior to becoming its Chief Executive Officer, held positions as its Managing Director and as its Chief Operating Officer, where he was responsible for formulating and implementing Monsternob's growth and product strategy. Prior to joining Monsternob, Mr. de Masi worked in a variety of corporate finance and operational roles within the technology, media and telecommunications (TMT) sector, beginning his career with JP Morgan on both the TMT debt capital markets and mergers and acquisitions teams in London. He has also worked as a physicist with Siemens Solar and within the Strategic Planning and Development divisions of Technicolor. Mr. de Masi has served as a director of Resideo since October 2018 and of Xura, Inc. from November 2015 to August 2016. Mr. de Masi holds an M.A. degree in Physics and an MSci. degree in Electronic Engineering—both from Cambridge University.

Nick Earl has served as our President and Chief Executive officer since November 2016 and prior to that was our President of Global Studios from November 2015 to November 2016. Before joining us, from November 2014 to

September 2015, Mr. Earl served as President of Worldwide Studios at Kabam. From September 2001 to October 2014, Mr. Earl served in several management positions at Electronic Arts, including most recently as Senior Vice President & General Manager of EA Mobile. From 1999 to 2001, Mr. Earl served as VP Product Development at Eidos. From April 1993 to March 1999, Mr. Earl served as an executive producer / GM at The 3DO Company. Mr. Earl holds a B.A. in Economics from the University of California at Berkeley.

Eric R. Ludwig has served as our Chief Operating Officer since October 2014, as our Executive Vice President since October 2011, and as our Chief Financial Officer since August 2008. Mr. Ludwig previously held the position of Senior Vice President, Chief Financial Officer and Chief Administrative Officer from September 2010 to October 2011. Prior to becoming our Chief Financial Officer, Mr. Ludwig served as our Vice President, Finance, Interim Chief Financial Officer from May 2008 to August 2008, served as our Vice President, Finance from April 2005 to May 2008 and served as our Director of Finance from January 2005 to April 2005. In addition, Mr. Ludwig has served as our Assistant Secretary since July 2006. Prior to joining us, from January 1996 to January 2005, Mr. Ludwig held various positions at Instill Corporation, a software as a service company, most recently as Chief Financial Officer, Vice President, Finance and Corporate Secretary. Prior to Instill, Mr. Ludwig was Corporate Controller at Camstar Systems, Inc., an enterprise

Table of Contents

manufacturing execution and quality systems software company, from May 1994 to January 1996. He also worked at Price Waterhouse L.L.P. from May 1989 to May 1994. Mr. Ludwig holds a B.S. in Commerce from Santa Clara University and is a Certified Public Accountant (inactive).

Chris Akhavan has served as our Chief Revenue Officer since May 2016. Prior to this, Mr. Akhavan served as our President of Publishing from April 2013 to May 2016. Before joining us, from January 2010 to April 2013, Mr. Akhavan served in several management positions at Tapjoy, Inc., a provider of mobile advertising, most recently as Senior Vice President, Partnerships. From April 2009 to January 2010, Mr. Akhavan was a Manager, Publisher Network at RockYou!, a social gaming company, and from October 2007 to November 2008, he served as a Strategic Partner Manager at VideoEgg (now SAY Media), an advertising inventory and platform provider. Mr. Akhavan holds a B.A. in Economics from the University of California at Santa Cruz.

Scott J. Leichtner has served as our Vice President, General Counsel and Corporate Secretary since September 2010. Mr. Leichtner joined Glu in June 2009 as our Senior Corporate Counsel. Prior to joining us, Mr. Leichtner was a corporate attorney at Fenwick & West LLP, a law firm focused on serving technology clients, from October 1997 to May 2009. Mr. Leichtner holds an A.B. in Political Science from Duke University and a J.D. from the University of Michigan.

Item 1A. Risk Factors

Our business is subject to many risks and uncertainties, which may affect our future financial performance. If any of the events or circumstances described below occurs, our business and financial performance could be harmed, our actual results could differ materially from our expectations and the market value of our stock could decline. The risks and uncertainties discussed below are not the only ones we face. There may be additional risks and uncertainties not currently known to us or that we currently do not believe are material that may harm our business and financial performance. Because of the risks and uncertainties discussed below, as well as other variables affecting our operating results, past financial performance should not be considered as a reliable indicator of future performance and investors should not use historical trends to anticipate results or trends in future periods.

If we fail to develop and timely publish new high-quality, engaging games and continue to enhance our existing games, particularly our most successful games, our revenue would suffer.

Our business depends on developing and publishing mobile games that consumers will download and spend time and money playing. We must continue to invest significant resources in research and development, technology, analytics and marketing to introduce new games and continue to update our successful growth and evergreen games, and we often must make decisions about these matters well in advance of a product's release to timely implement them. Our success depends, in part, on unpredictable and volatile factors beyond our control, including consumer preferences and the number of applications they are willing to download to and maintain on their devices, competing gaming and non-gaming related applications, new mobile platforms and the availability of other entertainment activities. If our games do not meet consumer expectations, or they are not brought to market in a timely and effective manner, our business, operating results and financial condition would be harmed. It can be difficult for us to predict with certainty

when we will launch a new game as games may require longer development schedules or beta testing periods to meet our quality standards and our players' expectations. For example, we experienced delays in the development and commercial release of The Swift Life, and, following global launch, the title did not generate significant revenue. We also decided to delay the worldwide launch dates of WWE Universe and Diner DASH Adventures in order to give the development teams additional time to work on these titles so that they can meet our expectations for a potential growth game. The worldwide launch of these titles might get delayed further than we anticipate, or they may not be successful when and if launched, which would likely harm our business, operating results and financial condition.

Even if our games are successfully introduced in a timely fashion and initially adopted, a failure to continually update them with compelling content or a subsequent shift in the entertainment preferences of consumers could cause a decline in our games' popularity that could materially reduce our revenue and harm our business, operating results and financial condition, which effect would be magnified for our most successful games and, in particular, Design Home. In connection with our product strategy, we have committed significant resources to updating, adding new features to and enhancing our existing titles as opposed to launching as many new titles as we have in prior years. However, we may not

Table of Contents

be successful in doing so, such as was the case with our update of Covet Fashion in the first quarter of 2017 or as may be the case with our plan to add new features to Design Home, including a deep meta game and e-commerce functionality. It is difficult to predict when and how quickly the popularity and revenue of one of our games will decline, and if any of our key growth games experience any such unexpected declines, we may not meet our expectations or the expectations of securities analysts or investors for a given quarter. In addition, our Kim Kardashian: Hollywood game benefitted significantly from awareness of the game through media coverage and social media channels, and such viral success can be difficult to predict or to repeat in the future. Furthermore, we compete for the discretionary spending of consumers, who face a vast array of entertainment choices, including social media and other non-gaming related apps, games played on personal computers and consoles, television, movies, sports and the Internet. If we are unable to sustain sufficient interest in our games compared to other forms of entertainment, our business and financial results would be seriously harmed.

In addition to the market factors noted above, our ability to successfully develop and launch games for mobile devices and their ability to achieve and maintain commercial success will depend on our ability to:

- minimize launch delays and cost overruns on the development of new games and features;
- successfully enhance and increase the revenue we generate from our existing growth games;
- effectively market and monetize our games;
- achieve a positive return on investment from our marketing and user acquisition efforts;
 - sustain sufficient interest in our games compared to other forms of entertainment for our players
- adapt to new technologies and feature sets for mobile and other devices;
- attract and retain experienced and talented employees
- compete successfully against a large growing number of existing market participants;
- minimize and quickly resolve bugs and outages; and
- acquire and successfully integrate high quality mobile game assets, personnel or companies

These and other uncertainties make it difficult to know whether we will succeed in continuing to develop, launch and enhance successful mobile games in accordance with our operating plan. If we do not succeed in doing so, our business, financial condition, results of operations and reputation will suffer.

Successfully developing and monetizing free-to-play games is a challenging business model.

We face significant challenges in achieving our goal of become the leading developer and publisher of free-to-play mobile games. The most successful free-to-play games tend to include socio-competitive gameplay, deep meta game features, player versus player activities, regularly updated content and other complex technological and creative attributes. While we are working to include such features in our games, we may not successfully update our games to include these features or they may not be well received by our players. For example, the significant update to Racing Rivals that we released in the fourth quarter of 2016 was poorly received by players, led to a significant decline in revenue and ultimately contributed to our decision to sunset this title. If we are unable to successfully implement our product strategy, or if we incur excessive expenses in this effort, our financial performance and ability to grow revenue would be negatively affected. Additionally, our existing games compete with our new offerings and the offerings of our competitors, and revenue from our existing catalog games have declined over time, a trend that we expect to continue.

Table of Contents

Our efforts to develop new growth games and enhance our existing growth games may prove unsuccessful or, even if successful, it may take more time than we anticipate to achieve significant revenue because, among other reasons:

- our strategy assumes that a large number of players will download our games because they are free and that we will then be able to effectively monetize the games; however, players may not widely download our games for a variety of reasons, including
- competition for downloads not only with other mobile games but also with social media and other non-gaming related applications;
- limits on the number of mobile applications players are willing to download to and maintain on their devices;
- poor consumer reviews or other negative publicity;
- ineffective or insufficient marketing efforts;
- lack of sufficient social and community features;
 - lack of prominent storefront featuring;
- failure to reach and maintain Top Free App Store rankings;
- the relatively large file size of some of our games, which has been exacerbated due to Apple's requirement that games released on the Apple App Store include 64-bit support; in particular, our games often utilize a significant amount of the available memory on a user's device and tend to consume additional space as players advance through our games, which may cause players to delete our games once the file size grows beyond the capacity of their devices' storage limitations; and
- the inherent limitations of the smartphone platforms and telecommunications networks, which at most only allow applications that are less than 150 megabytes to be downloaded over a carrier's wireless network; as a result, players must download our games that exceed 150 megabytes either via a wireless Internet (wifi) connection or initially to their computer and then side-load them to their device;
- even if our games are widely downloaded, we may fail to retain users or optimize the monetization of these games, such as occurred with our Kendall & Kylie title after its initial global launch in January 2016; this may occur for a variety of reasons, including poor game design or quality, lack of social and community features, gameplay issues such as game unavailability, long load times or an unexpected termination of the game due to data server or other technical issues, lack of differentiation from predecessor games or other competitive games, lack of innovative features that surprise and delight our players, differences in user demographics and purchasing power or our failure to effectively respond and adapt to changing user preferences through game updates;
- future games that we release may fail to resonate with consumers and games that incorporate licensed property may not be financially successful due to the minimum guaranteed royalty payments to our licensors;
- we intend to continue to develop games based upon our own intellectual property, in addition to well-known licensed brands and properties, and we may encounter difficulties in generating sufficient consumer interest in and downloads of our original intellectual property games;
- many well-funded public and private companies have released, or plan to release, games in the same genres as our growth games or games incorporating the same licensed brands that we intend to use in our games

Table of Contents

(e.g., WWE and Disney Sorcerer's Arena), and this competition will make it more difficult for us to differentiate our games and derive significant revenue from them;

- we may have difficulty hiring the experienced monetization, live operations, server technology, user experience and product management personnel that we require to develop our new games and support our existing growth games, or may face difficulties in developing our technology platform and incorporating it into our products or developing unique gameplay;
- we depend on the proper and continued functioning of our own servers and third-party infrastructure to operate our connected games that are delivered as a service; and
- the impact of potential regulatory issues, including:
 - the Federal Trade Commission, or the FTC, has previously indicated that it intends to review issues related to in-app purchases, particularly with respect to games that are marketed primarily to minors (for example, the FTC reached a settlement with Apple in January 2014 and with Google in September 2014 on this issue, and in April 2016, a federal court granted summary judgment in favor of the FTC finding Amazon liable for unfairly billing consumers for unauthorized in-app purchases by minors), and the FTC might issue rules significantly restricting or even prohibiting in-app purchases or name us as a defendant in a future class-action lawsuit;
 - various jurisdictions are assessing the legality of "loot boxes," which are commonly used in some of our top games, and Apple has recently updated its terms of service to require publishers to publish the odds of winning the items contained in loot boxes, which could harm the monetization of our games that utilize loot boxes; and
 - various legislators, administrative bodies and courts, primarily in Europe, have taken actions (including imposing fines) or may be considering taking actions (including antitrust enforcement) against Apple and Google, which are our primary distribution platforms, and Facebook, which is our primary user acquisition channel.

If we do not achieve a sufficient return on our investment with respect to our free-to-play business model, it will negatively affect our operating results and may require us to formulate a new business strategy.

The markets in which we operate are highly competitive, many of our competitors have significantly greater resources than we do and our players may prefer our competitors' products or competing forms of entertainment.

Developing, distributing and selling mobile games is a highly competitive business, characterized by frequent product introductions and rapidly emerging new platforms, technologies and storefronts. For players, we compete primarily on the basis of game quality, brand and customer reviews. We compete for space on user's smartphones and tablet devices in terms of the number of applications on their device and the amount of storage consumed by such applications. We also compete more generally for the time, attention and discretionary spending of users of smartphones and tablet devices who are spending ever-increasing amounts of time on social media, messaging and music, movie and television streaming applications, personal computer and console games, sports and the Internet. We compete for promotional and digital storefront placement based on our relationship with the digital storefront owner, historical performance, game quality, perception of sales potential, customer reviews and relationships with celebrities and other licensors of brands and other content. For content licensors, we compete based on royalty and other economic terms, historical financial performance of prior licensed content titles, perceptions of development quality, speed of execution, distribution breadth and relationships with storefront owners. We also compete for experienced and talented employees.

We compete with a continually increasing number of companies, including Activision (the parent company of King Digital Entertainment), DeNA, Disney, Electronic Arts (EA Mobile), Gameloft, Gamevil, GREE, GungHo Online Entertainment, Netease, Netmarble, Nexon, Nintendo, Rovio, Warner Brothers, and Zynga and many well-funded private companies, including DoubleDown, Epic Games, Jam City, Machine Zone, Miniclip, Niantic, Peak Games, Playrix,

Table of Contents

Pocket Gems, Scopely, Storm 8/Team Lava, and Supercell. We also face competition from online game developers and distributors who are primarily focused on specific international markets. We could also face increased competition if those companies choose to compete more directly in the United States or the other markets that are significant to us or if large companies with significant online presences such as Apple, Google, Amazon, Facebook, Microsoft or Verizon, choose to enter or expand in the games space or develop competing games. In addition, we also face competition from mobile applications and websites focused on the home design market, which may include games, e-commerce titles, design applications and others seeking to displace our Design Home title which is a leading title in the currently unsaturated home design application market. Competitors in this space include, or may include, established game developers, established real estate companies, interior design companies, e-commerce companies and other well-funded private companies looking to enter the home design market. Given the open nature of the development and distribution for smartphones and tablets and the relatively low barriers to entry, we also compete or will compete with a vast number of small companies and individuals who are able to create and launch games and other content for these devices using relatively limited resources and with relatively limited start-up time or expertise. As an example of the competition that we face, it has been estimated that more than 3.3 million applications, including more than 800,000 active games, were available on Apple's U.S. App Store as of January 31, 2019. The proliferation of titles in these open developer channels makes it difficult for us to differentiate ourselves from other developers and to compete for players without substantially increasing our marketing expenses and development costs.

We also compete for downloads and time spent on mobile devices with companies that develop popular social media and messaging applications, such as Facebook (with its Facebook, Facebook Messenger, Instagram, WhatsApp and other applications), Pinterest, Reddit, Snapchat, Twitter, Vevo and YouTube, companies that develop streaming music, movie and television applications, such as Pandora, Spotify, Tidal, HBO Go, Netflix, Amazon Prime and Hulu, and with companies that create other non-gaming related software applications, for example for celebrities, such as Kim Kardashian West's own personal media application.

Some of our competitors and our potential competitors have one or more advantages over us, either globally or in particular geographic markets, which include:

- significantly greater financial resources;
- greater experience with free-to-play games, building and maintaining growth or evergreen games, and building social and community features into mobile games, as well as more effective game monetization;
- stronger brand and consumer recognition regionally or worldwide;
- the capacity to leverage their marketing expenditures across a broader portfolio of mobile and non-mobile products;
- larger installed user bases from their existing mobile games;
- larger installed user bases from related platforms, such as console gaming or social networking websites, to which they can market and sell mobile games;
- more substantial intellectual property of their own from which they can develop games without having to pay royalties;
- lower labor and development costs and better overall economies of scale;
- greater platform-specific focus, experience and expertise;
- broader global distribution and presence; and
- greater talent, both in overall headcount and in terms of experience in creating successful titles.

Table of Contents

If we are unable to compete effectively or we are not as successful as our competitors in our target markets, our sales could decline, our margins could decline and we could lose market share, any of which would materially harm our business, operating results and financial condition.

We rely on a very small portion of our total players for nearly all of our revenue that we derive from in-app purchases.

We rely on a very small portion of our total players for nearly all of our revenue derived from in-app purchases (as opposed to advertisements and incentivized offers) and installation rates and user-growth have declined for us with many of our most recent product launches. The percentage of unique paying players for our largest revenue-generating free-to-play games has typically been less than 5%, when measured as the number of unique paying users on a given day divided by the number of unique users on that day, though this percentage fluctuates, and it may be higher than 5% for some of our games during specific, relatively short time periods, such as immediately following worldwide launch, during special events or following content updates or marketing campaigns. To significantly increase our revenue, we must increase the number of downloads of our games, increase the number of players who convert into paying players by making in-app purchases or enrolling in subscriptions, increase the amount that our paying players spend in our games and/or increase the length of time our players generally play our games. We might not succeed in our efforts to increase the monetization rates of our users, particularly if we do not increase the amount of social features in our games or otherwise improve our games through updates and live operations. If we are unable to convert non-paying players into paying players, or if we are unable to retain our paying players or if the average amount of revenue that we generate from our players does not increase or declines, our business may not grow, our financial results will suffer, and our stock price may decline.

We have depended on a small number of growth games for a significant portion of our revenue in recent fiscal periods. If these games do not continue to grow or we do not release highly successful new games, our revenue would decline.

In the mobile gaming industry, new games are frequently introduced, but a relatively small number of games account for a significant portion of industry sales. Similarly, a significant portion of our revenue comes from a limited number of games, although the games in that group have shifted over time. Our top three titles for 2018, Design Home, the Tap Sports Baseball franchise, and Covet Fashion, each accounted for greater than 10% of our revenue in 2018 and collectively generated approximately 72.0% of our revenue during the period, compared to 52.0% in 2017; no other game generated more than 10% of our revenue during these respective periods. We expect our dependency on a small number of games for a majority of our revenue will continue for the foreseeable future. In particular, our growth game Design Home has accounted for a successively larger percentage of our revenues since its launch which has increased our reliance on the success of this title. We intend to globally launch WWE Universe, Diner DASH Adventures and Disney Sorcerer's Arena in 2019, and if one or more of these titles is unsuccessful, it could result in an overall decline in our revenues and cause us to continue to rely primarily on our existing growth games for a significant majority of revenues during 2019.

We derive the majority of our revenue from Apple's App Store and the Google Play Store, and if we are unable to maintain a good relationship with each of Apple and Google or if either of these storefronts were unavailable for any prolonged period of time, our business will suffer.

The majority of our smartphone revenue has historically been derived from Apple's iOS platform, which accounted for 63.1% of our total revenue for 2018 compared with 63.0% and 62.4% of our total revenue for 2017 and 2016,

respectively. We generated the majority of this iOS-related revenue from the Apple App Store, which represented 54.7%, 54.2% and 52.7% of our total revenue for 2018, 2017 and 2016, respectively, with the significant majority of such revenue derived from in-app purchases. We generated the balance of our iOS-related revenue from offers and advertisements in games distributed on the Apple App Store. In addition, we derived approximately 36.6%, 36.0% and 36.1% of our total revenue for 2018, 2017 and 2016, respectively, from the Android platform. We generated the majority of our Android-related revenue from the Google Play Store, which represented 31.3%, 30.3% and 27.6% of our total revenue for 2018, 2017 and 2016, respectively, with the significant majority of such revenue derived from in-app purchases. We believe that we have good relationships with each of Apple and Google, which have contributed to the majority of our games released in the last several years being featured on their respective storefronts upon worldwide commercial release. If we do not continue to receive prominent featuring, users may find it more difficult to discover our

Table of Contents

games and we may not generate significant revenue from them. We may also be required to spend significantly more on marketing campaigns to generate substantial revenue on these platforms. Additionally, our efforts to advertise through search advertisements in the Apple App Store may not be successful and may not result in additional users or monetization. In addition, currently neither Apple nor Google charge a publisher when it features one of their apps. If either Apple or Google were to charge publishers to feature an app, it could cause our marketing expenses to increase considerably. Accordingly, any change or deterioration in our relationship with Apple or Google could materially harm our business and likely cause our stock price to decline.

We also rely on the continued functioning of the Apple App Store and the Google Play Store. In the past these digital storefronts have been unavailable for short periods of time or experienced issues with their in-app purchasing functionality. If such events recur on a prolonged basis or other similar issues arise that impact our ability to generate revenue from these storefronts, it would have a material adverse effect on our revenue and operating results. In addition, if the storefront operators fail to provide high levels of service, our players' ability to access our games may be interrupted or players may not receive the virtual currency or goods for which they have paid, which may adversely affect our brand, revenue and operating results.

The operators of digital storefronts on which we publish our free-to-play games and the advertising channels through which we acquire some of our players in many cases have the unilateral ability to change and interpret the terms of our and others' contracts with them.

We distribute our free-to-play games through direct-to-consumer digital storefronts, for which the distribution terms and conditions are often "click through" agreements that we are not able to negotiate with the storefront operator. For example, we are subject to each of Apple's and Google's standard click-through terms and conditions for application developers, which govern the promotion, distribution and operation of apps, including our games, on their storefronts. Each of Apple and Google can unilaterally change its standard terms and conditions, including platform commission fees, with no prior notice to us. In addition, the agreement terms can be vague and subject to changing interpretations by the storefront operator. Further, these storefront operators typically have the right to prohibit a developer from distributing its applications on its storefront if the developer violates its standard terms and conditions. For example, in the fourth quarter of 2017, Apple updated its terms of service to require publishers to disclose a player's odds of winning the various items contained within loot boxes. Glu utilizes loot boxes in many of its current games and the games it intends to release in the future, and it is possible that this new disclosure requirement will negatively impact the monetization of these titles. Furthermore, in January 2018, Apple enforced new guidelines relating to offerwalls which negatively impacted our revenues from offers in Design Home. If Apple or Google, or any other key storefront operator, determines that we or one of our key vendors are violating its standard terms and conditions, by a new interpretation or otherwise, or prohibits us from distributing our games on its storefront, it would materially harm our business and likely cause our stock price to significantly decline.

Furthermore, any changes to the advertising channels through which we acquire some of our players, including any changes by Facebook of its advertising platform, which we rely on for a majority of our user acquisition activities, could negatively impact our revenue or otherwise materially harm our business, and we may not receive significant or any advance warning of such changes.

We have a history of net losses, may incur substantial net losses in the future and may not achieve and sustain profitability or growth in future periods.

We have incurred significant losses since inception, including a net loss of \$13.2 million in 2018 and a net loss of \$97.6 million in 2017. As of December 31, 2018, we had an accumulated deficit of \$440.5 million. While we conducted several restructurings and divested our Moscow game development studio during 2017, which measures were aimed at reducing our fixed costs and operating more efficiently, our costs may continue to rise as we implement

additional initiatives designed to increase revenue, potentially including: investing more heavily in our existing titles as part of our product strategy; increasing our spending on user acquisition efforts, particularly for our growth games; hiring additional staff in our San Francisco Bay Area and Hyderabad, India locations; developing new games with greater complexity, higher production values and deeper social features; running live operations on our games; and taking other steps to strengthen our company. We anticipate that the costs of acquiring new players and otherwise marketing our new

Table of Contents

titles will continue to rise, particularly since advertising costs in our industry have generally been rising and we have encountered increasing difficulties in generating downloads of our games as users spend more time on alternative software applications, such as social media, messaging, and streaming applications. We may also continue to incur significant costs to acquire rights to third party intellectual property, including incurring significant minimum guaranteed royalty payments. If our revenue does not increase at a rate sufficient to offset these additional expenses, if the launch dates for our games are delayed, if we do not realize a sufficient return on our user acquisition spending for our growth games, if we experience unexpected significant increases in operating expenses or if we are required to take additional charges related to impairments or restructurings, we will continue to incur losses. For example, during the fiscal years ended December 31, 2018 and 2017, we recorded impairments of \$0.7 million and \$27.3 million, respectively, related to certain contractual minimum guarantee payments made to certain of our celebrity licensors and other prepaid royalties. Additionally, we have taken restructuring charges in the past, including \$6.0 million during 2017 related to headcount reductions and other restructuring activities and a \$2.7 million charge relating to impairment of acquired in process research and development during the third quarter of 2018. Furthermore, given the significant amount of time and attention users are dedicating to social media and other non-gaming applications, increasing revenue has been, and may continue to be, challenging. This industry trend has been negatively impacting us, as the number of downloads of sequels to certain of our most successful franchises, including the launch of Deer Hunter 2016 (which we have rebranded Deer Hunter 2018), have downloaded at significantly lower rates as compared to previous new titles, which could negatively impact the success of the next iteration of our Deer Hunter franchise which we expect to launch in 2020.

Our financial results could vary significantly from quarter to quarter and are difficult to predict, which in turn could cause volatility in our stock price.

Our revenue and operating results could vary significantly from quarter to quarter due to a variety of factors, many of which are outside of our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful. In addition, we may not be able to accurately predict our future revenue or results of operations. We base our current and future expense levels on our internal operating plans and sales forecasts, and our operating costs are to a large extent fixed. As a result, we may not be able to reduce our costs sufficiently to compensate for an unexpected shortfall in revenue, and even a small shortfall in revenue could disproportionately and adversely affect financial results for that quarter.

In addition to other factors discussed in this section, factors that may contribute to the variability of our quarterly results and the volatility in our stock price include:

- our ability to increase the number of our paying players and the amount that each paying player spends in our games;
- the popularity and monetization rates of our new games released during the quarter and the ability of games released in prior periods to sustain their popularity and monetization rates;
- the number and timing of new games released by us and our competitors, which timing can be impacted by internal development delays, longer than anticipated beta testing periods, shifts in product strategy and how quickly digital storefront operators review and approve our games for commercial release;
- changes in the prominence of storefront featuring for our games and those of our competitors;
- the loss of, or changes to, one of our distribution platforms;
- changes to the Apple iOS platform or the Google Android platform to which we are not able to adapt our game offerings;
- fluctuations in the size and rate of growth of overall consumer demand for smartphones, tablets, games and related content;

Table of Contents

- the amount and timing of charges related to any future impairments of goodwill, intangible assets, prepaid royalties and guarantees; for example, in 2018 and 2017, we impaired \$0.7 million and \$27.3 million, respectively, related to contractual minimum guarantee royalty payments made to certain celebrity licensors and other prepaid royalties, and in future periods we may be required to impair our goodwill due to further declines in our business and/or stock price, or take additional large impairments related to contractual minimum guarantee commitments if the associated games we are developing are not successful;
- changes in the mix of revenue derived from games based on original intellectual property versus licensed intellectual property;
- changes in the mix of revenue derived from in-app purchases, advertisements and offers, which mix often depends on the nature of new titles launched during the quarter;
- changes in the amount of money we spend marketing our titles in a particular quarter, including the average amount we pay to acquire each new user, as well as changes in the timing of these marketing expenses within the quarter;
- decisions by us to incur additional expenses, such as increases in research and development, restructuring expenses, or unanticipated increases in vendor-related costs, such as hosting fees;
- the timing of successful mobile device launches;
- the seasonality of our industry;
- changes in accounting rules, such as those governing recognition of revenue, including the period of time over which we recognize revenue for in-app purchases of virtual currency and goods within some of our games, as well as estimates of average playing periods and player life;
- the activities, announcements and performance of our commercial partners: and
- macro-economic fluctuations in the United States and global economies, including those that impact discretionary consumer spending.

We may not, or may be unable to, renew our existing content licenses when they expire and may not choose to obtain additional licenses or be able to obtain new licenses on favorable terms, which could negatively impact our revenue if we fail to replace such revenue with revenue from games based on our own intellectual property.

In 2018, we generated 34.3% of our revenue from games that are based on or substantially incorporate third-party intellectual property, such as the Tap Sports Baseball franchise, Kim Kardashian: Hollywood, and Restaurant Dash with Gordon Ramsay. We expect to continue to derive significant revenue from these titles in 2019, particularly the Tap Sports Baseball franchise, and expect to continue to develop new titles featuring third-party intellectual property, such as WWE Universe and Disney Sorcerer's Arena. Certain of our licenses expire at various times during the next several years, and we may be unable to renew these licenses on terms favorable to us or at all, and we may have difficulties obtaining licenses from new content owners on terms acceptable to us, if at all. In addition, these licensors could decide to license to our competitors or develop and publish their own mobile games, competing with us in the marketplace. We also license certain brands and their assets for our Covet Fashion and Design Home titles without the provision of a license fee or royalty. These licensors could decide to no longer license their assets under the current terms, and to instead charge a one-time payment, ongoing royalty or both, which may adversely affect the profitability of these titles. Failure to maintain or renew our existing licenses or to obtain additional licenses would prevent us from continuing to offer our current licensed games and introducing new mobile games based on such licensed content, which could harm our business, operating results and financial condition.

Table of Contents

Securing license agreements to develop, publish and market games based on or significantly incorporating celebrities, third-party licensed brands, properties, and other content typically requires that we make minimum guaranteed royalty and other payments to such licensors, and to the extent such payments become impaired, our operating results would be harmed.

In connection with partnerships with celebrities and other licensors of third-party brands, properties and content, we have incurred and may continue to incur significant minimum guaranteed royalty and other payments. As a result, we may incur impairments on such payments if our forecasts for these games are lower than we anticipated at the time we entered into the agreements. For example, in 2018 and 2017, we impaired \$0.7 million and \$27.3 million, respectively, related to contractual minimum guaranteed royalty payments made to certain of our celebrity licensors and other prepaid royalties; as of December 31, 2018 we had remaining prepaid royalty balances totaling \$10.2 million. We expect to continue to selectively license third-party licensed brands, properties and other content and to pay minimum guaranteed royalty payments in connection with such deals. As a result, we may be required to take impairments in future periods if the games we are developing that have significant contractual minimum guarantee commitments associated with them are not successful.

If we do not successfully establish and maintain awareness of our brand and games, if we fail to develop high-quality, engaging games that are differentiated from our prior games, if we incur excessive expenses maintaining and promoting our brand or our games or if our games contain defects or objectionable content, our operating results and financial condition could be harmed.

We believe that establishing and maintaining our brand is critical to establishing, developing and maintaining favorable relationships with players, distributors, content licensors, platform providers, advertisers and key talent. Increasing awareness of our brand and recognition of our games is particularly important in connection with our strategic focus of developing games based on our own intellectual property. Our ability to promote the Glu brand and increase recognition of our games depends on our ability to develop high-quality, engaging games, including integrating the level of social and community features appropriate for a game's target audience and partnering with brands with fan bases that can support successful mobile games. If consumers, digital storefront owners and branded content owners do not perceive our existing games as high-quality or if we introduce new games that are not favorably received by them, then we may not succeed in building brand recognition and brand loyalty in the marketplace. In addition, globalizing and extending our brand and recognition of our games is costly and involves extensive management time to execute successfully. Although we make significant sales and marketing expenditures in connection with the launch of our games, these efforts may not succeed in increasing awareness of our brand or the new games. If we fail to maintain and increase brand awareness and consumer recognition of our games, our potential revenue could be limited, our costs could increase and our business, operating results and financial condition could suffer.

In addition, if a game contains objectionable content, we could experience damage to our reputation and brand. Our games may contain violence or other content that some consumers may find objectionable. For example, many of our shooter games have a 17-and-older rating due to its violence. In addition, Google required us to submit two versions of our Blood & Glory and Contract Killer: Zombies games, one of which did not depict blood. Despite these ratings and precautions, consumers may be offended by some of our game content and children to whom these games are not targeted may choose to play them without parental permission nonetheless. In addition, our employees or employees of outside developers could include hidden features in our games without our knowledge, which might contain profanity, graphic violence, sexually explicit or otherwise objectionable material. Users of our games, particularly games with social messaging features, may utilize these features for illegal purposes or target certain users through these features. If consumers believe that a game we published contains objectionable content or may expose them to nefarious individuals, it could harm our brand, consumers could refuse to download it or demand a refund for any in-app purchases and could pressure the digital storefront operators to no longer allow us to publish the game on their

platforms. Similarly, if any of our games are introduced with defects, vulnerabilities or have playability issues, we may receive negative user reviews, our brand may be damaged and our operating results and revenue negatively affected. For example, our Racing Rivals title experienced playability and user interface issues after the release of an update in the fourth quarter of 2016 that introduced new graphics, which particularly affected users of some Android devices and harmed monetization of the game, and our attempt to relaunch the game in the second quarter of 2018 by introducing new features and resetting the economy of the game resulted in the game crashing and not being available to most users for several days. As a result, the daily active users of Racing Rivals and the revenue that we generate from this title significantly decreased from peak levels which

Table of Contents

contributed to our decision to shut down the game effective March 31, 2019. In addition, any issues relating to our games could be exacerbated if our customer service department does not timely and adequately address issues that our players have encountered with our games.

We rely on a combination of our own servers and technology and third party infrastructure to operate our games. A significant portion of our game traffic is hosted by a single vendor and if we experience any system or network failures, unexpected technical problems, cyber attacks or any other interruption to our games, it could reduce our sales, increase costs, or result in a loss of revenue or loss of end users of our games.

We rely on our own servers and third-party infrastructure to operate our games, and we expect that our reliance on such third-party infrastructure and our technology platform will increase as we continue to add additional social features and functionality into our games. We do not control these third parties and replacing them might require significant time and expense. In particular, a significant portion of our game traffic is hosted by Amazon Web Services, which service provides server redundancy and uses multiple locations on various distinct power grids. Amazon may terminate its agreement with us upon 30 days' notice. In addition, Amazon has experienced brief power outages on occasion during the past several years that have affected the availability of certain of our games during such outages. While none of these events adversely impacted our business, a similar outage of a longer duration could. Any technical problem with, cyber attack on, or loss of access to these third parties' or our systems, servers or other technologies, including our technology platform, could result in the inability of end users to download or play our games, cause interruption to gameplay, prevent the completion of billing for a game or result in the loss of users' virtual currency or other in-app purchases, interfere with access to some aspects of our games or result in the theft of end-user personal information. For example, in the second quarter of 2018, our efforts to relaunch Racing Rivals resulted in the game crashing and not being available to most users for several days. In addition, in the second quarter of 2017, we experienced technical issues with our Covet Fashion title that caused an extended outage and resulted in certain users receiving in-game currency erroneously. If users are unable to access and play our games for any period of time, if virtual assets are lost, or if users do not receive their purchased virtual currency, we may receive negative publicity and game ratings, we may lose players of our games, we may be required to issue refunds, and we may become subject to regulatory investigation or class action litigation, any of which would negatively affect our business. Any of these problems could require us to incur substantial repair costs, distract management from operating our business and result in a loss of revenue. Furthermore, our disaster recovery systems and those of third-parties with which we do business may not function as intended or may fail to adequately protect our critical business information in the event of a significant business interruption, which may cause interruption in service of our games, security breaches or the loss of data or functionality, which could negatively affect our business, financial condition or results of operations.

Cyber attacks, security breaches, and computer viruses could harm our business, reputation, brand and operating results.

Cyber attacks, security breaches, and computer viruses have occurred on our systems in the past and may occur on our systems in the future. We store sensitive information, including personal information about our employees. In addition, our games involve the storage and transmission of players' personal information in our facilities and on our equipment, networks and corporate systems run by us or managed by third-parties including Apple, Google, Facebook, Microsoft, and Amazon. Our player data, corporate systems, third-party systems and security measures may be breached due to the actions of outside parties, employee error, malfeasance, a combination of these, or otherwise, and, as a result, an unauthorized party may obtain access to our data, our employees' data, our players' data or any third party data we may possess. In addition, outside parties may attempt to fraudulently induce employees to disclose information in order to gain access to this data. For example, in January 2016 a cyber attack caused us to take down our user forums for nearly a week and in May 2016, one of our employees fell victim to a spear phishing attack in which the employee uploaded sensitive employee information to a third party website. Although these incidents

did not result in a material loss of revenue, any future incidents, particularly of longer duration, could damage our brand and reputation and result in a material loss of revenue. Given the global nature of our business and the low cost, relative ease and proliferation of internet enabled devices, we may be at increased risk for cyber attacks and, specifically, denial of service attacks, such as the denial of service attacks that affected Dyn in October 2016. In addition, as highlighted by reports that ISIS terrorists may have used Sony's PlayStation 4 network to plan attacks, the chat and other social features in our games could potentially be used by terrorist organizations or other criminals to communicate or for other nefarious purposes, which

Table of Contents

could severely damage our brand and reputation. If an actual or perceived security breach of our or a third-party system on which we rely occurs, the market perception of the effectiveness of our security measures could be harmed, we could lose players and advertisers, and we could suffer significant legal and financial harm including loss of revenue due to such events or in connection with remediation efforts and costs, investigation costs or penalties, litigation, regulatory and enforcement actions, compliance with notification obligations, changed security and system protection measures. Any of these actions could have a material and adverse effect on our business, reputation and operating results.

We use a game development engine licensed from Unity Technologies to create many of our games. If we experience any prolonged technical issues with this engine or if we lose access to this engine for any reason, it could delay our game development efforts and cause our financial results to fall below expectations for a quarterly or annual period, which would likely cause our stock price to decline.

We use a game development engine licensed from Unity Technologies to create many of our games, and we expect to continue to use this engine for the foreseeable future. Because we do not own this engine, we do not control its operation or maintenance, nor do we control how the engine is updated or upgraded. As a result, any prolonged technical issues with this engine might not be resolved quickly, despite the fact that we have contractual service level commitments from Unity. In addition, to the extent that we require any functionality that is not offered by Unity we are dependent on Unity to update or upgrade its engine to offer such functionality. Furthermore, although Unity cannot terminate our agreement absent an uncured material breach of the agreement by us, we could lose access to this engine under certain circumstances, such as a natural disaster that impacts Unity or a bankruptcy event. If we experience any prolonged issues with the operation of the Unity game development engine, if the Unity game development engine does not offer the functionality we require or if we lose access to this engine for any reason, it could delay our game development efforts and cause us to not meet revenue expectations for a quarterly or annual period, which would likely cause our stock price to decline. For example, in the first quarter of 2016, we were unable to implement a significant update to our Racing Rivals title due to programming bugs in the Unity game development engine, which update we believe could have helped to increase revenue for that title during the quarter. Further, if one of our competitors acquired Unity, the acquiring company would be less likely to renew our agreement, which expires in October 2019, which could impact our game development efforts in the future, particularly with respect to sequels to games that were created on the Unity engine.

We derive a significant portion of our revenue from advertisements and offers that are incorporated into our free-to-play games through relationships with third parties. If we lose the ability to provide these advertisements and offers for any reason, if we become victim to advertising fraud or if any events occur that negatively impact the revenue we receive from these sources, it would negatively impact our operating results.

In addition to in-app purchases, we derive a significant portion of our revenue from our free-to-play games through advertisements and offers. We incorporate advertisements and offers into our games by implementing third parties' software development kits. In order for us to increase our advertising and offers revenues, we need to continue to demonstrate the reach of our player network and success of our advertising partners. We rely on these third parties to provide us with a sufficient inventory of advertisements and offers to meet the demand of our user base. If we exhaust the available inventory of these third parties, it will negatively impact our revenue. If our relationship with any of these third parties terminates for any reason, or if the commercial terms of our relationships do not continue to be renewed on favorable terms, we would need to locate and implement other third party solutions, which could negatively impact our revenue, at least in the short term. We may also be susceptible to various types of advertising fraud, which could reduce the effectiveness of our advertising campaigns or cause us to pay money to advertising firms for installations that were wrongly attributed to such firms. While we have implemented measures to detect and prevent advertising fraud, such measures may not prove effective, which would harm our user acquisition efforts and could harm our revenues. In addition, internet-connected devices and operating systems controlled by third parties

increasingly contain features that allow device users to disable functionality allowing for the delivery of advertising on their devices. If a great number of users elect to utilize this feature, our ability to deliver effective advertising campaigns on behalf of our advertisers and our revenue might suffer. Furthermore, the revenue that we derive from advertisements and offers is subject to seasonality, as companies' advertising budgets are generally highest during the fourth quarter and decline significantly in the first quarter of the following year, which negatively impacts our revenue in the first quarter (and conversely tends to significantly increase our marketing expenses in the fourth quarter).

27

Table of Contents

The actions of the storefront operators can also negatively impact the revenue that we generate from advertisements and offers. For example, in January 2018, Apple enforced new guidelines relating to certain types of incented offers which negatively impacted our revenues from offers in Design Home starting the first quarter of 2018. Any similar changes in the future that impact our revenue that we generate from advertisements and offers could materially harm our business.

We rely on assumptions and estimates to calculate certain of our key metrics, and real or perceived inaccuracies in such metrics may harm our reputation and negatively affect our business.

Certain of our key metrics, including the number of our daily and monthly active users, our average revenue per daily user and the average useful life of our paying players, is calculated using internal company data from multiple analytics systems that have not been independently verified. The calculation of these metrics is described in detail under the heading titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Operating Metrics.” While these numbers are based on what we believe to be reasonable calculations for the applicable period of measurement, there are inherent challenges in measuring these metrics across our large user base around the world. We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy, but these efforts may not prove successful and we may discover material inaccuracies. In addition, our methodology for calculating these metrics may differ from the methodology used by other companies to calculate similar metrics. For example, we currently treat an individual who plays two different Glu games on the same day or who plays the same game on two different devices during the same day (e.g., iPhone and an iPad) as two active users for each such day when we average or aggregate active users over time. As such, the calculations of our active users may not precisely reflect the actual number of people using our titles. We may also discover unexpected errors in our internal data that resulted from technical or other errors. Furthermore, our Crowdstar studio utilizes a separate analytics system from the rest of our company, which could result in internal inconsistencies or errors. If we determine that any of our metrics are not accurate, we may be required to revise or cease reporting such metrics and it may harm our reputation and business.

Our business and growth may suffer if we are unable to hire and retain key personnel.

Our future success will depend, to a significant extent, on our ability to attract, retain and motivate our key personnel, namely our management team, creative leaders and experienced game development personnel. In particular, we experienced a change in our management team in November 2016 which included the appointment of Nick Earl as our President and Chief Executive Officer. Mr. Earl is critical to our vision, strategic direction, products and technology, and the continued retention of the other members of our senior management team is important to our continued success. In addition, to grow our business, execute on our business strategy and replace departing employees, we must identify, hire and retain qualified personnel, particularly monetization, live operations, server technology, user experience and product management personnel to develop and support our growth games. Attracting and retaining key personnel and other staff is difficult in a competitive hiring market, particularly in the San Francisco Bay Area where we are headquartered, and we may not succeed in doing so. The gaming and technology industries are also traditionally male dominated, so it may be difficult for us to recruit and retain talented female personnel who may be needed to help us optimize our games that are targeted to a more female-focused audience, including our games in the home décor, fashion and time management genres. Volatility of our stock price, changes in our compensation structure for our executive officers that significantly relies on performance linked stock awards, and previous headcount reductions may make it more difficult for us to attract and retain top talent. In particular, should our stock price decline it might be difficult for us to attract and retain qualified personnel, since individuals may elect to seek employment with other companies that they believe have better long-term prospects or that present better opportunities for earning equity-based compensation. Competitors have in the past and may in the future attempt to recruit our employees, and our management and key employees are not bound by agreements that could prevent them from terminating their employment at any time. In addition, we do not maintain a key-person life insurance policy on

any of our officers. Our business and growth may suffer if we are unable to hire and retain key personnel.

28

Table of Contents

Any restructuring actions and cost reduction initiatives that we undertake may not deliver the results we expect, and these actions may adversely affect our business.

During the last several years we have implemented restructuring actions and cost reduction initiatives to streamline operations and improve cost efficiencies. Our most recent restructurings included reductions in personnel in Bellevue, Washington; San Francisco, California; Long Beach, California; Portland, Oregon; and Beijing, China, as well as the divestiture of our Moscow, Russia game development studio. Any future restructurings or divestitures could result in disruptions to our operations and adversely affect our business. For example, in connection with the divestiture of our Moscow studio, we transitioned certain titles that were developed or operated by the Moscow studio, including Deer Hunter 2018, to our Hyderabad, India studio. We have seen a decline in revenues from Deer Hunter 2018, which may in part be related to this transition. In addition, we cannot be sure that the cost reduction and streamlining initiatives will be as successful in reducing our overall expenses as we expect or that additional costs will not offset any such reductions or streamlining. If our operating costs are higher than we expect or if we do not maintain adequate control of our costs and expenses, our operating results will suffer.

We may not realize the benefits expected through our strategic relationship with Tencent and other aspects of the relationship could have adverse effects on our business.

In April 2015, we entered into a strategic relationship with Tencent, a leading Internet company in China and arguably the world's largest gaming company. Tencent, through a controlled affiliate, agreed to invest \$126.0 million in exchange for approximately 16.3% of our total outstanding common stock on a post-transaction basis. In November 2015, we entered into an agreement with an affiliate of Tencent to license and publish its game, WeFire, in the United States and international markets outside of Asia under the name Rival Fire, which we launched in July 2016. In light of the poor performance of the title in terms of monetization and downloads, and the related contractual prepaid royalty commitments and license fees under our agreement with the affiliate of Tencent, we impaired \$14.5 million in the third quarter of 2016. In addition, we may not succeed in entering into any other agreements or operating partnerships with Tencent in the future. Even if we do enter into additional operational partnerships, it could take months to years to fully realize the benefits of such partnerships and, to the extent such agreements involve publishing our games in China, some of our platform partners in China and other parts of Asia may view such a partnership negatively.

Tencent, through its controlled affiliates, held approximately 19.6% of the aggregate voting power of our common stock as of December 31, 2018, and could acquire up to 25.0% of the voting power through open-market purchases of our common stock. While Tencent has agreed to cause these shares to be voted with the majority recommendation of the independent members of our board of directors on most matters, Tencent could have considerable influence over matters such as approving a potential acquisition of us. Tencent was also granted the right to designate a member of our board of directors, initially appointing Tencent Senior Vice President, Steven Ma, and in January 2017 appointing Ben Feder, Tencent's President of International Partnerships (North America), as Mr. Ma's replacement on our board of directors. Mr. Feder or any future Tencent designee could have an actual or apparent conflict of interest in such matters. Tencent's investment in and position with us could also discourage others from pursuing any potential acquisition of us, which could have the effect of depriving the holders of our common stock of the opportunity to sell their shares at a premium over the prevailing market price.

Our reported financial results could be adversely affected by changes in financial accounting standards or by the application of existing or future accounting standards to our business as it evolves.

Our reported financial results are impacted by the accounting policies promulgated by the SEC and accounting standards bodies and the methods, estimates and judgments that we use in applying our accounting policies. The frequency of accounting policy changes may accelerate, including conversion to unified international accounting

standards. Policies affecting revenue recognition have affected, and could further significantly affect, the way we account for revenue. For example, the accounting for revenue derived from free-to-play games, particularly with regard to revenue generated from online digital storefronts, is still evolving and, in some cases, uncertain. In particular, we were required to file an amendment to our Annual Report on Form 10-K for the year ended December 31, 2012 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2013 to restate or revise the financial statements contained in those reports (including for the year ended December 31, 2011) because we did not correctly apply the

Table of Contents

applicable revenue recognition accounting guidance relating to our smartphone revenue. While we believe that we are now correctly accounting for our revenues, this is an area that continues to involve significant discussion among accounting professionals and the future changes to the standard may cause our operating results to fluctuate. In addition, we currently defer revenue related to virtual goods and currency over the average playing period of paying users, which approximates the estimated weighted average useful life of the transaction. While we believe our estimates are reasonable based on available game player information, we may revise such estimates in the future as our games' operation periods change. Any adjustments arising from changes in the estimates of the lives of these virtual items would be applied to the current quarter and prospectively on the basis that such changes are caused by new information indicating a change in the game player behavior patterns of our paying users. Any changes in our estimates of useful lives of these virtual items may result in our revenue being recognized on a basis different from prior periods' and may cause our operating results to fluctuate. As we enhance, expand and diversify our business and product offerings, the application of existing or future financial accounting standards could have a significant adverse effect on our reported results although not necessarily on our cash flows.

If we are unable to maintain effective internal control over financial reporting, the accuracy and timeliness of our financial reporting may be adversely affected.

Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial statements. If we are unable to maintain such internal controls, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal controls as required pursuant to the Sarbanes-Oxley Act, it could result in a material misstatement of our financial statements that would require a restatement, and investor confidence in the accuracy and timeliness of our financial reports and the market price of our common stock could be negatively impacted.

Conversion of key internal systems and processes, particularly our ERP system, and problems with the design or implementation of these systems and processes could interfere with, and therefore harm, our business and operations.

We recently underwent a multi-phase project to convert certain key internal systems and processes, including our enterprise resource planning, or ERP, system to a cloud based system. In connection with the transition to our new ERP system, we shutdown certain of our legacy ERP systems in the third quarter of 2016, which affected certain of our processes in the second half of 2016 and may continue to impact our processes. While we have transitioned to our new ERP system, we may need to resolve issues that arise in connection with this transition. We have invested, and will continue to invest, significant capital and human resources in the design and implementation of these systems and processes. Any problems in the functioning of the new systems or processes, particularly any that impact our operations, could adversely affect our ability to process payments, record and transfer information in a timely and accurate manner, recognize revenue, file SEC reports in a timely manner, or otherwise run our business. Even if we encounter these adverse effects, as noted above, the design and implementation of these new systems and processes may be more time consuming than we anticipated and could negatively impact our business, financial condition, and results of operations.

Our business will suffer if our acquisition and strategic investment activities are unsuccessful or disrupt our ongoing business, which may involve increased expenses and may present risks not contemplated at the time of the transactions.

We have acquired and invested in, and may continue to acquire and invest in, companies, products and technologies that complement our strategic direction. Acquisitions and investments involve significant risks and uncertainties, including:

diversion of management's time and a shift of focus from operating the business to issues related to negotiation of acquisition or investment terms, integration and administration;

- our ability to successfully integrate acquired technologies and operations into our business and maintain uniform standards, controls, policies and procedures;

Table of Contents

- potential employee morale and retention issues resulting from any changes in compensation, management, reporting relationships, or future prospects;
- potential product development delays resulting from any changes and disruptions that may follow the acquisition;
- significant competition from other acquirers and investors as the gaming industry consolidates and challenges in offering attractive consideration given the volatility of our stock price and potential difficulties in obtaining alternative financing;
- challenges retaining the key employees, customers and other business partners of the acquired or investee business;
- our ability to realize synergies expected to result from an acquisition or strategic investment;
- an impairment of acquired goodwill and other intangible assets or investments in future periods would result in a charge to earnings in the period in which the write-down occurs;
- the internal control environment of an acquired or investee entity may not be consistent with our standards and may require significant time and resources to improve;
- in the case of foreign acquisitions or strategic investments, the need to integrate operations across different cultures and languages and to address the particular economic, currency, political and regulatory risks associated with specific countries;
- liability for activities of the acquired or investee companies before the acquisition or investment, including violations of laws, rules and regulations, commercial disputes, tax liabilities, intellectual property and other litigation claims or disputes, accounting standards and other known and unknown liabilities;
- harm to our brand and reputation; and
- harm to our existing business relationships with business partners and advertisers as a result of the acquisition.

In particular, we acquired Crowdstar in the fourth quarter of 2016 in a multi-step transaction that did not involve the cooperation of Crowdstar's management, where the former Chief Executive Officer of Crowdstar did not continue with the company post-acquisition and where we did not receive customary representations, warranties or indemnities from the acquired company. While we successfully integrated Crowdstar into our company and Crowdstar's top titles, Covet Fashion and Design Home, are generating significant revenue, we still face risks and uncertainties in connection with this acquisition. For example, we may not be able to retain key Crowdstar employees for a variety of reasons, including the fact that we relocated the Crowdstar team from Burlingame, California to our new San Francisco headquarters during the fourth quarter of 2018, and the loss of key Crowdstar employees, or any disruption to Covet Fashion and Design Home due to this move, could affect revenue derived from Covet Fashion and Design Home. In addition, we continue to face other risks related to the Crowdstar acquisition, including related to the lawsuit filed by Crowdstar's former Chief Executive Officer in March 2018. For more information regarding this lawsuit, see Part II, Item 1 "Legal Proceedings."

In addition, if we issue equity securities as consideration in an acquisition or strategic investment, as we did for our acquisitions of Griptonite, Inc., Blammo Games Inc., GameSpy Industries, Inc., PlayFirst, Inc. and Cie Games, Inc., our current stockholders' percentage ownership and earnings per share would be diluted. We may also need to raise additional capital in the event we use a significant amount of cash as consideration in an acquisition. Because acquisitions and strategic investments are inherently risky, our transactions may not be successful and may, in some cases, harm our operating results or financial condition.

Table of Contents

Changes in foreign exchange rates and limitations on the convertibility of foreign currencies could adversely affect our business and operating results.

We currently transact business in more than 100 countries and in dozens of different currencies, with the Euro, Canadian Dollar and Indian Rupee being the primary international currencies in which we transact business. Conducting business in currencies other than U.S. Dollars subjects us to fluctuations in currency exchange rates that could have a negative impact on our reported operating results. We experienced significant fluctuations in currency exchange rates in 2016 and 2017, and may experience continued significant fluctuations in the future. We incur expenses for employee compensation and other operating expenses at our non-U.S. locations in the local currency, and an increasing percentage of our international revenue is from customers who pay us in currencies other than the U.S. Dollar. Fluctuations in the exchange rates between the U.S. Dollar and those other currencies could result in the U.S. Dollar equivalent of these expenses being higher and/or the U.S. Dollar equivalent of the foreign-denominated revenue being lower than would be the case if exchange rates were stable. This could negatively impact our operating results. To date, we have not engaged in exchange rate hedging activities, and we do not expect to do so in the foreseeable future.

We face added business, political, regulatory, operational, financial and economic risks as a result of our international operations and distribution, any of which could increase our costs and adversely affect our operating results.

International sales represented approximately 23.5%, 24.5%, and 25.7% of our revenue during 2018, 2017 and 2016, respectively. To target international markets, we develop games that are customized for consumers in those markets. We have international offices located in Canada and India. We expect to increase our international presence, as we intend to increase the number of our employees in our Hyderabad, India office. Risks affecting our international operations include:

- our ability to develop games that appeal to the tastes and preferences of consumers in international markets;
- difficulties developing, staffing, and simultaneously managing a large number of varying foreign operations as a result of distance, language, and cultural differences;
- multiple and conflicting laws and regulations, including complications due to unexpected changes in these laws and regulations;
- our ability to develop, customize and localize games that appeal to the tastes and preferences of consumers in international markets;
- competition from local game developers that have significant market share in certain foreign markets and a better understanding of local consumer preferences;
- potential violations of the Foreign Corrupt Practices Act and local laws prohibiting improper payments to government officials or representatives of commercial partners;
- regulations that could potentially affect the content of our products and their distribution, particularly in China where multiple governmental bodies must review and approve of any gaming application before it may be published;
- foreign exchange controls that might prevent us from repatriating income earned in countries outside the United States;
- potential adverse foreign tax consequences, since due to our international operations, we must pay income tax in numerous foreign jurisdictions with complex and evolving tax laws;
- political, economic and social instability;

Table of Contents

- restrictions on the export or import of technology;
- trade and tariff restrictions and variations in tariffs, quotas, taxes and other market barriers; and
- difficulties in enforcing intellectual property rights in certain countries.

These risks could harm our international operations, which, in turn, could materially and adversely affect our business, operating results and financial condition.

We may also liquidate or cease operating some of our foreign subsidiaries in the future which may raise additional risks. For example, we are in the process of winding down and liquidating our subsidiary in China. These liquidation efforts will require us to obtain approvals from various government agencies in China, which could impose taxes and penalties upon us related to such liquidations.

If we fail to deliver our games at the same time as new mobile devices are commercially introduced, our revenue may suffer.

Our business depends, in part, on the commercial introduction of new mobile devices with enhanced features, including larger, higher resolution color screens, improved audio quality, and greater processing power, memory, battery life and storage. For example, the introduction of new and more powerful versions of Apple's iPhone and iPad and devices based on Google's Android operating system, have helped drive the growth of the mobile games market. In addition, consumers generally purchase the majority of content, such as our games, for a new device within a few months of purchasing it. We do not control the timing of these device launches. The mobile games market could also be disrupted by new technologies, such as the introduction of next generation virtual reality devices. Some manufacturers give us access to their new devices prior to commercial release. If one or more major manufacturers were to stop providing us access to new device models prior to commercial release, we might be unable to introduce games that are compatible with the new device when the device is first commercially released, and we might be unable to make compatible games for a substantial period following the device release. If we do not adequately build into our title plan the demand for games for a particular mobile device or experience game launch delays, we miss the opportunity to sell games when new mobile devices are shipped or our end users upgrade to a new mobile device, our revenue would likely decline and our business, operating results and financial condition would likely suffer.

If the use of smartphones and tablet devices as game platforms and the proliferation of mobile devices generally do not increase, our business could be adversely affected.

While the number of people using mobile Internet-enabled devices, such as smartphones and tablet devices, has increased dramatically in the past few years, the mobile market, particularly the market for mobile games, is still emerging, and it may not grow as we anticipate. Our future success is substantially dependent upon the continued growth of use of mobile devices for games, as opposed to social media applications or other uses. The proliferation of mobile devices may not continue to develop at historical rates and consumers may not continue to use mobile Internet-enabled devices as platforms for games. We believe that historic rates of adoption and download of new applications in the United States will not continue to rise, and will instead decline, as the U.S. mobile application market enters a mature state. In addition, new and emerging technologies could make the mobile devices on which our games are currently released obsolete, requiring us to transition our business model to develop games for other next-generation platforms.

Changes to digital platforms' rules relating to "loot boxes," or the potential adoption of regulations or legislation impacting loot boxes, could require us to make changes to some of our games' economies or design, which could negatively impact the monetization of these games and harm our revenues.

In December 2017, Apple updated its terms of service to require publishers of applications that include “loot boxes” to disclose the odds of receiving each type of item within the loot box to customers prior to purchase. Loot boxes are a commonly used monetization technique in free-to-play mobile games in which a player can acquire a virtual loot box, typically through game play or by using virtual currency, but the player does not know which virtual item he or she will receive (which may be a common, rare or extremely rare item, and may be a duplicate of an item the player already has in

Table of Contents

his or her inventory) until the loot box is opened. The player will always receive one or more virtual items when he or she opens the loot box, but the player does not know exactly which item(s) until the loot box is opened. We utilize loot boxes in some of our top games including our Tap Sports Baseball franchise and Kim Kardashian Hollywood, and we intend to use loot boxes in our upcoming WWE Universe title. We have updated our applicable games to comply with Apple's new rules relating to loot boxes and do not believe that this has had a material impact on the monetization of our games that utilize loot boxes. However, in the event that Apple changes its terms of service to include more onerous requirements or if Apple (or Google) were to prohibit the use of loot boxes in games distributed on its digital platform, it would require us to redesign the economies of the affected games and would likely cause our revenues generated from these games to decline. In April 2018, each of the Belgian Gaming Commission and the Dutch Gambling Authority declared that loot boxes as implemented in certain of the games that they reviewed constituted illegal gambling under its respective laws. While neither of these bodies reviewed any of our games, we may be required to modify the implementation of loot boxes to continue utilizing loot boxes in these jurisdictions, remove loot boxes from our games published in these jurisdictions or cease publishing games containing loot boxes in these jurisdictions. In addition, various other jurisdictions, including Australia, the United Kingdom, and the states of Hawaii, Minnesota and Washington, are reviewing or have indicated that they intend to review the legality of loot boxes and whether they constitute gambling. To the extent that one or more jurisdictions determine that loot boxes constitute gambling or they otherwise elect to regulate the use of loot boxes, it could require us to stop utilizing loot boxes within our games that are distributed in such territories, which would negatively impact our revenues.

Our business is subject to increasing governmental regulation. If we do not successfully respond to these regulations, our business may suffer.

We are subject to a number of domestic and foreign laws and regulations that affect our business. Not only are these laws constantly evolving, which could result in their being interpreted in ways that could harm our business, but legislation is also continually being introduced that may affect both the content of our products and their distribution. In the United States, for example, numerous federal and state laws have been introduced which attempt to restrict the content or distribution of games. Legislation has been adopted in several states, and proposed at the federal level, that prohibits the sale of certain games to minors. If such legislation is adopted, it could harm our business by limiting the games we are able to offer to our customers or by limiting the size of the potential market for our games. We may also be required to modify certain games or alter our marketing strategies to comply with new and possibly inconsistent regulations, which could be costly or delay the release of our games, for example to comply with labeling requirements for our free-to-play games. Additionally, if the FTC or any other significant regulatory body issues rules significantly restricting or even prohibiting in-app purchases or any other key aspect of our business, it would significantly impact our business strategy. In addition, two self-regulatory bodies in the United States (the Entertainment Software Rating Board) and in the European Union (Pan European Game Information (PEGI)) provide consumers with rating information on various products such as entertainment software similar to our products based on the content (for example, violence, sexually explicit content, language). Furthermore, the Chinese government has adopted measures designed to eliminate violent or obscene content in games, along with regulations that may require us to obtain approval from certain government agencies in China, including the Ministry of Culture and General Administration of Press and Publication, in order to continue to publish any of our games in China. Any one or more of these factors could harm our business by limiting the products we are able to offer to our customers, by limiting the size of the potential market for our products, or by requiring costly additional differentiation between products for different territories to address varying regulations.

Furthermore, the growth and development of free-to-play gaming and the sale of virtual goods may prompt calls for more stringent consumer protection laws that may impose additional burdens on companies such as ours. We anticipate that scrutiny and regulation of our industry will increase and that we will be required to devote legal and

other resources to addressing such regulation. For example, existing laws or new laws regarding the regulation of currency and banking institutions may be interpreted to cover virtual currency or goods. If that were to occur we may be required to seek licenses, authorizations or approvals from relevant regulators, the granting of which may depend on us meeting certain capital and other requirements and we may be subject to additional regulation and oversight, all of which could significantly increase our operating costs. Changes in current laws or regulations or the imposition of new laws and regulations in the United States or elsewhere regarding these activities may dampen the growth of free-to-play gaming and impair our business.

Table of Contents

We sometimes offer our players various types of sweepstakes, giveaways and promotional opportunities, and have allowed players to compete against each other in tournaments for cash prizes. We have also in the past through a partnership with Probability PLC offered a suite of Glu branded mobile slots games in the United Kingdom and might continue to explore opportunities with respect to social casino games. We are subject to laws in a number of jurisdictions concerning the operation and offering of such activities and games, many of which are still evolving and could be interpreted in ways that could harm our business. For example, a March 2018 ruling from the 9th Circuit found that the mobile social casino game Big Fish Casino constituted gambling under Washington state law, which ruling could impact our ability to publish a planned social casino game in Washington state. Any future court ruling or other governmental action that imposes liability on providers of online services could result in criminal or civil liability and could harm our business.

In addition, because our services are available worldwide, certain foreign jurisdictions and others may claim that we are required to comply with their laws, including in jurisdictions where we have no local entity, employees or infrastructure.

The laws and regulations concerning data privacy and data security are continually evolving, and our actual or perceived failure to comply with these laws and regulations could harm our business.

We are subject to federal, state and foreign laws regarding privacy and the protection of the information that we collect regarding our users, which laws are currently in a state of flux and likely to remain so for the foreseeable future. The U.S. government, including the FTC and the Department of Commerce, is continuing to review the need for greater regulation over collecting information concerning consumer behavior on the Internet and on mobile devices. The European Union's General Data Protection Regulation, which became effective in May 2018, the California Consumer Privacy Act of 2018, which will become effective in January 2020, and other laws, like the Brazilian Personal Data Protection Bill of Law, create new individual privacy rights and impose worldwide obligations on companies handling personal data, which has resulted, or will result, in a greater compliance burden for us and other companies and could result in us incurring substantial monetary penalties if we are found to be in violation of these laws and regulations. Various U.S. state and federal regulators have also continued to expand the scope of data elements worthy of, and subject to, privacy protections, creating a multi-layered regulation regime that may be applicable to our business and will require time and resources to address. Additionally, the Children's Online Privacy Protection Act requires companies to obtain parental consent before collecting personal information from children under the age of 13. In January 2014, the FTC announced a settlement with Apple related to in-app purchases made by minors. In April 2016, the FTC was also successful in a lawsuit against Amazon, with a Federal District Court granting summary judgment in favor of the FTC, finding Amazon liable for unfairly billing consumers for unauthorized in-app purchases by minors. If we do not follow existing laws and regulations, as well as the rules of the smartphone platform operators, with respect to privacy-related matters, or if consumers raise any concerns about our privacy practices, even if unfounded, it could damage our reputation and operating results. Furthermore, new or the interpretation of existing laws, policies, or industry codes could prevent us from offering, or make it costlier or more difficult to offer services in certain jurisdiction.

All of our games are subject to our privacy policy and our terms of service located on our corporate website. If we fail to comply with our posted privacy policy, terms of service or privacy-related laws and regulations, including with respect to the information we collect from users of our games, it could result in proceedings against us by governmental authorities or others, which could harm our business. In addition, interpreting and applying data protection laws to the mobile gaming industry is often unclear. These laws may be interpreted and applied in conflicting ways from state to state, country to country, or region to region, and in a manner, that is not consistent with our current data protection practices. Complying with these varying requirements could cause us to incur additional costs and change our business practices. Additionally, a violation of applicable data privacy or data security laws by third parties we work with might also have an adverse effect on our business, financial condition or results of

operations. Further, if we fail to adequately protect our users' privacy and data, it could result in a loss of player confidence in our services and ultimately in a loss of users, which could adversely affect our business.

In the area of information security and data protection, many states and foreign jurisdictions have passed laws requiring notification to users when there is a security breach for personal data or requiring the adoption of minimum information security standards that are often vaguely defined and difficult to implement. Costs to comply with these laws

Table of Contents

may increase as a result of changes in interpretation. Furthermore, any failure on our part to comply with these laws may subject us to significant liabilities. The security measures we have in place to protect our data and the personal information of our employees, customers and partners could be breached due to cyber-attacks initiated by third party hackers, employee error or malfeasance, fraudulent inducement of our employees to disclose sensitive information or otherwise. Because the techniques used to obtain unauthorized access, disable or degrade service or sabotage systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any breach or unauthorized access could materially interfere with our operations or our ability to offer our services or result in significant legal and financial exposure, damage to our reputation and a loss of confidence in the security of our data, which could have an adverse effect on our business and operating results.

“Cheating” programs, scam offers, black-markets and other offerings or actions by unrelated third parties that seek to exploit our games and players affect the game-playing experience and may lead players to stop playing our games or divert revenue to unrelated third parties.

Unrelated third parties have developed, and may continue to develop, “cheating” programs, scam offers, black-markets and other offerings that may decrease our revenue generated from our virtual economies, divert our players from our games or otherwise harm us. Cheating programs enable players to exploit vulnerabilities in our games to obtain virtual currency or other items that would otherwise generate in-app purchases for us, play the games in automated ways or obtain unfair advantages over other players who do play fairly. Unrelated third parties attempt to scam our players with fake offers for virtual goods or other game benefits. We devote resources to discover and disable these programs and activities, but if we are unable to do so in a prompt and timely manner, our operations may be disrupted, our reputation damaged and players may play our games less frequently or stop playing our games altogether. This may lead to lost revenue from paying players, increased cost of developing technological measures to combat these programs and activities, legal claims, and increased customer service costs needed to respond to disgruntled players.

Some of our players may make sales or purchases of virtual goods used in our games through unauthorized or fraudulent third-party websites, which may reduce our revenue.

Virtual goods in our games have no monetary value outside of our games. Nonetheless, some of our players may make sales and/or purchases of our virtual goods, such as virtual currency for our Tap Sports Baseball games, through unauthorized third-party sellers in exchange for real currency. These unauthorized or fraudulent transactions are usually arranged on third-party websites and the virtual goods offered may have been obtained through unauthorized means such as exploiting vulnerabilities in our games, from scamming our players with fake offers for virtual goods or other game benefits, or from credit card fraud. We do not generate any revenue from these transactions. These unauthorized purchases and sales from third-party sellers could reduce our revenues by, among other things:

- decreasing revenue from authorized transactions;
- creating downward pressure on the prices we charge players for our virtual currency;
- increasing chargebacks from unauthorized credit card transactions;

- causing us to lose revenue from dissatisfied players who stop playing a particular game;
- increasing costs we incur to develop technological measures to curtail unauthorized transactions;
- resulting in negative publicity or harm our reputation with players and partners; and
- increasing customer support costs to respond to dissatisfied players.

To discourage unauthorized purchases and sales of our virtual goods, we state in our terms of service that the buying or selling of virtual currency and virtual goods from unauthorized third party sellers may result in bans from our games or legal action. We have banned players as a result of such activities. We have also employed technological

Table of Contents

measures to help detect unauthorized transactions and continue to develop additional methods and processes by which we can identify unauthorized transactions and block such transactions. However, there can be no assurance that our efforts to prevent or minimize these unauthorized or fraudulent transactions will be successful.

If we do not adequately protect our intellectual property rights, it may be possible for third parties to obtain and improperly use our intellectual property and our business and operating results may be harmed.

Our intellectual property is essential to our business. We rely on a combination of patent, copyright, trademark, trade secret and other intellectual property laws and contractual restrictions on disclosure to protect our intellectual property rights. To date, we have only eleven issued U.S. patents and five U.S. patent applications currently outstanding, including two that we inherited through acquisitions, so we will not be able to protect the majority of our technologies from independent invention by third parties. In addition, we have filed foreign patent applications on two of the issued U.S. patents.

Despite our efforts to protect our intellectual property rights, unauthorized parties may attempt to copy or otherwise to obtain and use our technology and games, and some parties have distributed “jail broken” versions of our games where all of the content has been unlocked and made available for free. Further, some of our competitors have released games that are nearly identical to successful games released by their competitors in an effort to confuse the market and divert users from the competitor’s game to the copycat game. To the extent third parties copy our games, it could reduce the amount of revenue we are able to generate from any infringed games. Monitoring unauthorized use of our games is difficult and costly, and we cannot be certain that the steps we have taken will prevent piracy and other unauthorized distribution and use of our technology and games, particularly in certain international jurisdictions, such as China, where the laws may not protect our intellectual property rights as fully as in the United States. We may institute litigation to enforce our intellectual property rights, which could result in substantial costs and divert our management’s attention and our resources.

In addition, although we require our third-party developers to sign agreements not to disclose or improperly use our trade secrets, to acknowledge that all inventions, trade secrets, works of authorship, developments and other processes generated by them on our behalf are our property and to assign to us any ownership they may have in those works, it may still be possible for third parties to obtain and improperly use our intellectual properties without our consent. This could harm our brand, business, operating results and financial condition.

We are, and in the future may become, involved in intellectual property disputes, which may disrupt our business, require us to pay significant damage awards and could limit our ability to use certain technologies in the future.

Third parties may sue us for intellectual property infringement, or initiate proceedings to invalidate our intellectual property, which, if successful, could disrupt our business, cause us to pay significant damage awards or require us to pay licensing fees. For example, in July 2018, SwiftLife, Inc. filed a complaint in the U.S. District Court for the Eastern District of New York against us, our wholly owned subsidiary Glu Games Inc., and Taylor Swift, Taylor Swift Productions, Inc. and TAS Rights Management, LLC. The complaint alleges eight causes of action, including that Glu and the other defendants infringe the plaintiff’s federally registered trademark, SwiftLife. While we believe that the allegations asserted against us are without merit and we intend to vigorously defend ourselves in this matter, the outcome of any litigation is uncertain and, regardless of outcome, litigation can have an adverse impact on us because of defense costs, potential negative publicity, diversion of management resources and other factors. In addition, any claims brought against us in the future could result in our being enjoined from using our intellectual property or licensed intellectual property, and we might incur significant licensing fees and could be forced to develop alternative technologies. We may also be required to pay penalties, judgments, royalties or significant settlement

costs. If we fail or are unable to develop non-infringing technology or games or to license the infringed or similar technology or games on a timely basis, we may be forced to withdraw games from the market or be prevented from introducing new games. We might also incur substantial expenses in defending against third-party claims, regardless of their merit.

In addition, we use open source software in some of our games and expect to continue to use open source software in the future. We may face claims from companies that incorporate open source software into their products, claiming ownership of, or demanding release of, the source code, the open source software and/or derivative works that

Table of Contents

were developed using such software, or otherwise seeking to enforce the terms of the applicable open source license. These claims could also result in litigation, require us to purchase a costly license or require us to devote additional research and development resources to change our games, any of which would have a negative effect on our business and operating results.

We are, and in the future may become a party to litigation and regulatory inquiries, which could result in an unfavorable outcome and have an adverse effect on our business, financial condition, results of operation and cash flows.

We are, and may become in the future, subject to various legal proceedings, claims and regulatory inquiries that arise out of the ordinary conduct of our business. For example, on March 14, 2018, Jeffrey Tseng, the former Chief Executive Officer of Crowdstar, filed a complaint in the Superior Court of the State of California for the County of Santa Clara against Glu and other defendants alleging certain claims arising out of our acquisition of Crowdstar. Mr. Tseng is seeking compensatory damages and exemplary damages, each in an amount to be determined at trial, along with costs of suit, reasonable attorneys' fees and such other relief as the Court may deem proper. While we believe that the allegations asserted against us are without merit and we intend to vigorously defend ourselves in this matter, the outcome of any litigation is uncertain and, regardless of outcome, litigation can have an adverse impact on us because of defense costs, potential negative publicity, diversion of management resources and other factors. In addition, events may occur that give rise to a potential risk of litigation. The number and significance of regulatory inquiries have increased as our business has grown and evolved. Any proceedings, claims or inquiries initiated by or against us, whether successful or not, may be time consuming; result in costly litigation, damage awards, consent decrees, injunctive relief or increased costs of doing business, require us to change our business practices or products, require significant amounts of management time, result in diversion of significant operations resources or otherwise harm our business and future financial results.

Unanticipated changes in our income tax rates or exposure to additional tax liabilities may affect our future financial results.

Our future effective income tax rates may be favorably or unfavorably affected by unanticipated changes in the valuation of our deferred tax assets and liabilities, or by changes in tax laws or their interpretation. Determining our worldwide provision for income taxes requires significant judgments. The estimation process and applicable laws are inherently uncertain, and our estimates are not binding on tax authorities. Our effective tax rate could also be adversely affected by a variety of factors, many of which are beyond our control. Recent and contemplated changes to U.S. tax laws, including limitations on a taxpayer's ability to claim and utilize foreign tax credits and defer certain tax deductions until earnings outside of the United States are repatriated to the United States, could impact the tax treatment of our foreign earnings. Further, the taxing authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology or intercompany arrangements, including our transfer pricing, or determine that the manner in which we operate our business is not consistent with the manner in which we report our income to the jurisdictions, which could increase our worldwide effective tax rate and harm our financial position and results of operations. Foreign tax authorities may also interpret or change tax regulations such that we may be subject to tax liabilities upon closure or liquidation of a foreign subsidiary. In addition, we are subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine if our provision for income taxes is adequate. These continuous examinations may result in unforeseen tax-related liabilities, which may harm our future financial results.

We must charge, collect and/or pay taxes other than income taxes, such as payroll, value-added, sales and use, net worth, property and goods and services taxes, in both the United States and foreign jurisdiction. If tax authorities assert that we have taxable nexus in a jurisdiction, they may seek to impose past as well as future tax liability and/or penalties. Any such impositions could also cause significant administrative burdens and decrease our future sales. Moreover, state and federal legislatures have been considering various initiatives that could change our tax position regarding sales and use taxes.

Finally, as we change our international operations, adopt new products and new distribution models, implement changes to our operating structure or undertake intercompany transactions in light of changing tax laws, our tax expense could increase.

Table of Contents

Our facilities are located near known earthquake fault zones, and the occurrence of an earthquake or other natural disaster could damage our facilities and equipment, which could require us to curtail or cease operations.

Our principal offices are located in the San Francisco Bay Area, an area known for earthquakes. We are also vulnerable to damage from other types of disasters, including power loss, fires, explosions, floods, communications failures, terrorist attacks and similar events. If any natural or other disaster were to occur, our ability to operate our business could be impaired.

Our stock price has fluctuated and declined and may continue to do so. Our stock price may be affected by third party data regarding our games.

The trading price of our common stock has fluctuated in the past and is expected to continue to fluctuate in the future, as a result of a number of factors, many of which are outside our control, such as changes in the operating performance and stock market valuations of other technology companies generally, or those in our industry in particular, such as Activision, Electronic Arts and Zynga. We also experience stock price volatility as security analysts or investors base their views and monitor the performance of our games on third party data, like App Annie, AppData, comScore or SensorTower. Third parties publish daily data about us and other mobile gaming companies with respect to downloads of our games, daily and monthly active users and estimated revenue generated by our games. These metrics can be volatile, particularly for specific games, and in many cases do not accurately reflect the actual levels of usage of our games across all platforms or the revenue generated by our games.

In addition, the Nasdaq Global Select Market on which our common stock is listed has in the past experienced extreme price and volume fluctuations that have affected the market prices of many companies, some of which appear to be unrelated or disproportionate to their operating performance. These broad market fluctuations could adversely affect the market price of our common stock. In the past, following periods of volatility in the market price of a particular company's securities, securities class action litigation has often been brought against that company. Securities class action litigation against us could result in substantial costs and divert our management's attention and resources.

If securities or industry analysts do not publish research about our business, or publish negative or misinformed reports about our business, our share price and trading volume could decline and/or become more volatile.

The trading market for our common stock is affected by the research and reports that securities or industry analysts publish about our business. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our shares or lower their opinion of our shares, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our share price or trading volume to decline. In addition, our share price and the volatility of our shares can be affected by misinformed or mistaken research reports on our business.

Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could reduce the price that our common stock might otherwise attain and may dilute existing stockholders' voting power and ownership interest in us.

The market price of shares of our common stock could decline as a result of substantial sales of our common stock, particularly sales by our directors and their affiliates, executive officers, employees and significant stockholders, under our current shelf registration statements, through a large number of shares of our common stock becoming available for sale, or the perception in the market that holders of a large number of shares intend to sell their

shares. For example, Tencent is free to sell the 21,000,000 shares it acquired from us in the second quarter of 2015 on the open-market, subject only to our black-out periods and other limitations under our insider trading policy.

Table of Contents

Some provisions in our certificate of incorporation and bylaws, as well as Delaware law, may deter third parties from seeking to acquire us.

Our certificate of incorporation and bylaws contain provisions that may make the acquisition of our company more difficult without the approval of our board of directors, including the following:

- our board of directors is classified into three classes of directors with staggered three-year terms;
- only our chairman of the board, our lead independent director, our Chief Executive Officer, our president or a majority of our board of directors is authorized to call a special meeting of stockholders;
- our stockholders are able to take action only at a meeting of stockholders and not by written consent;
- only our board of directors and not our stockholders is able to fill vacancies on our board of directors;
- our certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval; and
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before a meeting of stockholders.

In addition, as a Delaware corporation, we are subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation Law, which prevents certain stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations without approval of the holders of at least two-thirds of our outstanding common stock not held by such 15% or greater stockholder, although our board of directors waived this provision with respect to Tencent's potential acquisition of greater than 15% of our shares in connection with the transaction in which we initially sold shares of our common stock to an affiliate of Tencent.

We have no plans to pay dividends for the foreseeable future.

We have never declared or paid any cash dividends on our common stock and do not have any plans to pay cash dividends in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease our San Francisco, California corporate headquarters, an office building of approximately 57,000 square feet. The San Francisco facility currently accommodates our principal executive, marketing, business development, human resources, finance, legal, information technology and administrative activities, two of our development studios, and other development activities.

We lease additional domestic office space in Burlingame and San Mateo, California. We lease offices for our foreign operations in: Toronto, Canada and Hyderabad, India. These additional domestic and international facilities primarily accommodate development studios, and customer care activities, and total approximately 61,000 square feet.

We believe our space is adequate for our current needs and that suitable additional or substitute space will be available to accommodate the foreseeable expansion of our operations. See Note 9 of the Notes to Consolidated Financial Statements in Item 8 of this report for more information about our lease commitments.

Table of Contents

Item 3. Legal Proceedings

On March 14, 2018, Jeffrey Tseng, the former Chief Executive Officer of Crowdstar, filed a complaint in the Superior Court of the State of California for the County of Santa Clara against Time Warner Inc., Rachel Lam, Intel Capital Corporation, Middlefield Ventures Inc. and Jose Blanc (collectively, the “Non-Glu Defendants”), Glu and additional yet-to-be-named defendants. The complaint alleges (i) breach of fiduciary duty by the Non-Glu Defendants, (ii) aiding and abetting breach of fiduciary duty by Glu and (iii) intentional interference with contract, intentional interference with prospective economic advantage, negligent interference with prospective economic advantage and unfair competition by each of the defendants, in each case relating to circumstances arising from our acquisition of Crowdstar and the events leading up to the acquisition. Mr. Tseng is seeking compensatory damages and exemplary damages, each in an amount to be determined at trial, along with costs of suit, reasonable attorneys’ fees and such other relief as the Court may deem proper. The first Case Management Conference, was held on July 20, 2018. Glu and the Non-Glu Defendants filed demurrers in response to Mr. Tseng’s complaint on August 17, 2018, Mr. Tseng filed responses to these demurrers on September 17, 2018, and Glu and the Non-Glu Defendants filed reply briefs in support of their demurrers on October 15, 2018. A hearing with respect to the demurrers was held on November 30, 2018. On January 24, 2019, the judge issued an order sustaining the demurrers on all six claims and gave Mr. Tseng 10 days’ leave to amend his complaint. We believe that the allegations against us are without merit and intend to continue to vigorously defend ourselves in this matter.

From time to time, we are subject to various claims, complaints and legal actions in the normal course of business. We are not currently party to any pending litigation, the outcome of which will have a material adverse effect on our operations, financial position or liquidity. However, the ultimate outcome of any litigation is uncertain and, regardless of outcome, litigation can have an adverse impact on us because of defense costs, potential negative publicity, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information for Common Stock

Our common stock has been listed on The Nasdaq Global Select Market under the symbol “GLUU” since our initial public offering in March 2007.

Stock Price Performance Graph

The following graph shows a comparison from December 31, 2013 through December 31, 2018 of the cumulative total return for an investment of \$100 (and the reinvestment of dividends) in our common stock, the Nasdaq Composite Index, NASDAQ Telecommunications Index, S&P 500 Index, and RDG Technology Composite Index. Such returns are based on historical results and are not intended to suggest future performance. We have historically utilized the NASDAQ Telecommunications Index in our stock price performance graph. However, we believe the RDG Technology Composite Index is a better indicator of how Glu’s stock price performance compares to other companies in the overall

Table of Contents

technology industry and, as a result, intend to no longer utilize the NASDAQ Telecommunications Index in our stock price performance graph in future Annual Reports on Form 10-K.

The information under the heading “Stock Price Performance Graph” shall not be deemed “soliciting material” or to be “filed” for purposes of Section 18 of the Exchange Act of 1934, and shall not be incorporated by reference into any registration statement or other document filed by us with the SEC, whether made before or after the date of this report, regardless of any general incorporation language in such filing, except as expressly set forth by specific reference in such filing.

Stockholders

As of February 15, 2019, we had approximately 46 record holders of our common stock and thousands of additional beneficial holders.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our Board of Directors.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Item 6. Selected Financial Data

The following selected consolidated financial data should be read in conjunction with Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” Item 8, “Financial Statements and

42

Table of Contents

Supplementary Data,” and other financial data included elsewhere in this report. Our historical results of operations are not necessarily indicative of results of operations to be expected for any future period.

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(In thousands, except per share amounts)				
Consolidated Statements of Operations Data:					
Revenue	\$ 366,561	\$ 286,827	\$ 200,581	\$ 249,900	\$ 223,146
Cost of revenue:					
Platform commissions, royalties and other	128,445	103,499	75,239	95,682	80,736
Impairment of prepaid royalties and guarantees	711	27,323	30,107	2,502	256
Impairment and amortization of intangible assets	9,119	10,331	14,792	9,553	4,767
Total cost of revenue	138,275	141,153	120,138	107,737	85,759
Gross profit	228,286	145,674	80,443	142,163	137,387
Operating expenses (1):					
Research and development	94,934	92,420	81,879	72,856	64,284
Sales and marketing	113,860	104,356	48,050	48,240	45,076
General and administrative	31,667	34,425	30,225	26,092	25,019
Amortization of intangible assets	—	—	—	201	508
Restructuring charge	240	6,019	2,279	1,075	435
Total operating expenses	240,701	237,220	162,433	148,464	135,322
(Loss)/Income from operations	(12,415)	(91,546)	(81,990)	(6,301)	2,065
Interest and other expense, net	(235)	(6,850)	(5,751)	(743)	(1,472)
(Loss)/Income before income taxes	(12,650)	(98,396)	(87,741)	(7,044)	593
Income tax benefit (provision)	(549)	826	301	(141)	7,555
Net (loss)/income	(13,199)	(97,570)	(87,440)	(7,185)	8,148
Net (loss)/income per share:					
Basic	\$ (0.09)	\$ (0.72)	\$ (0.66)	\$ (0.06)	\$ 0.09
Diluted	\$ (0.09)	\$ (0.72)	\$ (0.66)	\$ (0.06)	\$ 0.08
Weighted average common shares outstanding:					
Basic	141,402	135,715	131,804	118,775	91,826
Diluted	141,402	135,715	131,804	118,775	96,922
(1) Includes stock-based compensation expense as follows:					
Research and development	\$ 12,807	\$ 6,460	\$ 4,567	\$ 3,563	\$ 7,422
Sales and marketing	2,795	1,289	1,091	1,082	701
General and administrative	8,990	7,314	7,605	7,041	3,510

	As of December 31,		2016	2015	2014
	2018	2017			
	(In thousands)				
Cash and cash equivalents and short-term investments	\$ 97,834	\$ 63,764	\$ 102,102	\$ 180,542	\$ 70,912
Total assets	314,433	299,298	339,504	402,986	251,663
Total long-term liabilities	7,191	12,534	22,350	25,932	3,936
Total stockholder's equity	\$ 177,313	\$ 153,860	\$ 232,814	\$ 306,428	\$ 171,706

Please see Note 1, Note 3 and Note 9 of our Notes to Consolidated Financial Statements for a discussion of factors such as impairment of prepaid royalties and guarantees, divestiture, and any material uncertainties that may materially affect the comparability of the information reflected in selected financial data, described in Item 6 of this report.

Table of Contents

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the related notes included in Item 8, "Financial Statements and Supplementary Data" of this report. In addition to our historical consolidated financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, and beliefs. Our actual results and the timing of certain events could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed below and elsewhere in this report, particularly in Item 1A, "Risk Factors."

Our Management's Discussion and Analysis of Financial Condition and Results of Operations, or MD&A, includes the following sections:

- An Overview that discusses at a high level our operating results and some of the trends that affect our business;
- Critical Accounting Policies and Estimates that we believe are important to understanding the assumptions and judgments underlying our financial statements;
- Recent Accounting Pronouncements;
- Results of Operations, including a more detailed discussion of our revenue and expenses; and
- Liquidity and Capital Resources, which discusses key aspects of our statements of cash flows, changes in our balance sheets and our financial commitments.

Overview

This overview provides a high-level discussion of our operating results and some of the trends that affect our business. We believe that an understanding of these trends is important to understanding our financial results for fiscal 2018, as well as our future prospects. This summary is not intended to be exhaustive, nor is it intended to be a substitute for the detailed discussion and analysis provided elsewhere in this report, including our consolidated financial statements and accompanying notes.

Financial Results and Trends

Revenue for 2018 was \$366.6 million, a 27.8% increase compared to 2017, in which we reported revenue of \$286.8 million. The increase in total revenue was primarily related to a \$71.8 million increase in our revenue from micro-transactions (in-app purchases) and a \$9.0 million increase in our revenue from advertisements and offers. The increase was primarily related to an increase in revenue from Design Home, Covet Fashion, the Tap Sports Baseball franchise and Kim Kardashian: Hollywood. These increases were partially offset by declining revenue on a year over year basis from catalog games such as Restaurant Dash with Gordon Ramsay, Deer Hunter 2018 (originally launched as Deer Hunter 2016), Deer Hunter Classic, Cooking Dash, Kendall & Kylie, Contract Killer Sniper and Racing Rivals.

Revenue for 2017 was \$286.8 million, a 43.0% increase compared to 2016, in which we reported revenue of \$200.6 million. The increase in total revenue was primarily related to a \$79.7 million increase in our revenue from micro-transactions (in-app purchases) and a \$7.4 million increase in our revenue from advertisements and offers. The increase was primarily related to an increase in revenue from the launch of MLB Tap Sports Baseball 2017 in March 2017, the launch of Restaurant Dash with Gordon Ramsay in June 2016 and the addition of Covet Fashion and Design Home through our acquisition of Crowdstar in November 2016. This increase was partially offset by declining revenue on a year over year basis from catalog titles such as Tap Sports Baseball 2016, Kendall & Kylie, Kim Kardashian: Hollywood, Racing Rivals, and Cooking Dash.

Table of Contents

We have concentrated our product development efforts towards developing games for smartphone and tablet devices. We generate the majority of our revenue from Apple's iOS platform, which accounted for 63.1%, 63.0%, and 62.4% of our total revenue for the years ended December 31, 2018, 2017, and 2016, respectively. We generated the majority of this iOS-related revenue through the Apple App Store, which represented 54.7%, 54.2%, and 52.7% of our total revenue for the years ended December 31, 2018, 2017, and 2016, respectively, with the significant majority of such revenue derived from in-app purchases. We generated the balance of our iOS-related revenue from offers and advertisements in games distributed on the Apple App Store. In addition, we generated approximately 36.6%, 36.0%, and 36.1% of our total revenue for the years ended December 31, 2018, 2017, and 2016, respectively, from the Android platform. We generated the majority of our Android-related revenue through the Google Play Store, which represented 31.3%, 30.3%, 27.6% of our total revenue for the years ended December 31, 2018, 2017, and 2016, respectively, with the significant majority of such revenue derived from in-app purchases. We generated the balance of our Android-related revenue from other platforms that distribute apps that run the Android operating system (e.g., the Amazon App Store) and through offers and advertisements in games distributed through the Google Play Store and other Android platforms.

We currently publish titles primarily in four genres: home décor, sports and action, fashion and celebrity, and time management. We believe these are genres in which we have already established a leadership position, are otherwise aligned with our strengths or are conducive to the establishment of a strong growth title. Across genres, we view our titles as either growth games or catalog games, and within the catalog group, our titles are either classified as evergreen games or legacy games. Growth games are titles that we continue to update with additional content and features and which grow revenue year over year. Evergreen games are similar to growth games in that we continue to update them with additional content and features, but differ from growth games in that our focus is to reduce and potentially reverse their year over year revenue declines; to the extent that we succeed in our efforts to grow annual revenue from an evergreen game and expect such title's revenues to continue to grow on an annual basis, we would then consider such evergreen game to be a growth game. Legacy games are those titles that are still published by us and earn revenue, but on which we expend little to no investment in terms of updates and enhancements.

We established our leadership position in the home décor genre with our release of Design Home in November 2016, which was the first title launched by Crowdstar following the acquisition. We introduced key updates for Design Home in 2018, including elite events for elder players, improved series challenges and language localization in German, French and Spanish, and are planning key updates for this title in 2019, including the introduction of a deeper meta loop and e-commerce functionality. Our leadership in the sports and action category remains strong with our Tap Sports Baseball and Deer Hunter franchises, and we furthered our leadership with the launch of MLB Tap Sports Baseball 2018 in March 2018 which includes licensed content from Major League Baseball, or MLB, together with current and former MLB players pursuant to our continuing agreements with the Major League Baseball Players Association, or MLBPA, and Major League Baseball Players Alumni Association, or MLBPA. We expect to launch MLB Tap Sports Baseball 2019 in March 2019 and expect to add to our portfolio of sports and action titles through the worldwide release of WWE Universe in 2019 and the next iteration of our Deer Hunter franchise in 2020. We established our leadership in the fashion and celebrity gaming genre when we launched Kim Kardashian: Hollywood in June 2014, and extended our leadership position through our acquisition of Crowdstar in November 2016 and its successful Covet Fashion title. The time management genre includes our Cooking Dash and Diner Dash franchises, and our leadership position in this genre was bolstered by our successful release of Restaurant Dash with Gordon Ramsay (which was originally branded as Gordon Ramsay DASH) in June 2016. We expect to add to our portfolio of time management titles through the release of Diner DASH Adventures in 2019.

We believe that our games consistently have high production values, are visually appealing and have engaging core gameplay. These characteristics have typically helped to drive installs and awareness of our games and resulted in highly positive consumer reviews. The majority of our games have been featured on Apple and Google storefronts when they were commercially released, which we believe is the result of us being a good partner of Apple and Google.

We work closely with our celebrity and brand licensors to engage their social media audiences and build games that will resonate with their unique fan bases. For example, our Kim Kardashian: Hollywood title utilizes transmedia storytelling, leveraging Ms. Kardashian West's built-in social media fan base to drive installs and awareness of the game, and then attempting to surprise and delight those fans with real-world events and other game content based on her life. Our goal is for the game content to become entwined with Ms. Kardashian West's persona and social media

Table of Contents

presence, and to otherwise enhance interaction with her fans. We also leverage the strength of well-known brands and licensors to provide users with more realistic experiences, such as the case with MLB Tap Sports Baseball 2018 which features all MLB clubs and uniforms and current and former MLB players. We also work to build and nurture social communities in and around the games themselves, creating a new vehicle for strong, personal engagement with the brand or celebrity's fan base.

For us to continue driving installs and awareness of our games and to improve monetization and retention of our players, we must ensure that each of our games, has compelling gameplay and a core monetization loop that incentivizes players to make in-app purchases. In addition, we must regularly update our games with compelling new content, deliver socio-competitive features like tournaments, contests, player-versus-player gameplay and live events and build and nurture social media communities around our franchises both in-game and holistically via community features such as dedicated social channels.

We also plan to continue monitoring the successful aspects of our games to drive downloads and enhance monetization and retention as part of our product strategy, whether by optimizing advertising revenue within each title, securing additional compelling licensing arrangements, building enhanced and more complex core gameplay, adding deep meta game features and additional social features, tournaments and events, offering subscriptions for in game durables and consumables to players or otherwise. Optimizing advertising revenue within our games requires us to continue taking advantage of positive trends in the mobile advertising space, particularly as brands continue to migrate budgets from web to mobile. Continuing to drive installs and awareness of our games through licensing efforts requires that we continue to partner with brands, celebrities, and social influencers that resonate with potential players of our games. Partnering with desirable licensing partners and renewing our existing licenses with our most successful partners requires that we continue to develop successful games based on licensed content and are able to compete with other mobile gaming companies on financial and other terms in signing such partners. We also plan to continue introducing third-party licensed brands, properties and personalities into our games as additional licensed content, for cameo appearances or for limited time events in order to drive awareness and monetization.

Across the globe our industry is evidencing that hit titles generally remain higher in the top grossing charts for longer. We believe this is due to the continued specialization and investment of teams and companies in their hit titles, and the live, social nature of certain games. Our strategy and the measures we have implemented to support our business position us to take advantage of these trends, as evidenced by the continued strength of our Design Home, Covet Fashion, and Kim Kardashian: Hollywood titles and the year over year growth of our Tap Sports Baseball franchise. We continue to regularly update and otherwise support our growth and evergreen games in order to ensure that those games monetize and retain users for even longer periods of time. In addition, we plan to continue to invest in our creative leaders and the creative environments in which they and their teams work to increase our likelihood of creating significant hit growth games in 2019 and beyond.

Our net loss in the year ended December 31, 2018 was \$13.2 million versus a net loss of \$97.6 million in the year ended December 31, 2017. This change was primarily due to an increase in revenue of \$79.7 million, a decrease in cost of sales of \$2.9 million, a decrease in general and administrative expense of \$2.8 million and a decrease in restructuring charges of \$5.8 million. These changes were partially offset by an increase in sales and marketing

expense of \$9.5 million, an increase in research and development expense of \$2.5 million and a decrease in other expense of \$6.1 million related to the loss recorded on the divestiture of our Moscow studio in December 2017. See “—Results of Operations—Comparison of the Years Ended December 31, 2018 and 2017” below for further details. Our operating results were also affected by fluctuations in foreign currency exchange rates of the currencies in which we incurred meaningful operating expenses (principally the Canadian Dollar, and Indian Rupee), and our customers’ reporting currencies.

Our net loss in the year ended December 31, 2017 was \$97.6 million versus a net loss of \$87.4 million in the year ended December 31, 2016. This change was primarily due to an increase in cost of revenue of \$21.0 million, an increase of \$56.3 million in sales and marketing expenses and a net increase in interest and other expenses of \$1.1 million. These increases were partially offset by an increase in revenue of \$86.2 million. See “—Results of Operations—Comparison of the Years Ended December 31, 2017 and 2016” below for further details. Our operating results were also affected by fluctuations in foreign currency exchange rates of the currencies in which we incurred meaningful operating

Table of Contents

expenses (principally the British Pound Sterling, Euro, Chinese Renminbi, Russian Ruble, Canadian Dollar, and Indian Rupee), and our customers' reporting currencies, which fluctuated significantly in 2016 and 2017. We expect our sales and marketing expense will slightly decrease as a percent of revenue in 2019.

Our ability to achieve and sustain profitability depends not only on our ability to grow our revenue, but also on our ability to manage our operating expenses. We significantly increased our sales and marketing expenditures beginning in the second quarter of 2017, which was primarily related to Design Home, as we sought to leverage the game's momentum, and we further increased our overall sales and marketing spending during 2018. The increase in 2018 expense compared to 2017 largely related to higher marketing spend for Covet Fashion, the Tap Sports Baseball franchise and Kim Kardashian: Hollywood, partially offset by lower marketing expense for some of our catalog titles. We expect our sales and marketing expenses to increase in 2019 primarily due to higher user acquisition expenditures, including related to the launch of WWE Universe, Diner DASH Adventures and Disney Sorcerer's Arena in 2019. Additionally, the largest component of our recurring expenses is personnel costs, which consist of salaries, benefits and incentive compensation, including bonuses and stock-based compensation. We have conducted several restructurings since 2016. However, the cost reductions from these restructurings were largely offset by personnel costs related to our acquisition of Crowdstar in November 2016. In December 2017, we sold our wholly owned subsidiary in Moscow and transitioned the catalog games developed and/or operated by the Moscow studio to a more cost-effective location in Hyderabad, India. In 2019, we intend to focus on reducing our operating costs to be more efficient. These efforts may be partially offset by our plans to continue hiring additional development personnel in the San Francisco Bay Area and in Hyderabad, India.

Cash and cash equivalents at December 31, 2018 totaled \$97.8 million, an increase of \$34.0 million from the \$63.8 million balance at December 31, 2017. This increase was primarily related to \$32.3 million of cash generated from operations and \$2.2 million of cash generated from financing activities, which was partially offset by \$636,000 of cash used in investing activities.

Key Operating Metrics

We manage our business by tracking various non-financial operating metrics that give us insight into user behavior in our games. The three metrics that we use most frequently are Daily Active Users (DAU), Monthly Active Users (MAU), and Average Revenue Per Daily Active User (ARPDau). Our methodology for calculating DAU, MAU, and ARPDau may differ from the methodology used by other companies to calculate similar metrics.

DAU is the number of individuals who played a particular smartphone game on a particular day. An individual who plays two different games on the same day is counted as two active users for that day when we aggregate DAU across games. In addition, an individual who plays the same game on two different devices during the same day (e.g., an iPhone and an iPad) is also counted as two active users for each such day when we average or aggregate DAU over time. Average DAU for a particular period is the average of the DAUs for each day during that period. We use DAU as a measure of player engagement with the titles that our players have downloaded.

MAU is the number of individuals who played a particular smartphone game in the month for which we are calculating the metric. An individual who plays two different games in the same month is counted as two active users for that month when we aggregate MAU across games. In addition, an individual who plays the same game on two different devices during the same month (e.g., an iPhone and an iPad) is also counted as two active users for each such month when we average or aggregate MAU over time. Average MAU for a particular period is the average of the MAUs for each month during that period. We use the ratio between DAU and MAU as a measure of player retention.

ARPDau is total free-to-play smartphone revenue – consisting of micro-transactions, advertisements and offers – for the measurement period divided by the number of days in the measurement period divided by the DAU for the measurement period. ARPDau reflects game monetization. Under our revenue recognition policy, we recognize this revenue over the estimated average playing period of a user, but our methodology for calculating our DAU does not align with our revenue recognition policy for micro-transactions and offers, under which we defer revenue. For example, if a title is introduced in the last month of a quarter, we defer a substantial portion of the micro-transaction and offer revenue to future months, but the entire DAU for the newly released title is included in the month of launch.

Table of Contents

We calculate DAU, MAU and ARPDau primarily from our main distribution platforms: Apple's App Store, Google's Play Store, and Amazon's Appstore, as well as from Facebook for certain titles; we are not able to calculate these metrics across all of our distribution channels. In addition, the platforms that we include for purposes of this calculation have changed over time, and we expect that they will continue to change as our business evolves, but we do not expect that we will adjust prior metrics to take any such additions or deletions of distribution platforms into account. We believe that calculating these metrics for only our primary distribution platforms at a given period is generally representative of the metrics for all of our distribution platforms. Moreover, we rely on the data analytics software that we incorporate into our games to calculate and report the DAU, MAU and ARPDau of our games, and we make certain adjustments to the analytics data to address inconsistencies between the information as reported and our DAU and MAU calculation methodology.

We have estimated the DAU and MAU for certain older titles because the analytics tools incorporated into those titles are incompatible with newer device operating systems (e.g., iOS 12), preventing us from collecting complete data. For these titles, we estimate DAU and MAU by extrapolating from each affected title's historical data using a fixed decay rate in light of the behavior of similar titles for which complete data is available. The table below sets forth our aggregate DAU, MAU and ARPDau for all of our then-active smartphone titles for the periods specified, followed by a qualitative discussion of the changes in these metrics. Aggregate DAU and MAU include users of both our free-to-play and premium titles, whereas aggregate ARPDau is calculated based only on revenue from our free-to-play games. Aggregate DAU and MAU for each period presented represents the aggregate metric for the last month of the period. For example, DAU for the three months ended December 31, 2018 is aggregate daily DAU for the month of December 2018 calculated for all active smartphone free-to-play and premium titles in that month across the distribution platforms for which we calculate the metric.

	Three Months Ended, 2018				2017			
	March 31	June 30	September 30	December 31	March 31	June 30	September 30	December 31
Aggregate DAU	3,585	3,627	3,408	3,214	4,098	4,627	3,903	3,801
Aggregate MAU	24,787	22,817	19,415	21,113	32,523	32,192	27,585	28,646
Aggregate ARPDau	\$ 0.25	\$ 0.27	\$ 0.32	\$ 0.32	\$ 0.15	\$ 0.16	\$ 0.23	\$ 0.23

The decrease in aggregate DAU and MAU for the three months ended December 31, 2018 as compared to the same period of the prior year was primarily related to fewer downloads across our portfolio of games.

Our aggregate ARPDau increased for the three months ended December 31, 2018 as compared to the same period of the prior year, as we improved monetization on certain titles, particularly through increased content updates and use of social features in those games. Future increases in our aggregate DAU, MAU and ARPDau will depend on our

ability to retain current players, attract new paying players, launch new games and expand into new markets and distribution platforms.

We rely on a very small portion of our total users for nearly all of our revenue derived from in-app purchases. Since the launch of our first free-to-play titles in the fourth quarter of 2010, the percentage of unique paying users for our largest revenue-generating free-to-play games has typically been less than 5%, when measured as the number of unique paying users on a given day divided by the number of unique users on that day, though this percentage fluctuates. It may be higher than 5% for some of our games while for certain other games it may be higher during specific, relatively short time periods, such as immediately following worldwide launch, during special events or following content updates, marketing campaigns or certain other events.

Significant Transactions

Divestiture of Moscow Studio

On December 31, 2017, we entered into the following agreements related to the divestiture of our Moscow-based game development studio (the “Moscow Studio”) through the sale of our wholly-owned UK subsidiary Glu Mobile (Russia) Limited (“GMRL”):

Table of Contents

- Share Purchase Agreement (the “SPA”) between Glu and Saber Interactive (“Saber”);
- Transitional Services Agreement (the “TSA”) among Glu, Saber and MGL. My.com (Cyprus) Limited (“MGL”); and
- Asset Purchase and License Agreement (the “APLA”) between Glu and MGL.

Pursuant to the SPA, Saber purchased all the issued and outstanding share capital of GMRL. Saber also assumed all obligations under the office lease for the Moscow Studio.

Under the TSA, Saber agreed to transition certain legacy titles from the Moscow Studio to our Hyderabad studio. Upon successful completion of the transition (i) Saber paid the employees of the Moscow Studio and GMRL bonus payments of \$500,000 in the aggregate and reduced the cash consideration by the amount of the bonus, and (ii) certain employees of the Moscow Studio and GMRL had the vesting of an aggregate of approximately 147,000 shares subject to equity awards accelerated.

Pursuant to the APLA, we sold four mobile games (and related intellectual property and other rights) developed by the Moscow Studio: (i) Last Day Alive, (ii) Heroes of Destiny, (iii) a game that was in development featuring a male celebrity, and (iv) Furiosa. We transferred all of our rights and obligations under certain contracts related to the game featuring a male celebrity, including, but not limited to, the obligation to pay the remaining approximately \$1.5 million in minimum guarantee and other payments under these contracts. We also agreed to provide MGL with a non-exclusive, perpetual, worldwide, irrevocable, non-transferrable, royalty-free license to certain development tools and technology necessary to use, develop, publish, exploit and sell the purchased games and that MGL and/or its affiliates may use for the development of other of its products.

The total cash consideration under the SPA and APLA was \$3.2 million, of which we received \$1.7 million in January 2018. The remaining \$1.5 million, net of a transition bonus payment of \$500,000, was received in April 2018 upon completion of the transition of the legacy titles from the Moscow Studio to our Hyderabad studio.

In connection with the divestiture, we recorded a loss of \$6.5 million in the year ended December 31, 2017, which is included in other expense on the consolidated statement of operations. This was primarily comprised of a \$10.0 million charge related to the assignment of one of the contracts related to the male celebrity, a \$1.2 million charge related to the write-off of goodwill associated with the Moscow Studio and a \$0.5 million charge related to the write-off of net assets associated with the Moscow Studio. These charges were partially offset by \$3.2 million in cash paid by Saber and MGL, \$1.5 million related to the assumption of obligations by MGL under the contract related to the male celebrity, and \$0.5 million related to the transition services provided by Saber.

In connection with the activities related to the transition under the TSA that occurred in 2018, we recorded the following expenses in the year ended December 31, 2018:

- \$500,000 related to bonuses that became due to the employees of the Moscow Studio and GMRL;
- \$514,000 related to the vesting of 147,000 shares subject to equity awards held by certain employees of the Moscow Studio and GMRL; and
- \$515,000 related to the amortization of transition services assets that were capitalized as part of the transaction consideration.

Our divestiture of the Moscow studio was part of our efforts to consolidate our studio locations, focusing on a new scaled creative center in San Francisco and a low cost, repeatable location in Hyderabad, India. This divestiture was not presented as discontinued operations in the consolidated statements of operations, because it did not represent a strategic shift in our business and is not expected to have a significant effect on our operations or financial results, as we continued operating similar businesses after the divestiture.

Crowdstar Acquisition

Table of Contents

On November 2, 2016, we, through a wholly owned subsidiary, acquired shares representing approximately 80.6% of the issued and outstanding voting power of Crowdstar, for consideration of approximately \$40.8 million in cash pursuant to a transfer agreement by and among us, Crowdstar and certain stockholders of Crowdstar. Crowdstar, which was based in Burlingame, California, develops fashion and home décor genre games for mobile devices.

Following the initial acquisition of shares of Crowdstar by us, we exercised the right, as the holder of a majority of each of the preferred stock and the capital stock of Crowdstar, to appoint each of the five members of the board of directors of Crowdstar. In addition, certain drag-along provisions specified in a voting agreement by and among Crowdstar and certain stockholders of Crowdstar were triggered. Pursuant to the drag-along provisions, certain other stockholders of Crowdstar were required to tender their Crowdstar capital stock to us on the same terms as those specified in the transfer agreement.

On December 6, 2016, we acquired the remaining issued and outstanding shares of Crowdstar pursuant to a short-form merger and now have 100% ownership of Crowdstar. We paid an aggregate of approximately \$45.5 million of cash (\$40.8 million for the initial purchase of shares and an aggregate of \$4.7 million in connection with purchasing shares in connection with exercising the drag-along provisions and effecting the short-form merger) to acquire 100% ownership of Crowdstar.

Our first title created by Crowdstar, Design Home, was released in November 2016.

Related Party Transaction

In November 2015, we entered into an agreement with an affiliate of Tencent pursuant to which we agreed, subject to certain conditions, to pay in the aggregate, up to \$15.0 million in recoupable advanced royalties and non-recoupable license fees. As of December 31, 2016, we had paid the full amount of \$15.0 million, as all payment milestones were achieved.

During the year ended December 31, 2016, we recorded an impairment of approximately \$14.5 million for un-recouped advanced royalties and non-recoupable license fees that were paid to an affiliate of Tencent, due to the underperformance of our Rival Fire title which launched during the third quarter of 2016 and the negligible cash flows anticipated for the remaining contractual life of these assets.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with United States generally accepted accounting principles, or GAAP. These accounting principles require us to make certain estimates and judgments that can affect the reported amounts of assets and liabilities as of the dates of the consolidated financial statements, the disclosure of contingencies as of the dates of the consolidated financial statements, and the reported amounts of revenue and expenses during the periods presented. Although we believe that our estimates and judgments are reasonable under the circumstances existing at the time these estimates and judgments are made, actual results may differ from those estimates, which could affect our consolidated financial statements.

We believe the following to be critical accounting policies because they are important to the portrayal of our financial condition or results of operations and they require critical management estimates and judgments about matters that are uncertain:

- revenue recognition;
- prepaid or guaranteed licensor royalties;
- business combinations – purchase accounting;
- goodwill; and

Table of Contents

- stock-based compensation.

Revenue Recognition

We generate revenue through in-app purchases within our games on smartphones and tablets, such as Apple's iPhone and iPad and mobile devices utilizing Google's Android operating system. Smartphone and tablet games are distributed primarily through Digital Storefronts. We also have relationships with certain advertising service providers for advertisements within smartphone games and revenue from these advertising providers is generated through impressions, clickthroughs, banner ads and offers.

Users can download our free-to-play games within the Digital Storefronts and pay to acquire virtual currency which can be redeemed in the game for virtual goods. We sell both consumable and durable virtual goods and receive reports from the Digital Storefronts, which breakdown the various purchases made from our games over a given time period. We review these reports and determine on a per-item basis whether the purchase was a consumable virtual good or a durable virtual good. Consumable goods are items that can be purchased directly by the player through the Digital Storefront and are consumed at a predetermined time or otherwise have limitations on repeated use, while durable goods are items that remain in the game for as long as the player continues to play. Our revenue from consumable virtual goods has been insignificant. Revenue from durable virtual goods are generated through the purchase of virtual coins by users through a Digital Storefront. Players convert the virtual coins within the game to durable virtual goods such as furniture, clothes, players or other items to enhance their game-playing experience.

We adopted ASC 606 and its related amendments effective January 1, 2018 using a modified retrospective method. The reported results for 2018 reflect the application of ASC 606 guidance while the reported results for 2017 were prepared under the guidance of ASC 605, Revenue Recognition (ASC 605), which is also referred to herein as "legacy GAAP" or the "previous guidance". The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of our services and will provide financial statement readers with enhanced disclosures.

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised services. The amount of revenue recognized reflects the consideration we expect to receive in exchange for these services. A contract with a customer exists when (i) we enter into an enforceable contract with a customer that defines each party's rights regarding the services to be transferred and identifies the payment terms related to these services, (ii) the contract has commercial substance and, (iii) we determine that collection of substantially all consideration for services that are transferred is probable based on the customer's intent and ability to pay the promised consideration. We apply judgment in determining the customer's ability and intention to pay, which is based on a variety of factors including the customer's historical payment experience or, in the case of a new customer, published credit and financial information pertaining to the customer.

Micro-Transactions

We distribute our games for smartphones and tablets to the end customer through Digital Storefronts. Within these Digital Storefronts, users can download our free-to-play games and pay to acquire virtual currency which can be redeemed in the game for virtual goods. The initial download of the mobile game from the Digital Storefront does not create a contract under ASC 606 because of the lack of commercial substance; however, the separate election by the player to make an in-application purchase satisfies the criteria thus creating a contract under ASC 606. We have identified the following performance obligations in these contracts:

- (1) Ongoing game related services such as hosting of game play, storage of customer content, when and if available content updates, maintaining the virtual currency management engine, tracking gameplay statistics, matchmaking as it relates to multiple player gameplay, etc.
- (2) Obligation to the paying player to continue displaying and providing access to the purchased virtual goods within the game.

Table of Contents

Neither of these obligations are considered distinct since the actual mobile game and the related ongoing services are both required to purchase and benefit from the related virtual goods. As such, our performance obligations represent a single combined performance obligation which is to make the game and the ongoing game related services available to the players. The transaction price, which is the amount paid for virtual currency/goods by the player, is allocated entirely to this single combined performance obligation. We recognize revenue from in-application purchases of durable virtual currency/goods over the estimated average playing period of paying users. Our revenue from consumable virtual goods has been insignificant over the previous three years. Based on our analysis, the estimated weighted average useful life of a paying user ranges from four to eight months.

Advertisements and Offers

We have relationships with certain advertising service providers for advertisements within our mobile games. Revenue from these advertising service providers is generated through impressions, clickthroughs, offers and banner ads. Offers are the type of advertisements where the players are rewarded with virtual currency for completing specified actions, such as downloading another application, watching a short video, subscribing to a service or completing a survey. We have determined the advertising buyer to be our customer and displaying the advertisements within the mobile games is identified as the single performance obligation. Revenue from advertisements and offers are recognized at the point-in-time the advertisements are displayed in the game or the offer has been completed by the user as the customer simultaneously receives and consumes the benefits provided from these services.

Other Estimates and Judgments

We compute our estimated average playing period of paying users at least twice each year. We have examined the playing patterns of paying users across a representative sample of our games across various genres.

We use the “survival analysis” model to estimate the average playing period for paying users. This model provides for a singular approach to estimating the average playing period of paying users on a title by title basis for our diverse portfolio of games. It is a statistical model that analyzes time duration until one or more events happens and is commonly used in various industries for estimating lifespans. We believe this is an appropriate model to estimate the average playing period of paying users for our titles as this model statistically estimates the average playing period of each title by analyzing the historical behavior patterns of paying users.

This model requires the stratification of user data into active and inactive monetizing users on a per title basis. Active users are those who are active in the game for the past 30 days as of the evaluation date. The remaining users are considered inactive and deemed to have churned from the game. These users are treated mathematically differently in the model than those who are still active. A distribution curve is then fit to the user data to estimate the average playing period of paying users on a per title basis.

We have selected a threshold of 120 days from the commercial launch of a title as the minimum number of days of data required for this model. This threshold was deemed to be appropriate as we tested the model using lower thresholds which resulted in inconsistencies in the estimate of the average playing period of paying users. For new titles with less than 120 days of data that share similar attributes with an existing title and/or prequel titles, the average playing period is determined based on the average playing period of that existing title or prequel title, as applicable. For all other titles with less than 120 days of data, the average playing period is determined based on the average playing period of all other remaining existing titles.

While we believe our estimates to be reasonable based on available game player information, we may revise such estimates in the future if a titles' user characteristics change. Any adjustments arising from changes in the estimates of the average playing period for paying users would be applied to the current quarter and prospectively on the basis that such changes are caused by new information that indicates a change in user behavior patterns compared to historical titles. Any changes in our estimates of the useful life of virtual goods in a certain title may result in revenue being recognized on a basis different from prior periods' and may cause our operating results to fluctuate.

Table of Contents

Principal Agent Considerations

We evaluated our Digital Storefront and advertising service provider agreements under ASC 606 in order to determine if we are acting as the principal or as an agent when selling virtual items or advertisements within our games. We primarily use Digital Storefronts for distributing our smartphone games and for enabling players to purchase virtual items and advertising service providers to serve advertisements within our games. We evaluated the following factors to assess whether we control each specified good or service before that good or service is transferred to the customer:

- the party responsible for the fulfillment of the virtual items, game related services, or serving of advertisements;
- the party having the discretion to set pricing with the end-users; and
- the party having inventory risk before the specified good or service have been transferred to a customer.

Based on the evaluation of the above indicators, we determined that we have control of the services before they are transferred to the end-user. Thus, we are generally acting as a principal and are the primary obligor to end-users for games distributed through Digital Storefronts and advertisements served through our advertising service providers. Therefore, we recognize revenue related to these arrangements on a gross basis, when the necessary information about the gross amounts or platform fees charged, before any adjustments, are made available by the Digital Storefronts and advertising service providers. In situations where the price paid by the end-user of the advertising service provider is not known, we account for these transactions on a net basis.

Deferred Platform Commissions and Royalties

Digital Storefronts retain platform commissions and fees on each purchase made by the paying players through the Digital Storefront. We are also obligated to pay ongoing licensing fees in the form of royalties related to the games developed based on or significantly incorporating licensed brands, properties or other content, and our plans to incorporate additional licensed content in some of its own originally branded games. As revenue from sales to paying players through Digital Storefronts are deferred, the related direct and incremental platform commissions and fees as well as third-party royalties are also deferred on the consolidated balance sheets. The deferred platform commissions and royalties are recognized in the consolidated statements of operations in “Cost of revenue” in the period in which the related sales are recognized as revenue.

Prepaid or Guaranteed Licensor Royalties

Our royalty expenses consist of fees that we pay to content owners for the use of their brands, properties and other licensed content, including trademarks and copyrights, in the development of our games. Royalty-based obligations are either paid in advance and capitalized on the balance sheet as prepaid royalties or accrued as incurred and

subsequently paid. These royalty-based obligations are expensed to cost of revenue at the greater of the revenue derived from the relevant game multiplied by the applicable contractual rate or an effective royalty rate based on expected net product sales.

Our contracts with certain licensors include minimum guaranteed royalty payments, which are payable regardless of the ultimate volume of sales to end users, in accordance with ASC 440-10, Commitments, or ASC 440. When no significant performance remains with the licensor, we initially record each of these guarantees as an asset and as a liability at the contractual amount. We believe that the contractual amount represents the fair value of the liability. When significant performance remains with the licensor, we record royalty payments as an asset when actually paid and as a liability when incurred, rather than upon execution of the contract. The classification of minimum royalty payment obligations between long-term and short-term is determined based on the expected timing of recoupment of earned royalties calculated on projected revenue for the games that include content licensed from third parties.

Each quarter, we evaluate the realization of our prepaid and guaranteed royalties as well as any unrecognized guarantees not yet paid to determine amounts that we deem unlikely to be realized through product sales. We use estimates of undiscounted revenue and net margins to evaluate the future realization of prepaid royalties, license fees, and guarantees. This evaluation is performed at the title level and considers multiple factors, such as, the term of the agreement, forecasted demand, game life cycle status, game development plans, level of social media activity, and current

Table of Contents

and anticipated sales levels, as well as other qualitative factors such as the success of similar games and similar genres on mobile devices published by us and our competitors and/or other game platforms (e.g., consoles and personal computers) utilizing the intellectual property. To the extent that this evaluation indicates that the remaining prepaid and guaranteed royalty payments are not recoverable, we record an impairment charge to cost of revenue in the period that impairment is indicated.

Business Combinations

We apply ASC 805, Business Combinations, or ASC 805, which is the accounting guidance related to business combinations. The standard requires:

- recognition of assets acquired, liabilities assumed, and contingent consideration at their fair value on the acquisition date with subsequent changes recognized in earnings;
- acquisition-related expenses and restructuring costs to be recognized separately from the business combination and expensed as incurred;
- in-process research and development to be capitalized at fair value as an indefinite-lived intangible asset until completion or abandonment; and
- that changes in accounting for deferred tax asset valuation allowances and acquired income tax uncertainties after the measurement period be recognized as a component of provision for taxes.

We account for acquisitions of entities that include inputs and processes and have the ability to create outputs as business combinations. The purchase price of the acquisition is allocated to tangible assets, liabilities, and identifiable intangible assets acquired based on their estimated fair values. The excess of the purchase price over those fair values is recorded as goodwill. Acquisition-related expenses and restructuring costs are expensed as incurred. While we use our best estimates and assumptions as a part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the business combination date, these estimates and assumptions are inherently uncertain and subject to refinement. Our key assumptions used have included projected revenue, cost of goods sold, and operating expenses for our acquired entities, the future amortization tax benefit of legacy titles, and discount rates. As a result, during the preliminary purchase price allocation period, which may be up to one year from the business combination date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. After the preliminary purchase price allocation period, we record adjustments to assets acquired or liabilities assumed subsequent to the purchase price allocation period in our operating results in the period in which the adjustments were determined.

Goodwill

In accordance with ASC 350, Intangibles – Goodwill and Other, or ASC 350, we do not amortize goodwill or other intangible assets with indefinite lives but rather test them for impairment. We perform our annual impairment test as of September 30th each year, at the reporting unit level, which is at the company level as a whole, since we operate in a single reporting segment. We also perform an evaluation of impairment whenever events or changes in

circumstances indicate that the carrying amount of these assets may not be recoverable.

We evaluate qualitative factors and overall financial performance to determine whether it is necessary to perform the first step of the two-step goodwill test. This step is referred to as “Step 0.” Step 0 involves, among other qualitative factors, weighing the relative impact of factors that are specific to the reporting unit as well as industry and macroeconomic factors. After assessing those various factors, if it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, then the entity will need to proceed to the first step of the two-step goodwill impairment test. ASC 350 requires a multiple-step approach to testing goodwill for impairment for each reporting unit annually, or whenever events or changes in circumstances indicate the fair value of a reporting unit is below its carrying amount. The first step measures for impairment by applying the fair value-based tests at the reporting unit level. The second step (if necessary) measures the amount of impairment by applying the fair value-based tests to individual assets and liabilities within each reporting unit. The fair value of the reporting units is estimated using a combination of the market approach, which utilizes comparable companies’ data, and/or the income approach, which uses discounted cash flows.

Table of Contents

During the third quarters of fiscal 2018 and 2017 we performed a “Step 0” qualitative assessment for our reporting unit. Based on the assessment, we concluded that it was more likely than not that the fair value of the reporting unit was greater than its carrying amount, and as a result, did not proceed to further impairment testing. Accordingly, we did not recognize an impairment of goodwill during the years ended December 31, 2018 and December 31, 2017.

During the three months ended December 31, 2017, we recorded a prepaid royalty impairment charge of \$26.1 million. However, our market capitalization remained well above our carrying value during that period. Based on the results of the interim goodwill impairment test, as of December 31, 2017, we concluded that goodwill was not impaired.

We performed our annual goodwill impairment assessment as of September 30, 2016 and determined a Step 1 analysis was necessary due to a significant decline in our market capitalization and the significant impairment of prepaid royalties recorded during the three months ended September 30, 2016. Based on the results of the Step 1 analysis, we concluded that the fair value of the reporting unit was greater than the carrying value of the reporting unit based on a methodology that utilized both an income approach and a market approach. The income approach was based on projected future (debt-free) cash flows that were discounted to present value. For the market approach, we used both the guideline company and similar transaction methods. The guideline company method analyzed market multiples of bookings for a group of comparable public companies. Under the similar transactions method, valuation multiples were calculated utilizing actual transaction prices and revenue/EBITDA data from target companies deemed similar to us. The revenue and profitability forecasts used in valuation considered recent performance and trends, strategic initiatives and relevant industry trends. Assumptions used in the valuation were similar to those that would be used by market participants performing independent valuations of similar businesses.

Key assumptions used in the quantitative analysis included:

- 4% long-term revenue growth rate and the Gordon Growth model to calculate the terminal value;
- A gradual return to historical profitability rates over the remaining forecast period;
- Royalty rates based on active license agreements of the brand; and
- A market-based discount rate of 12% which takes into consideration the characteristics of relevant peer companies, market observable data, and company-specific risk factors.

Any material impairment of prepaid royalty and license fee assets in the future periods may require us to perform a goodwill impairment assessment. Such assessment could result in impairments to our goodwill, which could adversely impact our results of operations.

Stock-Based Compensation

We apply the fair value provisions of ASC 718, Compensation-Stock Compensation (“ASC 718”). ASC 718 requires the recognition of compensation expense, using a fair-value based method, for costs related to all share-based payments including stock options, restricted stock units (“RSUs”), performance-based stock units (“PSUs”), and performance-based stock options (“PSOs”). The number of PSUs and PSOs earned and eligible to vest will be determined based on achievement of specified financial performance measures. ASC 718 requires companies to estimate the fair value of stock-option awards on the grant date using an option pricing model. The fair value of stock options and PSOs and stock purchase rights granted pursuant to our equity incentive plans and 2007 Employee Stock Purchase Plan (“ESPP”), respectively, is determined using the Black-Scholes valuation model. The determination of fair value is affected by the stock price, as well as assumptions regarding subjective variables such as expected employee exercise behavior and expected stock price volatility over the expected term of the award. Generally, these assumptions are based on historical information and judgment is required to determine if historical trends may be indicators of future outcomes.

Effective January 1, 2017 we no longer estimate forfeitures but account for them as and when they occur. Changes to the assumptions used in the Black-Scholes option valuation calculation, as well as future equity granted or assumed through acquisitions could significantly impact the compensation expense we recognize. The cost of RSUs and PSUs is

Table of Contents

determined using the fair value of the common stock based on the quoted closing price of our common stock on the date of grant. Compensation cost for stock options and RSUs is amortized ratably over the requisite service period. For performance-based awards that have multiple vesting dates, the compensation cost is recognized ratably over the requisite service period for each tranche, whereby each vesting tranche is treated as a separate award for determining the requisite service period. The compensation cost for performance-based awards may be adjusted over the vesting period based on interim estimates of performance against the pre-set financial performance measures.

Results of Operations

The following sections discuss and analyze the changes in the significant line items in our statements of operations for the comparison periods identified.

Comparison of the Years Ended December 31, 2018 and 2017

Revenue

Revenue by Type	Year Ended December 31,	
	2018	2017
	(In thousands)	
Micro-Transactions	\$ 316,157	\$ 244,314
Advertisements and Offers	50,121	41,154
Other	283	1,359
Total revenue	\$ 366,561	\$ 286,827

Our revenue increased \$79.7 million, or 27.8%, from \$286.8 million for the year ended December 31, 2017 to \$366.6 million for the year ended December 31, 2018, which was primarily related to a \$71.8 million increase in our revenue from micro-transactions (in-app purchases) and a \$9.0 million increase in our revenues from advertisements and offers. The increase in revenue was primarily related to Design Home, Covet Fashion, the Tap Sports Baseball franchise, and Kim Kardashian: Hollywood. Revenue from these titles increased by \$122.1 million during the year ended December 31, 2018 compared to the year ended December 31, 2017. These increases were partially offset by a \$35.5 million aggregate decline in revenue from catalog titles such as Restaurant Dash with Gordon Ramsay, Deer Hunter 2018 (originally launched as Deer Hunter 2016), Deer Hunter Classic, Cooking Dash 2016, Kendall & Kylie, Contract Killer Sniper and Racing Rivals.

In 2018, Design Home, the Tap Sports Baseball franchise, and Covet Fashion were our top three revenue-generating games and comprised 39.7%, 18.9% and 13.4%, respectively, of our revenue for the period. In 2017, Design Home, the Tap Sports Baseball franchise and Covet Fashion were our top three revenue-generating games and comprised 24.9%, 14.7% and 12.4%, respectively, of our revenue for the period. No other game generated more than 10% of revenue during the period.

International revenue (defined as revenue generated from distributors and advertising service providers whose principal operations are located outside the United States or, in the case of the Digital Storefronts, the revenue generated from end-user purchases made outside of the United States) increased by \$15.9 million, from \$70.4 million in the year ended December 31, 2017 to \$86.3 million in the year ended December 31, 2018. This was primarily related to an \$8.4 million increase in our EMEA revenue, a \$5.9 million increase in our revenue from Americas, excluding the United States, and a \$1.6 million increase in our APAC revenue. These increases were primarily related to increased revenue from our growth titles.

Table of Contents

Cost of Revenue

	Year Ended December 31,	
	2018	2017
	(In thousands)	
Cost of revenue:		
Platform commissions, royalties and other	\$ 128,445	\$ 103,499
Impairment of prepaid royalties and minimum guarantees	711	27,323
Impairment and amortization of intangible assets	9,119	10,331
Total cost of revenue	\$ 138,275	\$ 141,153
Revenue	\$ 366,561	\$ 286,827
Gross margin	62.3	% 50.8

Our cost of revenue decreased by \$2.9 million, or 2.0%, from \$141.2 million in the year ended December 31, 2017 to \$138.3 million in the year ended December 31, 2018. This decrease was primarily due to a \$26.6 million decrease in impairment charges related to certain of our celebrity licensors and other prepaid royalties, a \$1.2 million decrease in impairment and amortization of intangible assets and a \$1.0 million decrease in hosting costs. These decreases were partially offset by a \$21.6 million increase in platform commission fees due to a higher volume of revenue transactions through the Digital Storefronts and a \$4.1 million increase in royalties associated with an increase in royalty-burdened revenue.

The royalties we paid to licensors increased by \$4.1 million, or 19.3%, from \$21.3 million in the year ended December 31, 2017 to \$25.4 million in the year ended December 31, 2018. The increase was due to the growth in revenue from royalty burdened titles. However, the rate of increase of our royalty payments was lower than the increase in our revenue of 27.8% from \$286.8 million in the year ended December 31, 2017 to \$366.6 million in the year ended December 31, 2018. This was due to a larger percentage of our revenue being attributable to titles, such as Design Home and Covet Fashion, that are not royalty burdened.

	Year Ended	
	December 31,	2017
	2018	
	(In thousands)	
Research and development expenses	\$ 94,934	\$ 92,420
Percentage of revenue	25.9	% 32.2

Our research and development expenses increased \$2.5 million, or 2.7%, from \$92.4 million in the year ended December 31, 2017 to \$94.9 million in the year ended December 31, 2018. This was primarily attributable to an increase in stock compensation expense of \$6.3 million, an increase of \$2.1 million in allocated charges for equipment, facilities and depreciation, an increase of \$933,000 in tax expense due to a tax credit we received related to research and development activities for one of our foreign subsidiaries in the year ended December 31, 2017 and an increase of \$662,000 in professional fees. The increase in stock based compensation was primarily related to performance-based equity awards granted to our executives, creative leaders and certain employees, and acceleration of equity awards in connection with the transition services provided by certain former employees of our Moscow studio that we divested in December 2017. These increases were partially offset by a \$4.8 million decrease in payroll related costs and a \$2.7 million decrease in outside services mainly due to lower external development costs and server expenses. The decrease in payroll related costs was mainly due to performance-based equity awards issued to executives and creative leaders in lieu of cash bonuses, divestiture of our Moscow studio, and higher severance and bonus costs incurred during the year ended December 31, 2017 in relation to our acquisition of Crowdstar. As a percentage of revenue, research and development expenses decreased from 32.2% in the year ended December 31, 2017 to 25.9% in the year ended December 31, 2018. We expect our research and development expenditures to increase in 2019 primarily due to an increase in headcount.

Table of Contents

	Year Ended December 31,			
	2018		2017	
	(In thousands)			
Sales and marketing expenses	\$ 113,860		\$ 104,356	
Percentage of revenue	31.1	%	36.4	%

Our sales and marketing expenses increased \$9.5 million, or 9.1%, from \$104.4 million in the year ended December 31, 2017 to \$113.9 million in the year ended December 31, 2018. This was primarily attributable to an increase of \$7.0 million in user acquisition and other marketing expenditures on Design Home, Covet Fashion, MLB Tap Sports Baseball 2018 and Kim Kardashian: Hollywood, partially offset by lower user acquisition expenditures on our other titles, an increase in stock compensation expense of \$1.5 million primarily related to performance-based equity awards granted to our executives and certain employees, and a \$1.5 million increase in allocated charges for equipment, facilities and depreciation. These increases were partially offset by a \$644,000 decrease in payroll related costs mainly related to performance-based equity awards issued to executives in lieu of cash bonuses, and higher bonus costs incurred during the year ended December 31, 2017 in relation to our acquisition of Crowdstar. As a percentage of revenue, sales and marketing expenses decreased from 36.4% in the year ended December 31, 2017 to 31.1% in the year ended December 31, 2018. We expect our sales and marketing expenses to increase in 2019 primarily due to higher user acquisition expenditures, including related to the launch of WWE Universe, Diner DASH Adventures and Disney Sorcerer's Arena during 2019.

General and Administrative Expenses

	Year Ended			
	December 31,			
	2018		2017	
	(In thousands)			
General and administrative expenses	\$ 31,667		\$ 34,425	
Percentage of revenue	8.6	%	12.0	%

Our general and administrative expenses decreased \$2.8 million, or 8.0%, from \$34.4 million in the year ended December 31, 2017 to \$31.7 million in the year ended December 31, 2018. This was primarily attributable to a \$2.6 million decrease in payroll related costs, a \$1.7 million decrease in allocated charges for equipment, facilities and depreciation and a \$613,000 decrease in professional fees mainly due to lower accounting and consulting costs in the year ended December 31, 2018 partially offset by higher legal expenses incurred for the lawsuit filed against us by the former CEO of Crowdstar in connection with our acquisition of Crowdstar. The decrease in payroll related costs was mainly due to performance-based awards issued to executives in lieu of cash bonuses, turnover of some senior level employees during the year ended December 31, 2018 and higher bonus and severance costs incurred during the year ended December 31, 2017 in relation to our acquisition of Crowdstar. These decreases were partially offset by an

increase of \$1.7 million in stock-based compensation expense primarily related to performance-based equity awards granted to our executives. As a percentage of revenue, general and administrative expenses decreased from 12.0% in the year ended December 31, 2017 to 8.6% in the year ended December 31, 2018. We expect our general and administrative expenses to increase slightly in 2019 as compared to 2018.

Restructuring Charges

During the year ended December 31, 2018, we recorded \$240,000 of restructuring charges related to certain employee termination costs and lease termination costs in our Long Beach, California office. During the year ended December 31, 2017, we recorded \$6.0 million of restructuring charges related to employee termination and lease termination costs in our Bellevue, Washington, Long Beach, California, San Francisco, California, Portland, Oregon, and Beijing, China, offices.

Interest and Other Expense, Net

Interest and other expense, net during the year ended December 31, 2018 was \$235,000, which primarily consisted of an expense of \$581,000 of currency losses for the revaluation of certain account balances including accounts receivable

Table of Contents

and an expense of \$160,000 related to amortization of transition service assets in connection with transitioning of certain legacy titles from our Moscow studio to our Hyderabad studio. These charges were offset by income of \$505,000 primarily attributable to interest from our money market investment accounts. Interest and other expense, net during the year ended December 31, 2017 was \$6.9 million, and was primarily attributable to a \$6.5 million loss related to the sale of our Moscow game development studio.

Income Tax Benefit/(Provision)

Our income tax benefit changed from \$826,000 in 2017 to an income tax expense of \$549,000 in 2018. The income tax expense in 2018 was mainly due to changes in pre-tax income in the United States and certain foreign entities. The provision for income taxes differs from the amount computed by applying the statutory U.S. federal rate principally due to the effect of our non-U.S. operations, non-deductible stock-based compensation expense, and change in foreign withholding taxes.

Our effective income tax rates for future periods will depend on a variety of factors, including changes in the deferred tax valuation allowance, as well as changes in our business such as intercompany transactions, any acquisitions, any changes in our international structure, any changes in the geographic location of our business functions or assets, changes in the geographic mix of our income, any changes in or termination of our agreements with tax authorities, changes in applicable accounting rules, applicable tax laws and regulations, rulings and interpretations thereof, developments in tax audit and other matters, and variations in our annual pre-tax income or loss. We incur certain tax expenses that do not decline proportionately with declines in our pre-tax consolidated income or loss. As a result, in absolute dollar terms, our tax expense will have a greater influence on our effective tax rate at lower levels of pre-tax income or loss than at higher levels. In addition, at lower levels of pre-tax income or loss, our effective tax rate will be more volatile.

Comparison of the Years Ended December 31, 2017 and 2016

Revenue

	Year Ended December 31,	
	2017	2016
	(In thousands)	
Revenue by Type		
Micro-Transactions	\$ 244,314	\$ 164,569
Advertisements and Offers	41,154	33,738
Other	1,359	2,274

Total revenue	\$ 286,827	\$ 200,581
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Our revenue increased \$86.2 million, or 43.0%, from \$200.6 million for the year ended December 31, 2016 to \$286.8 million for the year ended December 31, 2017, which was primarily related to a \$79.7 million increase in our revenue from micro-transactions (in-app purchases) and a \$7.4 million increase from advertisements and offers. These increases in revenues were primarily related to new title launches such as the releases of Design Home in November 2016, MLB Tap Sports Baseball 2017 in March 2017 and Restaurant Dash with Gordon Ramsay in June 2016, as well as the addition of Covet Fashion through our acquisition of Crowdstar in the fourth quarter of 2016. Revenues from our Crowdstar titles, Design Home and Covet Fashion, increased by \$106.6 million during the year ended December 31, 2017 compared to the prior year given that we both acquired Crowdstar and initially launched Design Home in November 2016. These increases were partially offset by a \$49.6 million aggregate decline in revenue from Tap Sports Baseball 2016, Kendall and Kylie, Racing Rivals, Kim Kardashian: Hollywood, and Cooking Dash.

In 2017, Design Home, MLB Tap Sports Baseball franchise and Covet Fashion were our top three revenue-generating games and comprised 24.9%, 14.7% and 12.4%, respectively, of our revenue for the period. In 2016, Kim Kardashian: Hollywood, Cooking Dash, Tap Sports Baseball franchise and Racing Rivals were our top four revenue-generating games and comprised 17.8% , 15.7%, 13.1% and 11.7%, respectively, of revenue for the year. No other game generated more than 10% of revenue during either year.

Table of Contents

International revenue increased by \$18.8 million, from \$51.6 million in the year ended December 31, 2016 to \$70.4 million in the year ended December 31, 2017. This was primarily related to an \$8.9 million increase in our EMEA revenue, a \$6.8 million increase in our revenue from Americas, excluding the United States, and a \$3.1 million increase in our APAC revenue. These increases were primarily related to increased revenue from new title launches.

Cost of Revenue

	Year Ended December 31,	
	2017	2016
	(In thousands)	
Cost of revenue:		
Platform commissions, royalties and other	\$ 103,499	\$ 75,239
Impairment of prepaid royalties and minimum guarantees	27,323	30,107
Impairment and amortization of intangible assets	10,331	14,792
Total cost of revenue	\$ 141,153	\$ 120,138
Revenue	\$ 286,827	\$ 200,581
Gross margin	50.8 %	40.1 %

Our cost of revenue increased by \$21.0 million, or 17.5%, from \$120.1 million in the year ended December 31, 2016 to \$141.2 million in the year ended December 31, 2017. This increase was primarily due to a \$24.3 million increase in platform commission fees due to a higher volume of revenue transactions through the Digital Storefronts and a \$2.5 million increase in royalties associated with an increase in royalty-burdened revenue. This increase was partially offset by a \$4.5 million decrease in amortization of intangible assets and a \$2.8 million decrease in impairment charges related to certain of our celebrity licensors and other prepaid royalties during 2017.

The royalties we paid to licensors increased by \$2.5 million, or 13.3%, from \$18.8 million in the year ended December 31, 2016 to \$21.3 million in the year ended December 31, 2017. The rate of increase of our royalty payments was lower than the increase in our revenue of 43.0% from \$200.5 million in December 31, 2016 to \$286.8 million in December 31, 2017. This was mainly due to the fact that revenue attributable to games based upon original intellectual property increased as a percentage of revenue from 39.7% in the year ended December 31, 2016 to 59.1% in the year ended December 31, 2017. This increase was primarily due to the release of original intellectual property Design Home in November 2016 and the addition of Covet Fashion through our acquisition of Crowdstar. Also, the average royalty rate that we paid on games based on licensed intellectual property, excluding royalty impairments, decreased from 21.9% in the year ended December 31, 2016 to 18.2% in the year ended December 31, 2017. Overall royalties, including impairment of prepaid royalties and guarantees, as a percentage of total revenue decreased from 25.0% in the year ended December 31, 2016 to 17.0% in the year ended December 31, 2017 due to lower royalty impairments in the year ended December 31, 2017 as well as a larger percentage of our revenue being attributable to titles that are not royalty burdened.

Research and Development Expenses

	Year Ended December 31,	
	2017	2016
	(In thousands)	
Research and development expenses	\$ 92,420	\$ 81,879
Percentage of revenue	32.2 %	40.8 %

Our research and development expenses increased \$10.5 million or 12.9%, from \$81.9 million in the year ended December 31, 2016 to \$92.4 million in the year ended December 31, 2017. The increase in research and development costs was primarily due to a \$7.4 million increase in payroll and other compensation costs mainly related to our acquisition of Crowdstar, partially offset by reduction in force measures implemented during the year ended December 31, 2017, and a \$3.4 million increase in outside services primarily related to external development. As a percentage of revenue, research and development expenses decreased from 40.8% in the year ended December 31, 2016 to 32.2% in the year ended December 31, 2017.

Table of Contents

Sales and Marketing Expenses

	Year Ended December 31,			
	2017		2016	
	(In thousands)			
Sales and marketing expenses	\$	104,356	\$	48,050
Percentage of revenue		36.4	%	24.0 %

Our sales and marketing expenses increased \$56.3 million, or 117.2%, from \$48.1 million in the year ended December 31, 2016 to \$104.4 million in the year ended December 31, 2017. This was primarily attributable to an increase of \$51.2 million in user acquisition expenditures primarily related to Design Home, a \$3.9 million increase in payroll and other compensation costs primarily related to our acquisition of Crowdstar and an \$800,000 increase in allocated charges for equipment, facilities, and depreciation. As a percentage of revenue, sales and marketing expenses increased from 24.0% in the year ended December 31, 2016 to 36.4% in the year ended December 31, 2017.

General and Administrative Expenses

	Year Ended December 31,			
	2017		2016	
	(In thousands)			
General and administrative expenses	\$	34,425	\$	30,225
Percentage of revenue		12.0	%	15.1 %

Our general and administrative expenses increased \$4.2 million, or 13.9%, from \$30.2 million in the year ended December 31, 2016 to \$34.4 million in the year ended December 31, 2017. The increase in general and administrative expenses was primarily due to a \$2.8 million increase in payroll and other compensation costs primarily related to our acquisition of Crowdstar and increase in variable compensation and a \$1.6 million increase in professional services fees. As a percentage of revenue, general and administrative expenses decreased from 15.1% in the year ended December 31, 2016 to 12.0% in the year ended December 31, 2017.

Restructuring Charges

We incurred a restructuring charge of \$6.0 million in the year ended December 31, 2017 related to employee and lease termination costs in our Bellevue, Washington; Long Beach, California; San Francisco, California; Portland, Oregon; and Beijing, China offices. We incurred a restructuring charge of \$2.3 million in the year ended December 31, 2016, primarily due to costs associated with employee terminations in our Long Beach, San Francisco, Bellevue, and Beijing, China offices, and lease termination costs for our Bellevue and Beijing, China offices, in the year ended December 31, 2016.

Interest and Other Expense, Net

Interest and other expense, net during the year ended December 31, 2017 was \$6.9 million, and was primarily attributable to a \$6.5 million loss related to sale of our Moscow game development studio. Interest and other expense, net during the year ended December 31, 2016 was \$5.8 million, and was primarily attributable to a \$2.4 million impairment charge related to our call option for Plain Vanilla, which impairment charge was due to a decline in Plain Vanilla's forecasted revenue and future cash flow outlook, a \$1.9 million charge related to the change in fair value of our investment in promissory notes issued to us by Plain Vanilla, and an \$838,000 charge related to the write-off of a cumulative translation adjustment upon liquidation of one of our United Kingdom subsidiaries.

Income Tax Benefit/(Provision)

Our income tax benefit increased from \$301,000 in 2016 to \$826,000 in 2017. The income tax benefit in 2017 was due to the release of income tax reserves in relation to winding down a foreign subsidiary, the release of a portion of our valuation allowance of \$294,000 resulting from the acquisition of Dairy Free Games Inc. in August 2017, and changes in pre-tax income in the United States and certain foreign entities. The provision for income taxes differs from the amount

Table of Contents

computed by applying the statutory U.S. federal rate principally due to the effect of our non-U.S. operations, non-deductible stock-based compensation expense, and change in foreign withholding taxes.

Liquidity and Capital Resources

	Year Ended December 31,		
	2018	2017	2016
	(In thousands)		
Consolidated Statement of Cash Flows Data:			
Cash flows generated from / (used in) operating activities	32,286	(28,236)	(19,784)
Cash flows used in investing activities	(636)	(14,413)	(51,730)
Cash flows generated from / (used in) financing activities	2,181	3,763	(6,785)

Since our inception, we have generally incurred recurring losses and negative annual cash flows from operating activities. As of December 31, 2018, we had an accumulated deficit of \$440.5 million.

Operating Activities

In 2018, net cash generated from operating activities was \$32.3 million, which was primarily due to an increase in deferred revenue of \$17.9 million mainly attributable to an increase in revenue from titles with longer useful lives, a \$7.0 million decrease in accounts receivable due to the timing of payments from our customers, a \$1.3 million decrease in other prepaid expenses and other assets and adjustments for non-cash items including stock based compensation expense of \$24.6 million, amortization and impairment of intangible assets of \$9.1 million, depreciation of \$3.9 million and warrant expense of \$1.0 million. These changes were partially offset by \$13.2 million of net loss, a \$10.2 million decrease in accounts payable and other accrued liabilities mainly due to the timing of payments to our vendors, a \$5.4 million increase in deferred platform commission fees attributable to higher bookings, a \$2.7 million decrease in accrued compensation, a \$1.8 million increase in prepaid and deferred royalties and a \$947,000 decrease in accrued royalties.

In 2017, net cash used in operating activities was \$28.2 million, which was primarily due to a \$97.6 million net loss, an \$18.9 million increase in prepaid royalties, an \$8.9 million increase in deferred platform commission fees, a \$4.2 million increase in prepaid expenses and other assets, a \$1.1 million increase in deferred royalties, and a \$13.1 million increase in accounts receivable due to the timing of payments from our customers. These amounts were partially offset by a \$32.5 million increase in deferred revenue mainly attributable to an increase in revenue from titles with longer useful lives, an increase in accrued compensation of \$8.1 million, a \$4.7 million increase in accounts payable and other accrued liabilities, a \$4.1 million increase in accrued royalties, a \$4.0 million increase in non-current liabilities, and a \$488,000 increase in accrued restructuring. Adjustments for non-cash items included a \$27.3 million

impairment of prepaid royalties and minimum guarantees, stock-based compensation expense of \$15.1 million, \$10.3 million of amortization of intangible assets, net loss from the sale of a foreign subsidiary of \$6.5 million, and depreciation expense of \$3.2 million.

In 2016, net cash used in operating activities was \$19.8 million, which was primarily due to an \$87.4 million net loss, a \$16.7 million increase in prepaid royalties and a \$3.9 million increase in deferred platform commission fees. These amounts were partially offset by a \$12.3 million increase in deferred revenue, an increase in accrued compensation of \$4.6 million, a \$3.2 million increase in accounts payable and other accrued liabilities, and a \$2.2 million decrease in other prepaids and other assets. Adjustments for non-cash items included a \$30.1 million impairment of prepaid royalties and minimum guarantees, a \$14.8 million impairment and amortization of intangible assets, stock-based compensation expense of \$13.3 million, impairment of the Plain Vanilla call option of \$2.4 million, a \$1.9 million decrease in fair value of the Plain Vanilla promissory notes, and depreciation expense of \$2.9 million.

Investing Activities

Our primary investing activities have consisted of acquisitions of mobile gaming companies and purchases of property and equipment and leasehold improvements for our offices.

In 2018, we used \$636,000 of cash for investing activities primarily related to property and equipment purchases of \$3.4 million partially offset by proceeds of \$2.7 million from the divestiture of our Moscow studio.

Table of Contents

In 2017, we used \$14.4 million of cash for investing activities primarily related to property and equipment purchases of \$11.3 million which mainly comprised of leasehold improvements for our new San Francisco headquarters, \$1.7 million net cash paid for acquisitions, and other investing activities of \$1.4 million.

In 2016, we used \$51.8 million of cash for investing activities primarily related to net cash paid of \$36.7 million for the acquisition of 80.6% of the outstanding voting interest in Crowdstar, investments in Plain Vanilla and Dairy Free of \$9.5 million in the aggregate, purchases of intangible assets of \$2.5 million, and property and equipment purchases of \$3.1 million.

Financing Activities

In 2018, net cash generated from financing activities was \$2.2 million which was primarily due to \$9.3 million in proceeds received from option exercises and purchases under our employee stock purchase plan. These cash inflows were partially offset by \$7.1 million of taxes paid related to net share settlement of RSUs.

In 2017, net cash generated from financing activities was \$3.8 million, which was due primarily to \$4.1 million in proceeds received from option exercises and purchases under our employee stock purchase plan and \$3.0 million of proceeds received from the exercise of warrants. These inflows were partially offset by \$3.4 million of taxes paid related to net share settlement of RSUs.

In 2016, net cash used in financing activities was \$6.8 million due primarily to \$4.7 million paid to acquire the remaining outstanding interest in Crowdstar, \$2.4 million of taxes paid related to the net share settlement of RSUs, and \$1.9 million related to payments on an acquired line of credit and term loan from the Crowdstar acquisition. These outflows were partially offset by \$2.2 million in proceeds we received from option exercises and purchases under our employee stock purchase plan.

Sufficiency of Current Cash and Cash Equivalents

Our cash and cash equivalents were \$97.8 million as of December 31, 2018. Cash and cash equivalents held outside of the U.S. in various foreign subsidiaries were \$1.7 million as of December 31, 2018, most of which were held by our Canadian and Indian subsidiaries. Under current tax laws and regulations, if cash and cash equivalents held outside the U.S. are distributed to the U.S. in the form of dividends or otherwise, we may be subject to additional U.S. income taxes and foreign withholding taxes. We have not provided deferred taxes on unremitted earnings attributable to foreign subsidiaries, excluding China, because their earnings are intended to be reinvested indefinitely. However, if any such balances were to be repatriated, additional U.S. federal income tax payments could result. Computation of

the potential deferred tax liabilities associated with unremitted earnings deemed to be indefinitely reinvested is not practicable.

We expect to fund our operations, grow our business and satisfy our contractual obligations during the next 12 months primarily through our cash and cash equivalents and cash generated by our operations. We believe our cash and cash equivalents and cash generated by our operations will be sufficient to meet our anticipated cash needs for at least the next 12 months from the date of this report; however, our cash requirements for the next 12 months may be greater than we anticipate due to, among other reasons, revenue that is lower than we currently anticipate, greater than expected operating expenses, particularly with respect to our research and development and sales and marketing initiatives, use of cash to pay minimum guaranteed royalties, use of cash to fund our foreign operations and the impact of foreign currency rate changes, unanticipated limitations or timing restrictions on our ability to access funds that are held in our non-U.S. subsidiaries or any investments or acquisitions that we may decide to pursue. We expect to continue to use cash to fund minimum guaranteed royalty payments during 2019 as milestone payments become due on games we publish and/or develop that incorporate licensed property, as well as to fund the purchase price of any acquisitions. If the games we develop based on such licensing arrangements fail to perform in accordance with our expectations, we may not fully recoup these minimum guaranteed royalty payments.

If our cash sources are insufficient to satisfy our cash requirements, we may seek to raise additional capital. However, we may be unable to do so on terms that are favorable to us or at all.

Table of Contents

Contractual Obligations

The following table is a summary of our contractual obligations as of December 31, 2018:

	Payments Due by Period from December 31, 2018				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(In thousands)				
Operating lease obligations	\$ 44,845	\$ 5,486	\$ 9,828	\$ 9,412	\$ 20,119
Guaranteed royalties (1)	7,304	5,004	2,300	—	—
Total contractual obligations (2)	\$ 52,149	\$ 10,490	\$ 12,128	\$ 9,412	\$ 20,119

- (1) We have entered into license and publishing agreements with various celebrities and other owners of brands, properties and other content to develop and publish games and other software applications for mobile devices. These agreements typically require us to make non-refundable, but recoupable payments of minimum guaranteed royalties or license fees as up-front payments or over the term of the agreement.
- (2) We have omitted uncertain income tax liabilities from this table due to the inherent uncertainty regarding the timing of potential issue resolution. Specifically, either the underlying positions have not been fully developed enough under audit to quantify at this time or the years relating to the issues for certain jurisdictions are not currently under audit. At December 31, 2018, we had \$334,000 of gross unrecognized tax benefits, included in "Other long-term Liabilities" in the consolidated balance sheet.

Off-Balance Sheet Arrangements

At December 31, 2018, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K, that are not already disclosed in this report.

Inflation

We do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we might not be able to fully offset these higher costs through price increases. Our inability or failure to do so could harm our business, operating results and financial condition.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued ASU 2014-09, Revenue from Contracts with Customers (Topic 606). We adopted ASU 2014-09 and its related amendments effective on January 1, 2018 using the modified retrospective method. See Note 5 "Revenue from Contracts with Customers" for the required disclosures related to the impact of adopting this standard and a discussion of our updated policies related to revenue recognition.

In May 2017, the FASB issued ASU 2017-09, Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting, which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. It is effective prospectively for the annual period ending December 31, 2018 and interim periods within that annual period. We adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on our consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash, which requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown in the statement of cash flows. We adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material

Table of Contents

impact on our consolidated financial statements. Please see Reclassifications under Note 1 of Notes to Consolidated Financial Statements.

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. ASU No. 2016-16 requires that an entity recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017. We adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on our consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. ASU No. 2016-15 addresses eight specific cash flow issues with the objective of reducing existing diversity in practice. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017. We adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on our consolidated financial statements.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments - Overall - Recognition and Measurement of Financial Assets and Financial Liabilities. The guidance requires entities to measure equity investments that do not result in consolidation and are not accounted for under the equity method at fair value and recognize any changes in fair value in net income unless the investments qualify for a practicability exception. The updated standard is effective for interim and annual reporting periods beginning after December 15, 2017. We adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on our consolidated financial statements.

In March 2018, the FASB issued ASU 2018-05, Income Taxes (Topic 740), Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118. The ASU adds various SEC paragraphs pursuant to the issuance of the December 2017 SEC Staff Accounting Bulletin No. 118, Income Tax Accounting implications of the Tax Cuts and Jobs Act (“SAB 118”), which was effective immediately. The SEC issued SAB 118 to address concerns about reporting entities’ ability to timely comply with the accounting requirements to recognize all of the effects of the Tax Cuts and Jobs Act in the period of enactment. The guidance specifies that, for income tax effects of the Tax Cuts and Jobs Act that can be reasonably estimated but for which the accounting and measurement period is not yet complete, entities should report provisional amounts in the reporting period that includes the enactment date and those provisional amounts can be adjusted for a measurement analysis not to exceed one year from the enactment date. We have accounted for the tax effects of the Tax Cuts and Jobs Act under the guidance of SAB 118, on a provisional basis, in our consolidated financial statements for the year ended December 31, 2017. Immaterial adjustments made to the provisional amounts allowed under SAB 118 were identified and recorded as discrete adjustments during the year ended December 31, 2018. Our accounting was completed in the fourth quarter of 2018.

Recently Issued Accounting Pronouncements Not Yet Adopted

In January 2017, the FASB issued ASU No. 2017-04, Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. This new accounting standard update simplifies the measurement of goodwill by eliminating the Step 2 impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The new guidance requires an entity to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. The new guidance becomes effective for goodwill impairment tests in fiscal years beginning after December 15, 2019, though early adoption is permitted. We are currently assessing the impact of this new guidance.

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805), which clarifies the definition of a business to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard will be effective in the first quarter of fiscal 2019. Early adoption is permitted. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

Table of Contents

In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The standard provides financial statement preparers with an option to reclassify stranded tax effects within Accumulated Other Comprehensive Loss to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act (or portion thereof) is recorded. ASU 2018-02 is effective for us beginning in fiscal 2019, including interim periods within that fiscal year. Early adoption is permitted. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. The guidance simplifies the accounting for share-based payments made to non-employees so the accounting for such payments is substantially the same as those made to employees. The guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In July 2018, the FASB issued ASU 2018-09, Codification Improvements. This amendment makes changes to a variety of topics to clarify, correct errors in, or make minor improvements to the Accounting Standards Codification (ASC). The transition and effective date guidance is based on the facts and circumstances of each amendment. Some of the amendments do not require transition guidance and are effective upon issuance of the guidance. However, many of the amendments do have transition guidance with effective dates for annual periods beginning after December 15, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement. This guidance adds, modifies and removes several disclosure requirements relative to the three levels of inputs used to measure fair value in accordance with Topic 820, Fair Value Measurement. This guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. We are currently evaluating the impact that this standard will have on our consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update (“ASU”) 2018-15, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. This ASU clarifies the accounting treatment for implementation costs for cloud computing arrangements (hosting arrangements) that are service contracts. This guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. We are currently evaluating the impact that this standard will have on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases. In July 2018, the FASB issued ASU 2018-11, Leases (Topic 842): Targeted Improvements and ASU 2018-10, Codification Improvements to Topic 842, Leases. ASU 2016-02 and the subsequent modifications are identified as “ASC 842”. ASC 842 requires lessees to recognize most leases as assets and liabilities on the balance sheet. Qualitative and quantitative disclosures will be enhanced to better understand the amount, timing and uncertainty of cash flows arising from leases. This guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. We adopted this new standard on January 1, 2019.

A modified retrospective transition approach requires applying the new standard to all leases existing at the date of initial application. An entity may choose to use either account for the impacts of the adoption as of (1) its effective date or (2) the beginning of the earliest comparative period presented in the financial statements as its date of initial application. If an entity chooses the second option, the transition requirements for existing leases also apply to leases entered into between the date of initial application and the effective date and will require the entity to recast its comparative period financial statements and provide the disclosures required by the new standard for the comparative periods. We expect to use the effective date as our date of initial application. Consequently, financial information will not be updated and the disclosures required under the new standard will not be provided for dates and periods before January 1, 2019.

Table of Contents

The new standard provides a number of optional practical expedients in transition. We expect to elect the ‘package of practical expedients’, which permits us to not reassess under the new standard our prior conclusions about lease identification, lease classification, and initial direct costs.

We have completed the evaluation of the impact of the new standard in relation to the lease standard of all of our material lease arrangements. Based on this evaluation, we have determined that upon adoption, we will recognize Right of Use (“ROU”) asset, net of deferred rent balance, ranging from \$26.5 million to \$30.0 million, and lease liability ranging from \$32.0 million to \$36.0 million, related to our office leases. The new standard will also increase the level of financial statement disclosures related to leases. We do not expect that adoption will have a material impact on our consolidated statement of operations and statement of cash flows.

The new standard also provides practical expedients for an entity’s ongoing accounting. We currently expect to elect the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, we will not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. We also currently expect to elect the practical expedient to not separate lease and non-lease components for all of our leases.

We do not anticipate that our internal control framework will materially change, but rather existing internal controls will be modified and augmented as necessary to implement the new lease standard. We are currently in the process of evaluating the required financial statement disclosures to allow users of our financial statements to understand the nature, amount, and uncertainty for existing and any new potential leases.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate and Credit Risk

Our exposure to interest rate risk relates primarily to our investment portfolio and the potential losses arising from changes in interest rates.

We are potentially exposed to the impact of changes in interest rates as they affect interest earned on our investment portfolio. As of December 31, 2018, \$97.8 million of our cash and cash equivalents was held in operating bank accounts earning nominal interest. Accordingly, we do not believe that a 10% change in interest rates would have a significant impact on our interest income, operating results or liquidity related to these amounts.

The primary objectives of our investment activities are, in order of importance, to preserve principal, provide liquidity and maximize income without significantly increasing risk. We do not currently use or plan to use derivative financial instruments in our investment portfolio.

As of December 31, 2018 and December 31, 2017, our cash and cash equivalents were maintained by financial institutions in the United States, the United Kingdom, Canada, China, Hong Kong, India, and Russia, and our current deposits are likely in excess of insured limits.

Our accounts receivable primarily relate to revenue earned from Digital Storefront operators and advertising platforms. We perform ongoing credit evaluations of our customers' and the Digital Storefronts' financial condition but generally require no collateral from them. At December 31, 2018, Apple Inc., or Apple, accounted for 40.8%, Google Inc., or Google, accounted for 30.3% and Tapjoy Inc., or Tapjoy accounted for 21.1% of total accounts receivable. At December 31, 2017, Apple accounted for 58.0%, Google accounted for 17.1% of total accounts receivable. No other customer or Digital Storefront represented more than 10% of our total accounts receivable as of these dates.

Foreign Currency Exchange Risk

We transact business in 100 countries in more than 30 different currencies, and in 2018 and 2017, some of these currencies fluctuated significantly. Our operations outside of the United States are maintained in their local currency, with

Table of Contents

the significant operating currencies consisting of the Indian Rupee and Canadian Dollar. Although recording operating expenses in the local currency of our foreign operations mitigates some of the exposure of foreign currency fluctuations, variances among the currencies of our customers and our foreign operations relative to the United States Dollar, or USD, could have and have had a material impact on our results of operations.

Our foreign currency exchange gains and losses have been generated primarily from fluctuations in the Russian Ruble versus the USD, the Euro versus the British Pound, the Indian Rupee versus the USD and the Canadian Dollar versus the USD. At month-end, non-functional currency-denominated accounts receivable and intercompany balances are marked to market and unrealized gains and losses are included in interest and other expense, net. Translation adjustments arising from the use of differing exchange rates are included in accumulated other comprehensive income in stockholders' equity. We have in the past experienced, and in the future expect to experience, foreign currency exchange gains and losses on our accounts receivable and intercompany receivables and payables. Foreign currency exchange gains and losses could have a material adverse effect on our business, operating results and financial condition.

To date, we have not engaged in exchange rate hedging activities, and we do not expect to do so in the foreseeable future.

Table of Contents

Item 8. Financial Statements and Supplementary Data

GLU MOBILE INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page
Glu Mobile Inc. Consolidated Financial Statements	
<u>Report of Independent Registered Public Accounting Firm</u>	70
<u>Consolidated Balance Sheets</u>	72
<u>Consolidated Statements of Operations</u>	73
<u>Consolidated Statements of Comprehensive Loss</u>	74
<u>Consolidated Statements of Stockholders' Equity</u>	75
<u>Consolidated Statements of Cash Flows</u>	76
<u>Notes to Consolidated Financial Statements</u>	77

Table of Contents

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Glu Mobile Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Glu Mobile Inc. and its subsidiaries as of December 31, 2018 and 2017, and the related consolidated statements of operations, of comprehensive loss, of stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for revenue in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the

Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Table of Contents

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ PricewaterhouseCoopers LLP

San Francisco, California

February 28, 2019

We have served as the Company's auditor since 2003, which includes periods before the Company became subject to SEC reporting requirements.

Table of Contents

GLU MOBILE INC.

CONSOLIDATED BALANCE SHEETS

(in thousands, except per share data)

	December 31, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 97,834	\$ 63,764
Accounts receivable, net	27,325	34,673
Prepaid royalties	8,520	2,994
Deferred royalties	4,410	4,364
Deferred platform commission fees	25,862	20,446
Restricted cash	110	602
Prepaid expenses and other assets	6,940	10,733
Total current assets	171,001	137,576
Property and equipment, net	13,888	14,630
Long-term prepaid royalties	1,667	9,302
Other long-term assets	2,505	3,299
Intangible assets, net	9,145	18,264
Goodwill	116,227	116,227
Total assets	\$ 314,433	\$ 299,298
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 10,480	\$ 21,203
Accrued liabilities	1,384	1,154
Accrued compensation	17,896	20,603
Accrued royalties	14,139	11,782
Accrued restructuring	294	759
Deferred revenue	85,736	77,403
Total current liabilities	129,929	132,904
Long-term accrued royalties	1,649	7,300
Other long-term liabilities	5,542	5,234
Total liabilities	137,120	145,438
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, \$0.0001 par value; 5,000 shares authorized at December 31, 2018 and December 31, 2017; no shares issued and outstanding at December 31, 2018 and December 31, 2017	— 14	— 14

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Common stock, \$0.0001 par value; 250,000 shares authorized at December 31, 2018 and December 31, 2017; 143,870 and 138,745 shares issued and outstanding at December 31, 2018 and December 31, 2017

Additional paid-in capital	617,781	589,962
Accumulated other comprehensive income/(loss)	1	(6)
Accumulated deficit	(440,483)	(436,110)
Total stockholders' equity	177,313	153,860
Total liabilities and stockholders' equity	\$ 314,433	\$ 299,298

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

Table of Contents

GLU MOBILE INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share data)

	Year Ended December 31,		
	2018	2017	2016
Revenue	\$ 366,561	\$ 286,827	\$ 200,581
Cost of revenue:			
Platform commissions, royalties and other	128,445	103,499	75,239
Impairment of prepaid royalties and minimum guarantees (including impairment of prepaid royalties and minimum guarantees paid to a related party of \$0, \$0, and \$9,866 for the year ended December 31, 2018, December 31, 2017, and December 31, 2016, respectively)	711	27,323	30,107
Impairment and amortization of intangible assets (including impairment and amortization of intangible assets acquired from a related party of \$0, \$0, and \$5,000 for the year ended December 31, 2018, December 31, 2017, and December 31, 2016, respectively)	9,119	10,331	14,792
Total cost of revenue	138,275	141,153	120,138
Gross profit	228,286	145,674	80,443
Operating expenses:			
Research and development	94,934	92,420	81,879
Sales and marketing	113,860	104,356	48,050
General and administrative	31,667	34,425	30,225
Restructuring charge	240	6,019	2,279
Total operating expenses	240,701	237,220	162,433
Loss from operations	(12,415)	(91,546)	(81,990)
Interest and other expense, net	(235)	(6,850)	(5,751)
Loss before income taxes	(12,650)	(98,396)	(87,741)
Income tax (provision)/benefit	(549)	826	301
Net loss	\$ (13,199)	\$ (97,570)	\$ (87,440)
Net loss per common share - basic and diluted	\$ (0.09)	\$ (0.72)	\$ (0.66)
Weighted average common shares outstanding - basic and diluted			
Basic	141,402	135,715	131,804
Diluted	141,402	135,715	131,804

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

Table of Contents

GLU MOBILE INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(in thousands)

	Year Ended December 31,				
	2018	2017	2016		
Net loss	\$ (13,199)	\$ (97,570)	\$ (87,440)		
Other comprehensive income/(loss):					
Foreign currency translation adjustments	7	(252)	(1)	331	(1)
Other comprehensive income/(loss)	7	(252)		331	
Comprehensive loss	\$ (13,192)	\$ (97,822)	\$ (87,109)		

(1)Includes release of cumulative translation adjustment upon substantial liquidation / winding down of the Company's foreign subsidiaries which is recognized in interest and other expense, net in the Company's consolidated statement of operations for the years ended December 31, 2017, and December 31, 2016.

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

Table of Contents

GLU MOBILE INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(in thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Other Compre- hensive Income (loss)	Accumulated Deficit	Total Stockholders' Equity Deficit
	(In thousands, except per share data)					
Balances at December 31, 2015	131,580	\$ 13	\$ 557,748	\$ (85)	\$ (251,248)	\$ 306,428
Net loss	-	-	-	-	(87,440)	(87,440)
Stock-based compensation expense	-	-	13,263	-	-	13,263
Issuance of common stock upon exercise of stock options	270	-	294	-	-	294
Taxes paid related to net share settlement of equity awards	1,401	-	(2,405)	-	-	(2,405)
Issuance of common stock pursuant to Employee Stock Purchase Plan	750	-	1,878	-	-	1,878
Non-cash warrant expense	-	-	465	-	-	465
Other comprehensive income	-	-	-	331	-	331
Balances at December 31, 2016	134,001	\$ 13	\$ 571,243	\$ 246	\$ (338,688)	\$ 232,814
Net loss	-	-	-	-	(97,570)	(97,570)
Stock-based compensation expense	-	-	14,845	-	-	14,845
Issuance of common stock upon exercise of stock options	1,083	-	2,564	-	-	2,564
Issuance of common stock upon exercise of warrants	1,000	-	3,000	-	-	3,000
Taxes paid related to net share settlement of equity awards	1,767	1	(3,369)	-	-	(3,368)
Issuance of common stock pursuant to Employee Stock	894	-	1,567	-	-	1,567

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Purchase Plan						
Non-cash warrant expense	-	-	260	-	-	260
Cumulative effect adjustment from adoption of ASU 2016-09	-	-	(148)	-	148	-
Other comprehensive loss	-	-	-	(252)	-	(252)
Balances at						
December 31, 2017	138,745	\$ 14	\$ 589,962	\$ (6)	\$ (436,110)	\$ 153,860
Net loss	-	-	-	-	(13,199)	(13,199)
Stock-based compensation expense	-	-	24,592	-	-	24,592
Issuance of common stock upon exercise of stock options	2,721	-	6,922	-	-	6,922
Taxes paid related to net share settlement of equity awards	1,634	-	(7,097)	-	-	(7,097)
Issuance of common stock pursuant to Employee Stock Purchase Plan	770	-	2,356	-	-	2,356
Non-cash warrant expense	-	-	1,046	-	-	1,046
Cumulative effect adjustment from adoption of ASU 2014-09	-	-	-	-	8,826	8,826
Other comprehensive income	-	-	-	7	-	7
Balances at						
December 31, 2018	143,870	\$ 14	\$ 617,781	\$ 1	\$ (440,483)	\$ 177,313

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

Table of Contents

GLU MOBILE INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Year Ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net loss	\$ (13,199)	\$ (97,570)	\$ (87,440)
Adjustments to reconcile net loss to net cash (used in) / generated from operating activities:			
Depreciation	3,855	3,195	2,947
Impairment and amortization of intangible assets (including impairment and amortization of intangible assets acquired from a related party of \$0, \$0, and \$5,000 for the year ended December 31, 2018, December 31, 2017, and December 31, 2016, respectively)	9,119	10,331	14,792
Change in fair value of investments	—	—	1,900
Other non-cash adjustments	1,095	(1,577)	879
Stock-based compensation	24,592	15,063	13,263
Non-cash warrant expense/(benefit)	1,046	631	(55)
Impairment of investments	—	—	2,600
Net loss from the sale of a foreign subsidiary	—	6,468	—
Impairment of prepaid royalties and minimum guarantees (including impairment of prepaid royalties and minimum guarantees paid to a related party of \$0, \$0, and \$9,866 for the year ended December 31, 2018, December 31, 2017, and December 31, 2016, respectively)	711	27,323	30,107
Changes in operating assets and liabilities, net of effect of acquisitions:			
Accounts receivable	7,028	(13,061)	402
Prepaid royalties	(947)	(18,868)	(16,675)
Deferred royalties	(835)	(1,088)	(608)
Deferred platform commission fees	(5,416)	(8,876)	(3,896)
Prepaid expenses and other assets	1,345	(4,151)	2,168
Accounts payable and other accrued liabilities	(10,244)	4,735	3,200
Accrued compensation	(2,707)	8,094	4,577
Accrued royalties and license fees	(947)	4,125	55
Deferred revenue	17,947	32,539	12,251
Accrued restructuring	(465)	488	(70)
Other long-term liabilities	308	3,963	(181)
Net cash generated from / (used in) from operating activities	32,286	(28,236)	(19,784)
Cash flows from investing activities:			
Purchase of property and equipment	(3,362)	(11,344)	(3,070)
Proceeds from divestiture of Moscow studio	2,726	—	—
Net cash paid for acquisitions	—	(1,659)	(36,660)

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Investments in Plain Vanilla Corp and Dairy Free Games, Inc.	—	—	(9,500)
Purchase of intangible assets (including purchase of intangible assets from a related party of \$0, \$0, and \$2,500 for the year ended December 31, 2018, December 31, 2017, and December 31, 2016, respectively)	—	—	(2,500)
Other investing activities	—	(1,410)	—
Net cash used in investing activities	(636)	(14,413)	(51,730)
Cash flows from financing activities:			
Crowdstar payments on acquired line of credit and term loan	—	—	(1,885)
Proceeds from exercise of stock options and purchases under the ESPP	9,278	4,131	2,172
Taxes paid related to net share settlement of equity awards	(7,097)	(3,368)	(2,405)
Cash paid to acquire non-controlling interest in Crowdstar	—	—	(4,667)
Proceeds from exercise of stock warrants and issuance of common stock	—	3,000	—
Net cash generated from / (used in) from financing activities	2,181	3,763	(6,785)
Effect of exchange rate changes on cash	(253)	(162)	(327)
Net increase / (decrease) in cash and cash equivalents	33,578	(39,048)	(78,626)
Cash, cash equivalents and restricted cash at beginning of period	64,366	103,414	182,040
Cash, cash equivalents and restricted cash at end of period	\$ 97,944	\$ 64,366	\$ 103,414
Supplemental disclosures of cash flow information			
Purchases of property and equipment included in accounts payable and accrued liabilities and other current liabilities	\$ 1,101	\$ 1,350	\$ 11
Income taxes paid	\$ 382	\$ 365	\$ 174

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

Table of Contents

GLU MOBILE INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Dollar and share amounts in thousands, except per share data)

NOTE 1 — THE COMPANY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Company

Glu Mobile Inc. (the “Company” or “Glu”) was incorporated in Nevada in May 2001 and reincorporated in the state of Delaware in March 2007. The Company develops, publishes, and markets a portfolio of games designed for users of smartphones and tablet devices who download and make purchases within its games through direct-to-consumer digital storefronts, such as the Apple App Store, Google Play Store, and others (“Digital Storefronts”). The Company creates games based on its own original brands, as well as third-party licensed brands, properties and other content.

Basis of Presentation

The Company's consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States.

Basis of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All material intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of financial statements and related disclosures in conformity with U.S. generally accepted accounting principles (“U.S. GAAP”) requires the Company’s management to make judgments, assumptions and estimates that affect the amounts reported in its consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and on various other assumptions it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Significant estimates and assumptions reflected in the financial statements include, but are not limited to, the estimated lives that the Company uses for revenue recognition, the allowance for doubtful accounts, useful lives of property and equipment and intangible assets, valuation and realizability of deferred tax assets and uncertain tax positions, fair value of stock awards issued, fair value of warrants issued, accounting for business combinations, evaluating goodwill, long-lived assets for impairment, realization of prepaid royalties and fair value of investments. Actual results may differ from these estimates and these differences may be material.

Reclassifications

In 2018, the Company adopted Accounting Standards Update (“ASU”) 2016-18, Restricted Cash and ASU 2016-15, Classification of Certain Cash Receipts and Cash Payments. In addition, the Company condensed certain line items on the current period cash flow statement. Accordingly, the consolidated statement of cash flow for the twelve months ended December 31, 2017, and 2016, respectively, has been reclassified to conform with the current period presentation under this new guidance. The Company adopted ASU 2016-18 by removing the line item “Decrease in restricted cash” from cash flows from investing activities for the twelve months ended December 31, 2017 and 2016. This resulted in an increase in net cash used in investing activities of \$710 and \$186 in 2017 and 2016, respectively, reflecting the reclassification of the change in restricted cash during the twelve months ended December 31, 2017 and 2016, respectively.

Revenue Recognition

The Company generates revenue through in-app purchases within its games on smartphones and tablets, such as Apple’s iPhone and iPad and mobile devices utilizing Google’s Android operating system. Smartphone and tablet games

Table of Contents

are distributed primarily through Digital Storefronts. The Company also has relationships with certain advertising service providers for advertisements within smartphone games and revenue from these advertising providers is generated through impressions, clickthroughs, banner ads and offers.

Users can download the Company's free-to-play games within the Digital Storefronts and pay to acquire virtual currency which can be redeemed in the game for virtual goods. The Company sells both consumable and durable virtual goods and receives reports from the Digital Storefronts, which breakdown the various purchases made from the Company's games over a given time period. The Company reviews these reports and determines on a per-item basis whether the purchase was a consumable virtual good or a durable virtual good. Consumable virtual goods are items that can be purchased directly by the player through the Digital Storefront and are consumed at a predetermined time or otherwise have limitations on repeated use, while durable virtual goods are items that remain in the game for as long as the player continues to play. The Company's revenue from consumable virtual goods has been insignificant. Revenue from durable virtual goods are generated through the purchase of virtual coins by users through a Digital Storefront. Players convert the virtual coins within the game to durable virtual goods such as furniture, clothes, players or other items to enhance their game-playing experience.

The Company adopted Accounting Standard Codification 606 ("ASC 606") and its related amendments effective January 1, 2018 using a modified retrospective method. The reported results for 2018 reflect the application of ASC 606 guidance while the reported results for 2017 were prepared under the guidance of ASC 605, Revenue Recognition (ASC 605), which is also referred to herein as "legacy GAAP" or the "previous guidance". The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of the Company's services and will provide financial statement readers with enhanced disclosures.

In accordance with ASC 606, revenue is recognized when or as a customer obtains control of promised services. The amount of revenue recognized reflects the consideration which the Company expects to receive in exchange for these services. A contract with a customer exists when (i) the Company enters into an enforceable contract with a customer that defines each party's rights regarding the services to be transferred and identifies the payment terms related to these services, (ii) the contract has commercial substance and, (iii) the Company determines that collection of substantially all consideration for services that are transferred is probable based on the customer's intent and ability to pay the promised consideration. The Company applies judgment in determining the customer's ability and intention to pay, which is based on a variety of factors including the customer's historical payment experience or, in the case of a new customer, published credit and financial information pertaining to the customer.

Micro-Transactions

The Company distributes its games for smartphones and tablets to the end customer through Digital Storefronts. Within these Digital Storefronts, users can download the Company's free-to-play games and pay to acquire virtual currency which can be redeemed in the game for virtual goods. The initial download of the mobile game from the Digital Storefront does not create a contract under ASC 606 because of the lack of commercial substance; however,

the separate election by the player to make an in-application purchase satisfies the criterion thus creating a contract under ASC 606. The Company has identified the following performance obligations in these contracts:

1. Ongoing game related services such as hosting of game play, storage of customer content, when and if available content updates, maintaining the virtual currency management engine, tracking gameplay statistics, matchmaking as it relates to multiple player gameplay, etc.
2. Obligation to the paying player to continue displaying and providing access to the purchased virtual goods within the game.

Neither of these obligations are considered distinct since the actual mobile game and the related ongoing services are both required to purchase and benefit from the related virtual goods. As such, the Company's performance obligations represent a single combined performance obligation which is to make the game and the ongoing game related services available to the players. The transaction price, which is the amount paid for virtual currency/goods by the player, is allocated entirely to this single combined performance obligation. The Company recognizes revenue from in-application purchases of durable virtual currency/goods over the estimated average playing period of paying users. The Company's

Table of Contents

revenue from consumable virtual goods has been insignificant over the previous three years. The Company has estimated the useful life of a paying user of between four and eight months.

Advertisements and Offers

The Company has relationships with certain advertising service providers for advertisements within its mobile games. Revenue from these advertising service providers is generated through impressions, clickthroughs, offers and banner ads. Offers are the type of advertisements where the players are rewarded with virtual currency for completing specified actions, such as downloading another application, watching a short video, subscribing to a service or completing a survey. The Company has determined the advertising buyer to be its customer and displaying the advertisements within the mobile games is identified as the single performance obligation. Revenue from advertisements and offers are recognized at the point-in-time the advertisements are displayed in the game or the offer has been completed by the user as the customer simultaneously receives and consumes the benefits provided from these services.

Other Estimates and Judgments

The Company computes its estimated average playing period of paying users at least twice each year. It has examined the playing patterns of paying users across a representative sample of its games across various genres.

The Company uses the “survival analysis” model to estimate the average playing period for paying users. This model provides for a singular approach to estimating the average playing period of paying users on a title by title basis for the Company’s diverse portfolio of games. It is a statistical model that analyzes time duration until one or more events happens and is commonly used in various industries for estimating lifespans. The Company believes this is an appropriate model to estimate the average playing period of paying users for its titles as this model statistically estimates the average playing period of each title by analyzing the historical behavior patterns of paying users.

This model requires the stratification of user data into active and inactive monetizing users on a per title basis. Active users are those who are active in the game for the past 30 days as of the evaluation date. The remaining users are considered inactive and deemed to have churned from the game. These users are treated mathematically differently in the model than those who are still active. A distribution curve is then fit to the user data to estimate the average playing period of paying users on a per title basis.

The Company has selected a threshold of 120 days from the commercial launch of a title as the minimum number of days of data required for this model. This threshold was deemed to be appropriate as the Company tested the model

using lower thresholds which resulted in inconsistencies in the estimate of the average playing period of paying users. For new titles with less than 120 days of data that share similar attributes with an existing title and/or prequel titles, the average playing period is determined based on the average playing period of that existing title or prequel title, as applicable. For all other titles with less than 120 days of data, the average playing period is determined based on the average playing period of all other remaining existing titles.

While the Company believes its estimates to be reasonable based on available game player information, it may revise such estimates in the future if a titles' user characteristics change. Any adjustments arising from changes in the estimates of the average playing period for paying users would be applied to the current quarter and prospectively on the basis that such changes are caused by new information that indicates a change in user behavior patterns compared to historical titles. Any changes in the Company's estimates of the useful life of virtual goods in a certain title may result in revenue being recognized on a basis different from prior periods' and may cause its operating results to fluctuate.

Principal Agent Considerations

The Company evaluated its Digital Storefront and advertising service provider agreements under ASC 606 in order to determine if it is acting as the principal or as an agent when selling virtual items or advertisements within its games. The Company primarily uses Digital Storefronts for distributing its smartphone games and for enabling players to purchase virtual items and advertising service providers to serve advertisements within its games. The Company evaluated the

Table of Contents

following factors to assess whether it controls each specified good or service before that good or service is transferred to the customer:

- the party responsible for the fulfillment of the virtual items, game related services, or serving of advertisements;
- the party having the discretion to set pricing with the end-users; and
- the party having inventory risk before the specified good or service have been transferred to a customer.

Based on the evaluation of the above indicators, the Company determined that it has control of the services before they are transferred to the end-user. Thus, the Company is generally acting as a principal and is the primary obligor to end-users for games distributed through Digital Storefronts and advertisements served through its advertising service providers. Therefore, the Company recognizes revenue related to these arrangements on a gross basis, when the necessary information about the gross amounts or platform fees charged, before any adjustments, are made available by the Digital Storefronts and advertising service providers. In situations where the price paid by the end-user of the advertising service provider is not known, the Company accounts for these transactions on a net basis.

Deferred Platform Commissions and Royalties

Digital Storefronts retain platform commissions and fees on each purchase made by the paying players through the Digital Storefront. The Company is also obligated to pay ongoing licensing fees in the form of royalties related to the games developed based on or significantly incorporating licensed brands, properties or other content, and the Company plans to incorporate additional licensed content in some of its own originally branded games. As revenue from sales to paying players through Digital Storefronts are deferred, the related direct and incremental platform commissions and fees as well as third-party royalties are also deferred on the consolidated balance sheets. The deferred platform commissions and royalties are recognized in the consolidated statements of operations in "Cost of revenue" in the period in which the related sales are recognized as revenue.

Cash and Cash Equivalents

The Company considers all investments purchased with an original or remaining maturity of three months or less at the date of purchase to be cash equivalents. The Company deposits cash and cash equivalents with financial institutions that management believes are of high credit quality. Deposits held with financial institutions often exceed the amount of insurance on these deposits.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash, cash equivalents and accounts receivable.

The Company derives its accounts receivable from revenue earned from customers or through Digital Storefronts located in the United States and other locations outside of the United States. The Company performs ongoing credit evaluations of its customers' and the Digital Storefronts' financial condition and, generally, requires no collateral from its customers or the Digital Storefronts. The Company bases its allowance for doubtful accounts on management's best estimate of the amount of probable credit losses in the Company's existing accounts receivable. The Company reviews past due balances over a specified amount individually for collectability on a monthly basis. It reviews all other balances quarterly. The Company charges off accounts receivable balances against the allowance when it determines that the amount will not be recovered.

Table of Contents

The following table summarizes the revenue from customers or aggregate purchases through Digital Storefronts in excess of 10% of the Company's revenue:

	Year Ended		
	December 31,		
	2018	2017	2016
Apple	54.7 %	54.2 %	52.7 %
Google	31.3 %	30.3 %	27.6 %

At December 31, 2018, Apple Inc. ("Apple"), Google Inc. ("Google"), and Tapjoy Inc. ("Tapjoy") accounted for 40.8%, 30.3%, and 21.1%, respectively, of total accounts receivable. At December 31, 2017, Apple accounted for 58.0%, and Google accounted for 17.1% of total accounts receivable. No other customer or Digital Storefront represented more than 10% of the Company's total accounts receivable as of these dates.

Fair Value

The Company accounts for fair value in accordance with ASC 820, Fair Value Measurements and Disclosures ("ASC 820"). Fair value is defined under ASC 820 as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value under ASC 820 must maximize the use of observable inputs and minimize the use of unobservable inputs. The Company uses a three-tier hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 - Quoted prices in active markets for identical assets or liabilities.

Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The first two levels in the hierarchy are considered observable inputs and the last is considered unobservable. The Company's cash and cash equivalents and restricted cash, which were held in operating bank accounts, are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. The carrying value of accounts receivable and payables approximates fair value due to the short time to expected payment or receipt of cash. Please refer to Note 4 for further details.

Prepaid or Guaranteed Licensor Royalties

The Company's royalty expenses consist of fees that it pays to content owners for the use of their brands, properties and other licensed content, including trademarks and copyrights, in the development of the Company's games. Royalty-based obligations are either paid in advance and capitalized on the balance sheet as prepaid royalties or accrued as incurred and subsequently paid. These royalty-based obligations are expensed to cost of revenue at the greater of the revenue derived from the relevant game multiplied by the applicable contractual rate or an effective royalty rate based on expected net product sales.

The Company's contracts with some licensors include minimum guaranteed royalty payments, which are payable regardless of the ultimate revenue generated from end users. In accordance with ASC 440-10, Commitments ("ASC 440"), the Company recorded a minimum guaranteed royalty liability of \$7,304 and \$11,614 as of December 31, 2018 and 2017, respectively. When no significant performance remains with the licensor, the Company initially records each of these guarantees as an asset and as a liability at the contractual amount. When significant performance remains with the licensor, the Company records royalty payments as an asset when actually paid and as a liability when incurred, rather

Table of Contents

than upon execution of the contract. The classification of minimum royalty payment obligations between long-term and short-term is determined based on the expected timing of recoupment of earned royalties calculated on projected revenue for the licensed IP games.

Each quarter, the Company evaluates the realization of its prepaid royalties as well as any recognized guarantees not yet paid to determine amounts that it deems unlikely to be realized through product sales. The Company uses estimates of revenue, cash flows and net margins to evaluate the future realization of prepaid royalties, license fees, and guarantees. This evaluation considers multiple factors such as the term of the agreement, forecasted demand, game life cycle status, game development plans, and current and anticipated sales levels, as well as other qualitative factors such as the success of similar games and similar genres on mobile devices published by the Company and its competitors and/or other game platforms (e.g., consoles and personal computers) utilizing the intellectual property. To the extent that this evaluation indicates that the remaining prepaid and guaranteed royalty payments are not recoverable, the Company records an impairment charge to cost of revenue in the period in which impairment is indicated. The Company recorded impairment charges to cost of revenue of \$711, \$27,323, and \$30,107 related to prepaid guaranteed royalties related to certain of its celebrity license agreements, and certain other prepaid royalties during the years ended December 31, 2018, 2017, and 2016, respectively. The impairment charges recorded during the year ended December 31, 2016 also included impairment of prepaid royalties and license fees paid to an affiliate of Tencent Holdings Limited (“Tencent”), one of the Company’s principal stockholders related to the Company’s game, Rival Fire.

Goodwill and Intangible Assets

In accordance with ASC 350, Intangibles-Goodwill and Other (“ASC 350”), the Company’s goodwill is not amortized but is tested for impairment on an annual basis or whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. The Company performs its annual impairment test as of September 30th each year, at the reporting unit level, which is at the company level as a whole, since it operates in a single reporting segment. It also performs an impairment test whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. The impairment review involves a multiple-step process as follows:

Step — 0 The Company evaluates qualitative factors and overall financial performance to determine whether it is necessary to perform the first step of the two-step goodwill test. This step is referred to as “Step 0.” Step 0 involves, among other qualitative factors, weighing the relative impact of factors that are specific to the reporting unit as well as industry and macroeconomic factors. After assessing those various factors, if it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, then the entity will need to proceed to the first step of the two-step goodwill impairment test.

Step — 1 The Company compares the fair value of each of its reporting units to the carrying value including goodwill of that unit. For each reporting unit where the carrying value, including goodwill, exceeds the unit’s fair value, the

Company moves on to step 2. If a unit's fair value exceeds the carrying value, no further work is performed and no impairment charge is necessary.

Step — 2 The Company performs an allocation of the fair value of the reporting unit to its identifiable tangible and intangible assets (other than goodwill) and liabilities. This allows the Company to derive an implied fair value for the unit's goodwill. The Company then compares the implied fair value of the reporting unit's goodwill with the carrying value of the unit's goodwill. If the carrying amount of the unit's goodwill is greater than the implied fair value of its goodwill, an impairment charge would be recognized for the excess.

In 2018, 2017, and 2016, the Company did not record any goodwill impairment charges as it was determined that it was more likely than not that the fair values of the reporting units exceeded their respective carrying values.

Purchased intangible assets with finite lives are amortized using the straight-line method over their useful lives ranging from three to seven years and are reviewed for impairment in accordance with ASC 360, Property, Plant and Equipment ("ASC 360").

Table of Contents

Long-Lived Assets

The Company evaluates its long-lived assets, including property and equipment and intangible assets with finite lives, for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable in accordance with ASC 360. Factors considered important that could result in an impairment review include significant underperformance relative to expected historical or projected future operating results, significant changes in the manner of use of acquired assets, significant negative industry or economic trends, and a significant decline in the Company's stock price for a sustained period of time. Impairment exists if the carrying amounts of such assets exceed the estimates of future undiscounted cash flows expected to be generated by such assets. Should an impairment exist, the impairment loss would be measured based on the excess carrying value of the asset over the asset's estimated fair value. Fair value is generally measured based on either quoted market prices, if available, or a discounted cash flow analysis.

Property and Equipment

The Company states property and equipment at cost. The Company computes depreciation or amortization using the straight-line method over the estimated useful lives of the respective assets or, in the case of leasehold improvements, the lease term of the respective assets, whichever is shorter.

The depreciation and amortization periods for the Company's property and equipment are as follows:

Computer equipment	Three years
Computer software	Two to Three years
Furniture and fixtures	Three years
Leasehold improvements	Shorter of the estimated useful life or remaining term of lease

Research and Development Costs

The Company charges costs related to research, design and development of products to research and development expense as incurred. The types of costs included in research and development expenses include salaries, third party development cost, contractor fees, and allocated facilities costs.

Software Development Costs

The Company applies the principles of ASC 985-20, Software-Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed (“ASC 985-20”). ASC 985-20 requires that software development costs incurred in conjunction with product development be charged to research and development expense until technological feasibility is established. Thereafter, until the product is released for sale, software development costs must be capitalized and reported at the lower of unamortized cost or net realizable value of the related product. The Company has adopted the “tested working model” approach to establishing technological feasibility for its games. Under this approach, the Company does not consider a game in development to have passed the technological feasibility milestone until the Company has completed a model of the game that contains essentially all the functionality and features of the final game and has tested the model to ensure that it works as expected. To date, the Company has not incurred significant costs between the establishment of technological feasibility and the release of a game for sale; thus, the Company has expensed all software development costs as incurred.

Internal Use Software

The Company recognizes internal use software development costs in accordance with ASC 350-40, Intangibles-Goodwill and Other-Internal Use Software (“ASC 350-40”) and ASU 2015-05, Cloud Computing Arrangements. The Company capitalizes software development costs, including costs incurred to purchase third-party software, beginning when it determines certain factors are present including, among others, that technology exists to achieve the performance requirements and/or buy versus internal development decisions, which the Company equates to the application development stage. The Company capitalized certain internal use software costs totaling approximately \$65, \$924 and

Table of Contents

\$728 during the years ended December 31, 2018, 2017, and 2016, respectively. The estimated useful life of costs capitalized is generally three years. During the years ended December 31, 2018, 2017 and 2016, the amortization of capitalized software costs totaled approximately \$896, \$1,031 and \$998, respectively. Capitalized internal use software development costs are included in property and equipment, net.

Income Taxes

The Company accounts for income taxes in accordance with ASC 740, Income Taxes (“ASC 740”), which requires recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in its financial statements or tax returns. Under ASC 740, the Company determines deferred tax assets and liabilities based on the temporary difference between the financial statement and tax bases of assets and liabilities using the enacted tax rates in effect for the year in which it expects the differences to reverse. The Company establishes valuation allowances when necessary to reduce deferred tax assets to the amount it expects to realize.

The Company accounts for uncertain tax positions in accordance with ASC 740, which requires companies to adjust their financial statements to reflect only those tax positions that are more-likely-than-not to be sustained. ASC 740 prescribes a comprehensive model for the financial statement recognition, measurement, presentation and disclosure of uncertain tax positions taken or expected to be taken in income tax returns. The Company’s policy is to recognize interest and penalties related to unrecognized tax benefits in income tax expense.

Restructuring

The Company accounts for costs associated with employee terminations and other exit activities in accordance with ASC 420, Exit or Disposal Cost Obligations (“ASC 420”). The Company records employee termination benefits as an operating expense when it communicates the benefit arrangement to the employee and it requires no significant future services, other than a minimum retention period, from the employee to earn the termination benefits.

Stock-Based Compensation

The Company applies the fair value provisions of ASC 718, Compensation-Stock Compensation (“ASC 718”). ASC 718 requires the recognition of compensation expense, using a fair-value based method, for costs related to all share-based payments including stock options, restricted stock units (“RSUs”), performance stock units (“PSUs”), and performance stock options (“PSOs”). The number of PSUs and PSOs earned and eligible to vest will be determined based on achievement of specified financial performance measures. ASC 718 requires companies to estimate the fair value of stock-option awards on the grant date using an option pricing model. The fair value of stock options and PSOs and

stock purchase rights granted pursuant to the Company's equity incentive plans and 2007 Employee Stock Purchase Plan ("ESPP"), respectively, is determined using the Black-Scholes valuation model. The determination of fair value is affected by the stock price, as well as assumptions regarding subjective variables such as expected employee exercise behavior and expected stock price volatility over the expected term of the award. Generally, these assumptions are based on historical information and judgment is required to determine if historical trends may be indicators of future outcomes.

Effective January 1, 2017, the Company no longer estimates forfeitures but accounts for them as and when they occur. Changes to the assumptions used in the Black-Scholes option valuation calculation, as well as future equity granted or assumed through acquisitions could significantly impact the compensation expense the Company recognizes. The cost of RSUs and PSUs is determined using the fair value of the Company's common stock based on the quoted closing price of the Company's common stock on the date of grant. Compensation cost for stock options, RSUs and performance-based awards with a single vesting date is amortized ratably over the requisite service period. For performance-based awards that have multiple vesting dates, the compensation cost is recognized ratably over the requisite service period for each tranche, whereby each vesting tranche is treated as a separate award for determining the requisite service period. The compensation cost for performance-based awards may be adjusted over the vesting period based on interim estimates of performance against the pre-set financial performance measures.

Table of Contents

Advertising Expenses

The Company expenses the production costs of advertising, including direct response advertising, the first time the advertising takes place. Advertising expense was \$95,037, \$88,775 and \$37,408 in the years ended December 31, 2018, 2017, and 2016, respectively.

Comprehensive Loss

Comprehensive loss consists of two components, net loss and other comprehensive income/(loss). Other comprehensive income/(loss) refers to revenue, expenses, gains and losses that under GAAP are recorded as an element of stockholders' equity but are excluded from net loss. The Company's other comprehensive income/(loss) included foreign currency translation adjustments from those subsidiaries not using the U.S. Dollar as their functional currency, and a reclassification to net loss from the write-off of cumulative translation adjustment.

Foreign Currency Translation

In preparing its consolidated financial statements, the Company translates the financial statements of its foreign subsidiaries from their functional currencies, the local currency, into U.S. Dollars. This process resulted in unrealized exchange gains and losses, which are included as a component of accumulated other comprehensive income/(loss) within stockholders' deficit. However, if the functional currency is deemed to be the U.S. Dollar, any gain or loss associated with the translation of these financial statements would be included in other expense within the Company's consolidated statements of operations.

Cumulative foreign currency translation adjustments include any gain or loss associated with the translation of a subsidiary's financial statements when the functional currency of a subsidiary is the local currency. If the Company disposes of any of its subsidiaries, any cumulative translation gains or losses would be realized and recorded in other expense within the Company's consolidated statement of operations in the period during which the disposal occurs. If the Company determines that there has been a change in the functional currency of a subsidiary relative to the U.S. Dollar, any translation gains or losses arising after the date of change would be included in other expense within the Company's consolidated statement of operations.

Business Combinations

The Company applies the accounting standard related to business combinations, ASC 805, Business Combinations (“ASC 805”). The standard requires:

- recognition of assets acquired, liabilities assumed, and contingent consideration at their fair value on the acquisition date with subsequent changes recognized in earnings;
- acquisition-related expenses and restructuring costs to be recognized separately from the business combination and expensed as incurred;
- in-process research and development to be capitalized at fair value as an indefinite-lived intangible asset until completion or abandonment; and
- that changes in accounting for deferred tax asset valuation allowances and acquired income tax uncertainties after the measurement period be recognized as a component of provision for taxes.

The Company accounts for acquisitions of entities or assets that include inputs and processes and have the ability to create outputs as business combinations. The purchase price of the acquisition is allocated to tangible assets, liabilities, and identifiable intangible assets acquired based on their estimated fair values. The excess of the purchase price over those fair values is recorded as goodwill. Acquisition-related expenses and restructuring costs are expensed as incurred. While the Company uses its best estimates and assumptions as a part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the business combination date, these estimates and assumptions are inherently uncertain and subject to refinement. As a result, during the preliminary purchase price allocation period, which may be up to one year from the business combination date, the Company may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. After the preliminary purchase price allocation period,

Table of Contents

the Company records adjustments to assets acquired or liabilities assumed subsequent to the purchase price allocation period in its operating results in the period in which the adjustments were determined.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued ASU 2014-09, Revenue from Contracts with Customers (Topic 606). The Company adopted ASU 2014-09 and its related amendments effective on January 1, 2018 using the modified retrospective method. See Note 5 "Revenue from Contracts with Customers" for the required disclosures related to the impact of adopting this standard and a discussion of the Company's updated policies related to revenue recognition.

In May 2017, the FASB issued ASU 2017-09, Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting, which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. It is effective prospectively for the annual period ending December 31, 2018 and interim periods within that annual period. The Company adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash, which requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown in the statement of cash flows. The Company adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements. Please see Reclassifications within this Note.

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. ASU No. 2016-16 requires that an entity recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017. The Company adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. ASU No. 2016-15 addresses eight specific cash flow issues with the objective of reducing existing diversity in practice. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017. The Company adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments - Overall - Recognition and Measurement of Financial Assets and Financial Liabilities. The guidance requires entities to measure equity investments that do not result in consolidation and are not accounted for under the equity method at fair value and recognize any changes in fair value in net income unless the investments qualify for a practicability exception. The updated standard is effective for interim and annual reporting periods beginning after December 15, 2017. The Company adopted this guidance in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In March 2018, the FASB issued ASU 2018-05, Income Taxes (Topic 740), Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118. The ASU adds various SEC paragraphs pursuant to the issuance of the December 2017 SEC Staff Accounting Bulletin No. 118, Income Tax Accounting implications of the Tax Cuts and Jobs Act ("SAB 118"), which was effective immediately. The SEC issued SAB 118 to address concerns about reporting entities' ability to timely comply with the accounting requirements to recognize all of the effects of the Tax Cuts and Jobs Act in the period of enactment. The guidance specifies that, for income tax effects of the Tax Cuts and Jobs Act that can

Table of Contents

be reasonably estimated but for which the accounting and measurement period is not yet complete, entities should report provisional amounts in the reporting period that includes the enactment date and those provisional amounts can be adjusted for a measurement analysis not to exceed one year from the enactment date. The Company has accounted for the tax effects of the Tax Cuts and Jobs Act under the guidance of SAB 118, on a provisional basis, in its consolidated financial statements for the year ended December 31, 2017. Immaterial adjustments made to the provisional amounts allowed under SAB 118 were identified and recorded as discrete adjustments during the year ended December 31, 2018. The accounting was completed in the fourth quarter of 2018.

Recently Issued Accounting Pronouncements Not Yet Adopted

In January 2017, the FASB issued ASU No. 2017-04, Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. This new accounting standard update simplifies the measurement of goodwill by eliminating the Step 2 impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The new guidance requires an entity to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. The new guidance becomes effective for goodwill impairment tests in fiscal years beginning after December 15, 2019, though early adoption is permitted. The Company is currently assessing the impact of this new guidance.

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805), which clarifies the definition of a business to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard will be effective in the first quarter of fiscal 2019. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The standard provides financial statement preparers with an option to reclassify stranded tax effects within Accumulated Other Comprehensive Loss to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act (or portion thereof) is recorded. ASU 2018-02 is effective for the Company beginning in fiscal 2019, including interim periods within that fiscal year. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. The guidance simplifies the accounting for share-based payments made to non-employees so the accounting for such payments is substantially the same as those made to employees. The guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those

fiscal years. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

In July 2018, the FASB issued ASU 2018-09, Codification Improvements. This amendment makes changes to a variety of topics to clarify, correct errors in, or make minor improvements to the Accounting Standards Codification (ASC). The transition and effective date guidance is based on the facts and circumstances of each amendment. Some of the amendments do not require transition guidance and are effective upon issuance of the guidance. However, many of the amendments do have transition guidance with effective dates for annual periods beginning after December 15, 2018. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement. This guidance adds, modifies and removes several disclosure requirements relative to the three levels of inputs used to measure fair value in accordance with Topic 820, Fair Value Measurement. This guidance is effective for fiscal years beginning after December 15, 2019, including interim

Table of Contents

periods within those fiscal years. Early adoption is permitted. The Company is currently evaluating the impact that this standard will have on its consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update (“ASU”) 2018-15, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. This ASU clarifies the accounting treatment for implementation costs for cloud computing arrangements (hosting arrangements) that are service contracts. This guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption of the amendments is permitted, including in interim periods. The Company is currently evaluating the impact that this standard will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases. In July 2018, the FASB issued ASU 2018-11, Leases (Topic 842): Targeted Improvements and ASU 2018-10, Codification Improvements to Topic 842, Leases. ASU 2016-02 and the subsequent modifications are identified as “ASC 842”. ASC 842 requires lessees to recognize most leases as assets and liabilities on the balance sheet. Qualitative and quantitative disclosures will be enhanced to better understand the amount, timing and uncertainty of cash flows arising from leases. This guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company adopted this new standard on January 1, 2019.

A modified retrospective transition approach requires applying the new standard to all leases existing at the date of initial application. An entity may choose to use either account for the impacts of the adoption as of (1) its effective date or (2) the beginning of the earliest comparative period presented in the financial statements as its date of initial application. If an entity chooses the second option, the transition requirements for existing leases also apply to leases entered into between the date of initial application and the effective date and will require the entity to recast its comparative period financial statements and provide the disclosures required by the new standard for the comparative periods. The Company expects to use the effective date as its date of initial application. Consequently, financial information will not be updated and the disclosures required under the new standard will not be provided for dates and periods before January 1, 2019.

The new standard provides a number of optional practical expedients in transition. The Company expects to elect the ‘package of practical expedients’, which permits the Company to not reassess under the new standard for prior conclusions about lease identification, lease classification, and initial direct costs.

The Company has completed the evaluation of the impact of the new standard in relation to the lease standard of all of its material lease arrangements. Based on this evaluation, the Company has determined that upon adoption, it will recognize Right of Use (“ROU”) asset, net of deferred rent balance, ranging from \$26,500 to \$30,000, and lease liability ranging from \$32,000 to \$36,000, related to its office leases. The new standard will also increase the level of financial statement disclosures related to leases. The Company does not expect that adoption will have a material impact on its consolidated statement of operations and statement of cash flows.

The new standard also provides practical expedients for an entity's ongoing accounting. The Company currently expects to elect the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, the Company will not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. The Company also currently expects to elect the practical expedient to not separate lease and non-lease components for all of its leases.

The Company does not anticipate that its internal control framework will materially change, but rather existing internal controls will be modified and augmented as necessary to implement the new lease standard. The Company is currently in the process of evaluating the required financial statement disclosures to allow users of its financial statements to understand the nature, amount, and uncertainty for existing and any new potential leases.

Table of Contents

NOTE 2 — NET LOSS PER SHARE

The Company computes net loss per share by dividing its net loss for the period by the weighted average number of common shares outstanding during the period less the weighted average common shares subject to restrictions imposed by the Company.

	Year Ended December 31,		
	2018	2017	2016
Net loss	\$ (13,199)	\$ (97,570)	\$ (87,440)
Shares used to compute net loss per share:			
Weighted average common shares outstanding	141,402	135,715	132,808
Weighted average common shares subject to restrictions	—	—	(1,004)
Weighted average shares used to compute basic and diluted net loss per share	141,402	135,715	131,804
Net loss per share - basic and diluted	(0.09)	(0.72)	(0.66)

The following equity awards outstanding at the end of each period presented have been excluded from the computation of net loss per share of common stock for the periods presented because including them would have had an anti-dilutive effect:

	Year Ended December 31,		
	2018	2017	2016
Warrants to purchase common stock	1,600	3,267	4,267
Options to purchase common stock	18,491	16,932	15,813
RSUs	3,021	5,812	8,224
PSOs	3,512	—	—
PSUs	711	—	—
ESPP	283	376	418
	27,618	26,387	28,722

NOTE 3 — BUSINESS COMBINATIONS / DIVESTITURE

Divestiture of Moscow Studio

On December 31, 2017, the Company entered into the following agreements related to the divestiture of its Moscow-based game development studio (the “Moscow Studio”) through the sale of its wholly-owned UK subsidiary Glu Mobile (Russia) Limited (“GMRL”):

- Share Purchase Agreement (the “SPA”) between the Company and Saber Interactive (“Saber”);
- Transitional Services Agreement (the “TSA”) among the Company, Saber and MGL My.com (Cyprus) Limited (“MGL”); and
- Asset Purchase and License Agreement (the “APLA”) between the Company and MGL.

Pursuant to the SPA, Saber purchased all the issued and outstanding share capital of GMRL. Saber also assumed all obligations under the office lease for the Moscow Studio.

Under the TSA, Saber agreed to transition certain legacy titles from the Moscow Studio to the Company’s Hyderabad studio. Upon successful completion of the transition (i) Saber paid the employees of the Moscow Studio and GMRL bonus payments of \$500 in the aggregate and reduced the cash consideration by the amount of the bonus, and (ii) certain employees of the Moscow studio and GMRL had the vesting of an aggregate of approximately 150 shares subject to equity awards accelerated.

Pursuant to the APLA, the Company sold four mobile games (and related intellectual property and other rights) developed by the Moscow Studio: (i) Last Day Alive, (ii) Heroes of Destiny, (iii) a game that was in development featuring a male celebrity, and (iv) Furiosa. The Company transferred all rights and obligations under certain contracts related to the

Table of Contents

game featuring a male celebrity, including, but not limited to, the obligation to pay the remaining approximately \$1,500 in minimum guarantee and other payments under these contracts. The Company also agreed to provide MGL with a non-exclusive, perpetual, worldwide, irrevocable, non-transferrable, royalty-free license to certain development tools and technology necessary to use, develop, publish, exploit and sell the purchased games and that MGL and/or its affiliates may use for the development of other of its products.

The total cash consideration under the SPA and APLA was \$3,226, of which \$1,726 was received in January 2018. The remaining \$1,500, net of a transition bonus payment of \$500, was received in April 2018 upon completion of the transition of the legacy titles from the Moscow Studio to the Company's Hyderabad studio.

In connection with the divestiture, the Company recorded a loss of \$6,459 in the year ended December 31, 2017, which is included in other expense on the consolidated statement of operations. This was primarily comprised of a \$10,000 charge related to the assignment of one of the contract related to the male celebrity, a \$1,220 charge related to the write-off of goodwill associated with the Moscow studio and a \$479 charge related to the write-off of net assets associated with the Moscow studio. These charges were partially offset by \$3,226 in cash paid by Saber and MGL, \$1,500 related to the assumption of obligations by MGL under the contract related to the male celebrity, and \$514 related to the transition services provided by Saber.

In connection with the activities related to the transition under the TSA, the Company recorded the following expenses in the year ended December 31, 2018:

- \$500 related to bonuses that became due to the employees of the Moscow Studio and GMRL;
- \$514 related to the vesting of 147 shares subject to equity awards held by certain employees of the Moscow Studio and GMRL; and
- \$515 related to the amortization of transition services assets that were capitalized as part of the transaction consideration.

The Company's divestiture of the Moscow Studio was part of the Company's efforts to consolidate its studio locations, focusing on a new scaled creative center in San Francisco and a low cost, repeatable location in Hyderabad, India. This divestiture was not presented in discontinued operations in the consolidated statement of operations, because it did not represent a strategic shift in the Company's business and is not expected to have a significant effect on the Company's operations or financial results, as the Company continued operating similar businesses after the divestiture.

Dairy Free Games, Inc.

On August 1, 2017 (the “Merger Date”), the Company completed the acquisition of Dairy Free Games, Inc. (“Dairy Free”) by acquiring 100% of its equity pursuant to an Agreement and Plan of Merger (the “Dairy Free Merger Agreement”) by and among the Company, Winterfell Acquisition Corp., a Delaware corporation and wholly owned subsidiary of the Company, and Dairy Free. Dairy Free, which was based in California, was building a mobile real-time strategy game. The Company acquired Dairy Free in order to expand its game offerings on smartphones and tablets.

Pursuant to the terms of the Dairy Free Merger Agreement, the Company paid \$2,000 in cash for the outstanding common stock of Dairy Free. The Company had previously acquired from Dairy Free shares of its series A preferred stock (“Series A Preferred Stock”), as further described below, for \$2,000. The fair value of the Series A Preferred Stock as of the Merger Date was determined to be equal to the original investment amount of \$2,000. The transaction was accounted for as a business combination under the acquisition method of accounting.

Table of Contents

The Company allocated the purchase price to the individually identifiable assets acquired and liabilities assumed based on their estimated fair values on the acquisition date. The excess of the purchase price over those fair values was recorded as goodwill. The determination of these fair values was based on estimates and assumptions requiring significant judgments. While the Company believes that its estimates and assumptions underlying the valuations are reasonable, different estimates and assumptions could result in different valuations assigned to the individual assets acquired and liabilities assumed, and the resulting amount of goodwill. The following table summarizes the fair values of assets acquired and liabilities assumed at the date of acquisition:

Assets acquired:	
Cash and cash equivalents	\$ 341
Intangible assets:	
In-process research and development	2,700
Other current assets	32
Goodwill	573
Total assets	3,646
Liabilities assumed:	
Deferred tax liability	(294)
Other accrued liabilities	(2)
Total liabilities assumed	(296)
Net acquired assets	\$ 3,350

In-process research and development included in the table above was related to a game that Dairy Free was in process of developing as of the valuation date. During the year ended December 31, 2018, the Company decided not to proceed with further development of that game and recorded an impairment charge of \$2,700 for the related in-process research and development in Impairment and amortization of intangible assets expense in its consolidated statements of operations. Pursuant to ASC 805, the Company incurred and expensed a total of \$611 in acquisition and transitional costs associated with the acquisition of Dairy Free during the year ended December 31, 2017. These costs consisted of \$269 of research and development expense and \$342 of general and administrative expense.

The Company allocated the residual value of \$573 to goodwill. The goodwill recognized is attributable primarily to expected synergies and the assembled workforce of Dairy Free. Goodwill will not be amortized but will be tested for impairment at least annually. Goodwill created as a result of the Dairy Free acquisition is not deductible for tax purposes.

In January 2016, the Company acquired a minority equity stake and entered into a commercial agreement with Dairy Free. As part of the arrangement, the Company invested \$2,000 in Dairy Free's Series A Preferred Stock. The preferred stock investment was recorded at cost. The Company had also agreed to provide up to \$1,000 of recoupable and non-refundable development funding for a mobile game under development by Dairy Free. The development funding was payable in installments upon Dairy Free achieving certain milestones. The development funding was fully recognized as research and development expense as the development activities were performed. The Company had

recorded \$650 in accrued research and development expenses. The accrued research and development expenses balance of \$650 was also determined to be equal to the fair market value as of the date of the merger and was offset against the goodwill amount resulting from the acquisition of Dairy Free.

Crowdstar Inc.

On November 2, 2016, the Company, acquired shares representing approximately 80.6% of the issued and outstanding voting power of Crowdstar Inc., a Delaware corporation (“Crowdstar”), from Time Warner Inc., Intel Capital Corporation and certain other stockholders of Crowdstar (the “Participating Stockholders”). Crowdstar is a developer of fashion and home decor genre games for mobile devices based in Burlingame, California. The Company acquired Crowdstar to leverage its casual games expertise, assembled workforce and existing mobile games in order to expand the Company’s game offerings on smartphones and tablets. The Company paid approximately \$40,794 in cash to the Participating Stockholders in exchange for the acquired shares. In addition, certain drag-along provisions specified in a voting agreement by and among Crowdstar and certain other stockholders of Crowdstar were triggered. Pursuant to the drag-along provisions, certain other stockholders of Crowdstar were required to tender their Crowdstar capital stock to the Company on the same terms as the Participating Stockholders. Upon acquiring over 90% of the issued and outstanding voting power of Crowdstar

Table of Contents

pursuant to the drag-along provisions, on December 6, 2016, the Company acquired the remaining issued and outstanding shares of Crowdstar in a short-form merger under the laws of the State of Delaware for an additional \$4,667 for a total of \$45,461 for 100% ownership of Crowdstar.

The allocation of the purchase price is based on valuations derived from estimated fair value assessments and assumptions used by the Company. While the Company believes that its estimates and assumptions underlying the valuations are reasonable, different estimates and assumptions could result in different valuations assigned to the individual assets acquired and liabilities assumed, and the resulting amount of goodwill. The following table summarizes the fair values of assets acquired and liabilities assumed at the date of acquisition:

Assets acquired:	
Cash and cash equivalents	\$ 4,492
Accounts receivable	3,905
Prepaid expenses	521
Other current assets	34
Fixed assets	315
Intangible assets:	
Titles, content and technology	16,000
Goodwill	28,776
Total assets	54,043
Liabilities assumed:	
Accounts payable	(584)
Accrued liabilities	(4,284)
Deferred revenue	(1,500)
Note payable - current portion	(1,279)
Long term liabilities	(935)
Total liabilities assumed	(8,582)
Net acquired assets	\$ 45,461

Acquisition-related intangibles included in the above table are finite-lived and are being amortized on a straight-line basis over their estimated lives of three to five years, which approximates the pattern in which the economic benefits of the intangible assets are expected to be realized. Of the total purchase price, \$16,000 was allocated to identifiable intangible assets. Pursuant to ASC 805, the Company incurred and expensed a total of \$0, \$3,616 and \$802 of transitional costs associated with the acquisition of Crowdstar during the years ended December 31, 2018, December 31, 2017 and December 31, 2016, respectively. These costs consisted of \$2,936 of research and development expense, and \$680 of general and administrative expense for the year ended December 31, 2017 and were primarily general and administrative related expenses for the year ended December 31, 2016.

The Company allocated the residual value of \$28,776 to goodwill. Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired. In accordance with ASC 350, goodwill will

not be amortized but will be tested for impairment at least annually. Goodwill created as a result of the Crowdstar acquisition is not deductible for tax purposes.

Plain Vanilla, Corp.

On December 19, 2016, the Company acquired substantially all of the intangible assets and certain other assets of Plain Vanilla Corp. (“Plain Vanilla”), the developer of the QuizUp interactive software application for mobile devices, based in Reykjavik, Iceland. The Company acquired these assets in order to expand the Company’s game offerings on smartphones and tablets. The Company forgave and canceled \$7,500 in aggregate principal amount of convertible promissory notes of Plain Vanilla held by the Company, and all interest thereon, in exchange for acquiring the QuizUp assets and technology and other receivables. The deemed fair value of the consideration as of the acquisition date was determined to be \$3,200. The acquired assets represent a business as defined in ASC 805, Business Combinations. The Company has integrated the acquired assets into the Company’s existing business. The asset purchase agreement also contained customary representations, warranties and covenants, including non-competition and indemnification provisions.

Table of Contents

The allocation of the purchase price is based on valuations derived from estimated fair value assessments and assumptions used by the Company. While the Company believes that its estimates and assumptions underlying the valuations are reasonable, different estimates and assumptions could result in different valuations assigned to the individual assets acquired. The following table summarizes the fair values of assets acquired at the date of acquisition:

Fair value of purchase consideration:	\$ 3,200
Assets acquired:	
Cash	\$ 1,200
Accounts receivable	183
Intangible assets:	
Title, content and technology	1,817
Total Assets acquired	\$ 3,200

Acquisition-related intangibles included in the above table are finite-lived and are being amortized on a straight-line basis over their estimated lives of three years, which approximates the pattern in which the economic benefits of the intangible assets are expected to be realized. Of the total purchase price, \$1,817 was allocated to identifiable intangible assets. No residual value was allocated to goodwill.

Valuation Methodology

The Company valued titles, content and technology primarily using the Multi-Period Excess Earnings (“MPEE”) method of the income approach and key assumptions used included: projected revenue, cost of goods sold, and operating expenses for Crowdstar’s legacy titles, the future amortization tax benefit of the legacy titles, and a discount rate of between 20% and 35%.

The fair value of the in-process research and development acquired from Dairy Free was determined using the replacement cost method under the cost approach. The replacement cost was estimated based on the historical research and development expenses incurred, adjusted for an estimated developer’s profit and rate of return in accordance with accepted valuation methodologies.

The fair value of Crowdstar’s deferred revenue was determined to be \$1,500 as of the valuation date. This was valued using the estimated costs including hosting fees and salaries and benefits to support the contractual obligations associated with these revenue, plus a market participant margin. The deferred revenue will be recognized on a straight-line basis over nine months from the valuation date.

As of the valuation date, Crowdstar was in process of developing Design Home, which was launched in the fourth quarter of 2016.

Pro Forma Financial Information

The results of operations for Dairy Free, Crowdstar and Plain Vanilla and the estimated fair market values of the assets acquired and liabilities assumed have been included in the Company's consolidated financial statements since their respective dates of acquisition. For the year ended December 31, 2017 and since the date of its acquisition, Dairy Free had no impact on the Company's gross revenue and increased the Company's net losses by \$1,081. For the year ended December 31, 2016 and since the dates of their respective acquisitions, Crowdstar and Plain Vanilla contributed approximately \$2,111 to the Company's gross revenue and increased net losses by \$9,194. The unaudited pro forma financial information in the table below summarizes the combined results of the Company's operations and those of Dairy Free, Crowdstar and Plain Vanilla for the periods shown as if the acquisition of Dairy Free, Crowdstar and Plain Vanilla had each occurred on January 1, 2016. The pro forma financial information includes the business combination accounting effects of the acquisition, including amortization charges from acquired intangible assets. The pro forma financial information presented below is for informational purposes only, and is subject to a number of estimates, assumptions and other uncertainties.

Table of Contents

	Year ended December 31, (unaudited)	
	2017	2016
Total pro forma revenue	\$ 286,827	\$ 245,483
Pro forma net loss	(98,450)	(100,018)
Pro forma net loss per share - basic	(0.73)	(0.76)
Pro forma net loss per share - diluted	(0.73)	(0.76)

NOTE 4 — FAIR VALUE MEASUREMENTS

Fair Value Measurements

The Company accounts for fair value in accordance with ASC 820, Fair Value Measurements and Disclosures (“ASC 820”). Fair value is defined under ASC 820 as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value under ASC 820 must maximize the use of observable inputs and minimize the use of unobservable inputs. The Company uses a three-tier hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 — Quoted prices in active markets for identical assets or liabilities.

Level 2 — Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

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As of December 31, 2018, the Company's financial assets and financial liabilities are presented below at fair value and were classified within the fair value hierarchy as follows:

	Level 1	Level 2	Level 3	December 31, 2018
Financial Assets				
Cash and cash equivalents	\$ 97,834	\$ —	\$ —	\$ 97,834
Restricted cash	110	—	—	110
Other investments	—	—	1,410	1,410
Total Financial Assets	\$ 97,944	\$ —	\$ 1,410	\$ 99,354

As of December 31, 2017, the Company's financial assets and financial liabilities are presented below at fair value and were classified within the fair value hierarchy as follows:

	Level 1	Level 2	Level 3	December 31, 2017
Financial Assets				
Cash and cash equivalents	\$ 63,764	\$ —	\$ —	\$ 63,764
Restricted cash	602	—	—	602
Other investments	—	—	1,410	1,410
Total Financial Assets	\$ 64,366	\$ —	\$ 1,410	\$ 65,776

The Company's cash and cash equivalents, which were held in operating bank accounts, are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. In addition, the Company's restricted cash is classified within Level 1 of the fair value hierarchy. The carrying value of accounts receivable and payables approximates fair value due to the short time to expected payment or receipt of cash. The carrying value of other investments approximates fair value, as the Company purchased these investments in fiscal 2017 and there have been no

Table of Contents

events or changes in circumstances that would have had a significant effect on the fair value of these investments at December 31, 2018.

NOTE 5 – REVENUE FROM CONTRACTS WITH CUSTOMERS

Disaggregation of Revenue

The following table summarizes revenue from contracts with customers for the year ended December 31, 2018:

	Year Ended December 31, 2018
Micro-Transactions (over-time revenue recognition)	\$ 316,157
Advertisements (point-in-time revenue recognition)	7,121
Offers (point-in-time recognition)	43,000
Other (point-in-time recognition)	283
Total Revenue	\$ 366,561

In the disaggregation above, the Company categorizes revenue by type, and by over-time or point-in-time recognition.

On the date of adoption of ASC 606, the Company had \$20,446 in deferred platform commission fees which was fully amortized in the year ended December 31, 2018. On the date of adoption of ASC 606, the Company had \$3,575 in deferred royalties which were fully amortized in the year ended December 31, 2018. As of December 31, 2018 the Company had \$25,862 and \$4,410 in deferred platform commission fees and deferred royalties, respectively.

Financial Statement Impact of Adopting ASC 606

The cumulative effect of applying the new guidance to all contracts with customers that were not completed as of January 1, 2018 was recorded as an adjustment to accumulated deficit as of the adoption date. As a result of applying the modified retrospective method to adopt the new revenue guidance, the following adjustments were made to accounts on the consolidated balance sheet as of January 1, 2018:

	As Reported December 31, 2017	Adjustments	As Adjusted January 1, 2018
Balances			
Deferred royalties	\$ 4,364	\$ (789)	\$ 3,575
Deferred revenue	\$ 77,403	\$ (9,615)	\$ 67,788
Accumulated deficit	\$ (436,110)	\$ 8,826	\$ (427,284)

Sale of Offer Advertisements

Under the previous guidance, the fees received for offer advertisements were deferred and recognized over the average playing period of paying users. Under ASC 606, the sale of offer advertisements that result in users receiving virtual currency for redemption within a game is recognized at the time such advertisements are delivered and reported to the Company as the performance obligations are deemed to be satisfied when the advertisement has been displayed in the game.

Income Taxes

The adoption of ASC 606 primarily resulted in an acceleration of revenue for the year ended December 31, 2018, which in turn generated additional deferred tax liabilities that ultimately reduced the Company's net deferred tax asset position. As the Company fully reserves its net deferred tax assets in the jurisdictions impacted by the adoption of ASC 606, this impact was offset by a corresponding reduction to the valuation allowance.

Practical Expedients

Table of Contents

The Company applied the following expedients available under the cumulative effect method upon adoption of ASC 606:

1. Practical expedient listed under 606-10-65-1(f)(3), and chose not to disclose the amount of consideration allocated to the remaining performance obligations or an explanation of when the Company expects to recognize that amount as revenue for all reporting periods presented before the date of the initial application (i.e., January 1, 2018).
2. Practical expedient listed under 606-10-65-1(h), and chose not to restate contracts that were completed contracts as of the date of initial application (i.e., January 1, 2018).

Impacts on Financial Statement Line Items

The following table compares the reported line items in the balance sheet, statement of operations and cash flows, as of and for the year ended December 31, 2018, to the amounts that the Company would have reported had the previous guidance been in effect:

	As of December 31, 2018		
	Amounts based on previous guidance	Adjustments	As Reported
Balance Sheet			
Deferred royalties	\$ 5,516	\$ (1,106)	\$ 4,410
Total current assets	172,107	(1,106)	171,001
Total assets	315,539	(1,106)	314,433
Deferred revenue	98,152	(12,416)	85,736
Total current liabilities	142,345	(12,416)	129,929
Total liabilities	149,536	(12,416)	137,120
Accumulated deficit	(451,793)	11,310	(440,483)
Total stockholders' equity	166,003	11,310	177,313
Total liabilities and stockholders' equity	\$ 315,539	\$ (1,106)	\$ 314,433

ASC 606 accelerated the recognition of revenue and royalty costs related to offer advertisements which were previously recognized over the estimated average playing period of paying players. As of December 31, 2018, the deferred revenue and deferred royalties would have been higher by \$12,416 and \$1,106, respectively had the previous guidance been in effect.

	Year Ended December 31, 2018		
	Amounts based on previous guidance	Adjustments	As Reported
Statement of Operations			
Revenue	\$ 363,759	\$ 2,802	\$ 366,561
Platform commissions, royalties and other	128,128	317	128,445
Total cost of revenue	137,958	317	138,275
Gross profit	225,801	2,485	228,286
Loss from operations	(14,900)	2,485	(12,415)
Loss before income taxes	(15,135)	2,485	(12,650)
Net loss	\$ (15,684)	\$ 2,485	\$ (13,199)
Net loss per common share - basic and diluted	\$ (0.11)		\$ (0.09)

The acceleration of revenue recognition and royalty costs related to offer advertisements under ASC 606 increased revenue and royalties by \$2,802 and \$317, respectively, for the year ended December 31, 2018.

Table of Contents

The net impact of accounting for revenue and royalties under the new guidance decreased net loss and net loss per share by \$2,485 and \$0.02 per basic and diluted share, respectively, for the year ended December 31, 2018.

	Year Ended December 31, 2018		
	Amounts based on previous guidance	Adjustments	As Reported
Statement of Cash Flows			
Cash flows from operating activities:			
Net loss	\$ (15,684)	\$ 2,485	\$ (13,199)
Adjustments to reconcile net loss to net cash generated from operating activities:			
Deferred royalties	(1,152)	317	(835)
Deferred revenue	20,749	(2,802)	17,947
Net cash generated from operating activities	\$ 32,286	\$ —	\$ 32,286

The adoption of ASC 606 had no impact on the Company's cash flows from operations. The aforementioned impacts resulted in offsetting shifts in cash flows throughout net loss and changes in working capital balances.

Contract Balances

The following table provides information about receivables, contracts assets, and contract liabilities from contracts with customers:

	December 31, 2018	At Adoption
Receivables, which are included in accounts receivable, net	\$ 27,325	\$ 34,673
Contract assets	-	-
Contract liabilities	\$ 85,736	\$ 67,788

The Company receives payments from customers based on billing terms established in the Company's contracts. Contract asset relates to the Company's right to consideration for its completed performance under the contract. At December 31, 2018, there were no contract assets recorded in the Company's consolidated balance sheet. Accounts receivable are recorded when the right to consideration becomes unconditional.

Deferred revenue relates to payments received in advance of performance under the contract. Deferred revenue is recognized as revenue as we perform under the contract. On the date of adoption of ASC 606, the Company had \$67,788 in deferred revenue, which was all earned in the year ended December 31, 2018.

ASC 606 requires an entity to disclose the revenue recognized in the reporting period from performance obligations satisfied (or partially satisfied) in previous periods (for example, due to changes in transaction price). Revenue recognized relating to performance obligations satisfied in prior periods was \$0 for the year ended December 31, 2018.

The Company elects to use the practical expedient under 606-10-50-14 which states an entity need not disclose the information in paragraph 606-10-50-13 for a performance obligation if the following criteria are met:

1. the performance obligation is part of a contract that has an original expected duration of one year or less; and
2. the entity recognizes revenue from the satisfaction of the performance obligation in accordance with paragraph 606-10-55-18 (right to invoice).

Table of Contents

Since all of the Company's contracts have an original expected duration of one year or less, the Company elects to use this practical expedient and does not disclose the aggregate transaction price allocated to unsatisfied or partially satisfied performance obligations.

NOTE 6 — BALANCE SHEET COMPONENTS

Accounts Receivable

	December 31,	
	2018	2017
Accounts receivable	\$ 27,325	\$ 35,510
Less: Allowance for doubtful accounts	—	(837)
	\$ 27,325	\$ 34,673

Accounts receivable include amounts billed and unbilled as of the respective balance sheet dates, but net of platform commissions to the Company's Digital Storefronts.

The movement in the Company's allowance for doubtful accounts is as follows:

Description	Balance			Balance
	at Beginning of Year	Additions	Deductions	at End of Year
Year ended December 31, 2018	\$ 837	\$ -	\$ (837)	\$ -
Year ended December 31, 2017	\$ 837	\$ -	\$ -	\$ 837
Year ended December 31, 2016	\$ 716	\$ 168	\$ (47)	\$ 837

The Company had no significant write-offs or recoveries during the years ended December 31, 2018, 2017, and 2016.

Property and Equipment

	December 31,	
	2018	2017
Computer equipment	\$ 7,281	\$ 6,051
Furniture and fixtures	2,076	1,666
Software	3,394	3,294
Leasehold improvements	11,230	9,857
	23,981	20,868
Less: Accumulated depreciation and amortization	(10,093)	(6,238)
	\$ 13,888	\$ 14,630

Depreciation for the years ended December 31, 2018, 2017 and 2016 was \$3,855, \$3,195 and \$2,947, respectively.

NOTE 7 – 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 amounts shown in the statements of cash flows:

	Year Ended		
	December 31,		
	2018	2017	2016
Cash and cash equivalents at beginning of period	\$ 63,764	\$ 102,102	\$ 180,542
Restricted cash at beginning of the period	602	1,312	1,498
Cash, cash equivalents and restricted cash at beginning of period	\$ 64,366	\$ 103,414	\$ 182,040
Cash and cash equivalents at end of period	97,834	63,764	102,102
Restricted cash at end of the period	110	602	1,312
Cash, cash equivalents and restricted cash at end of period	\$ 97,944	\$ 64,366	\$ 103,414

Table of Contents

The Company's restricted cash is included in current assets as of December 31, 2018, and 2017, respectively. As of December 31, 2016, the Company's restricted cash is included in long term assets. As of December 31, 2018, restricted cash primarily includes deposits that the Company has provided for lines of credit to secure its obligations under contracts with certain brand licensors.

NOTE 8 — GOODWILL AND INTANGIBLE ASSETS

Intangible Assets

The Company's intangible assets were acquired primarily in various acquisitions as well as in connection with the purchase of certain trademarks, brand assets and licensed content. The carrying amounts and accumulated amortization expense of the acquired intangible assets, including the impact of foreign currency exchange translation, at December 31, 2018 and December 31, 2017 were as follows:

	Estimated Useful Life	December 31, 2018			December 31, 2017		
		Gross Carrying Value *	Accumulated Amortization Expense *	Net Carrying Value *	Gross Carrying Value *	Accumulated Amortization Expense *	Net Carrying Value *
Intangible assets amortized to cost of revenue:							
Titles, content and technology	3 - 5 yrs	\$ 21,117	(12,203)	8,914	\$ 40,317	\$ (27,248)	\$ 13,069
Carrier contract and related relationships	5 yrs	700	(648)	52	5,000	(3,398)	1,602
Trademarks	7 yrs	5,000	(4,821)	179	5,000	(4,107)	893
In-process research and development	N/A	—	—	—	2,700	—	2,700
Total intangibles assets		\$ 26,817	\$ (17,672)	\$ 9,145	\$ 53,017	\$ (34,753)	\$ 18,264
* Including impact of							

foreign
exchange

Acquisition-related intangibles included in the above table are finite-lived and are being amortized on a straight-line basis over their estimated lives, which approximate the pattern in which the economic benefits of the intangible assets are realized. The Company has included amortization of acquired intangible assets directly attributable to revenue-generating activities in cost of revenue.

During the year ended December 31, 2018, the Company decided not to proceed with further development of one of its games and recorded an impairment charge of \$2,700 for the related in-process research and development in Impairment and amortization of intangible assets expense in its consolidated statement of operations. During the year ended December 31, 2017, the Company wrote-off fully amortized intangible assets with an aggregate gross book value and accumulated amortization value of \$12,629 as these intangible assets were considered obsolete after the winding down of a foreign subsidiary.

During the years ended December 31, 2018, 2017 and 2016, the Company recorded amortization and impairment expense in the amounts of \$9,119, \$10,331 and \$14,792, respectively, in cost of revenue. No amortization expense was recorded in operating expenses for the years ended December 31, 2018, 2017, and 2016.

As of December 31, 2018, the total expected future amortization related to intangible assets was as follows:

Year Ending December 31,	Amortization to Be Included in Cost of Revenue
2019	4,387
2020	3,258
2021	1,500
Total intangible assets	9,145

Table of Contents

Goodwill

Goodwill for the periods indicated was as follows:

	December 31, 2018	December 31, 2017
Goodwill	\$ 189,338	\$ 189,943
Accumulated impairment losses	(73,111)	(73,111)
Balance as of January 1	116,227	116,832
Goodwill acquired during the year	—	573
Effects of foreign currency exchange	—	42
Write off from the sale of a foreign subsidiary	—	(1,220)
Balance as of period ended	\$ 116,227	\$ 116,227

In accordance with ASC 350, the Company's goodwill is not amortized but is tested for impairment on an annual basis or whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. Under ASC 350, the Company performs its annual impairment review of its goodwill balance as of September 30 or more frequently if triggering events occur.

The Company evaluates qualitative factors and overall financial performance to determine whether it is necessary to perform the first step of the two-step goodwill test. This step is referred to as "Step 0." Step 0 involves, among other qualitative factors, weighing the relative impact of factors that are specific to the reporting unit as well as industry and macroeconomic factors. After assessing those various factors, if it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, then the entity will need to proceed to the first step of the goodwill impairment test. ASC 350 requires a multiple-step approach to testing goodwill for impairment for each reporting unit annually, or whenever events or changes in circumstances indicate the fair value of a reporting unit is below its carrying amount. The first step measures for impairment by applying the fair value-based tests at the reporting unit level. The second step (if necessary) measures the amount of impairment by applying the fair value-based tests to individual assets and liabilities within each reporting unit. The fair value of the reporting units is estimated using a combination of the market approach, which utilizes comparable companies' data, and/or the income approach, which uses discounted cash flows.

During the third quarters of fiscal 2018 and 2017, the Company performed a "Step 0" qualitative assessment for its reporting unit. Based on the assessment, the Company concluded that it was more likely than not that the fair value of the reporting unit was greater than its carrying amount, and as a result, did not proceed to further impairment testing. Accordingly, the Company did not recognize an impairment of goodwill during the years ended December 31, 2018 and December 31, 2017.

During the three months ended December 31, 2017, the Company recorded a prepaid royalty impairment charge of \$26,067. However, the Company's market capitalization remained well above its carrying value during that period. Based on the results of the interim goodwill impairment test, as of December 31, 2017, the Company concluded that its goodwill was not impaired.

The Company performed its annual impairment assessment as of September 30, 2016 and determined a Step 1 analysis was necessary due to a significant decline in its market capitalization and the significant impairment of prepaid royalties recorded during the three months ended September 30, 2016. Based on the results of the Step 1 analysis, the Company concluded that the fair value of the reporting unit was greater than the carrying value of the reporting unit based on a methodology that utilized both an income approach and a market approach. The Company considered valuation factors including its market capitalization, future discounted cash flows and an estimated control premium based upon a review of comparable market transactions. Accordingly, the Company did not recognize an impairment of goodwill during the year ended December 31, 2016.

Any material impairment of prepaid royalty and license fee assets in the future periods may require the Company to perform a goodwill impairment assessment. Such assessment could result in impairments to the Company's goodwill, which could adversely impact the Company's results of operations.

Table of Contents

NOTE 9 — COMMITMENTS AND CONTINGENCIES

Leases

The Company leases office space under non-cancelable operating facility leases with various expiration dates through December 2027. Rent expense for the years ended December 31, 2018, 2017 and 2016 was \$5,759, \$4,472 and \$4,827, respectively. The terms of the facility leases provide for rental payments on a graduated scale. The Company recognizes rent expense on a straight-line basis over the lease period, and has accrued for rent expense incurred but not paid. The deferred rent balance was \$5,284 and \$4,940 at December 31, 2018 and 2017, respectively, of which \$5,164 and \$4,850 was included within other long-term liabilities at December 31, 2018 and 2017, respectively.

In May 2017, the Company entered into a lease for approximately 57,000 square feet of office space for its San Francisco headquarters (the “Lease”). The term of the Lease began on July 1, 2017 and the Company’s obligation to pay rent started on December 4, 2017 (the “Rent Commencement Date”). The term of the Lease will expire on the tenth anniversary of the Rent Commencement Date.

At December 31, 2018, future minimum lease payments under non-cancelable operating leases were as follows:

Year Ending December 31,	Minimum Operating Lease Payments
2019	\$ 5,486
2020	5,219
2021	4,609
2022	4,637
2023 and thereafter	24,894
	\$ 44,845

Minimum Guaranteed Royalties and Developer Commitments

The Company has entered into license and publishing agreements with various celebrities, Hollywood studios, athletes, sports organizations, and other well-known brands and properties to develop and publish games for mobile devices. Pursuant to some of these agreements, the Company is required to make minimum guaranteed royalty payments regardless of revenue generated by the applicable game, which may not be dependent on any deliverables.

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The significant majority of these minimum guaranteed royalty payments are recoupable against future royalty obligations that would otherwise become payable, or in certain circumstances, where not recoupable, are capitalized and amortized over the lesser of (1) the estimated life of the title incorporating licensed content or (2) the term of the license agreement.

At December 31, 2018, future unpaid minimum guaranteed royalty commitments were as follows:

Year Ending December 31,	Future Minimum Guarantee Commitments
2019	\$ 5,004
2020	2,300
	\$ 7,304

The amounts represented in the table above reflect the Company's minimum cash obligations for the respective calendar years, but do not necessarily represent the periods in which they will be expensed in the Company's consolidated financial statements.

Licensor commitments include \$7,265 of commitments due to licensors that have been recorded in current and long-term liabilities and a corresponding amount in current and long-term assets because payment is not contingent upon

Table of Contents

performance by the licensor. The classification of commitments between long-term and short-term is determined based on the timing of recoupment of earned royalties calculated on projected revenue for the licensed intellectual property games.

Income Taxes

As of December 31, 2018, unrecognized tax benefits have been netted against deferred tax assets and potential interest and penalties are classified within “other long-term liabilities” on the Company’s consolidated balance sheets. As of December 31, 2018, the settlement of the Company’s income tax liabilities could not be determined; however, the liabilities are not expected to become due within the next 12 months.

Indemnification Arrangements

The Company has entered into agreements under which it indemnifies each of its officers and directors during his or her lifetime for certain events or occurrences while the officer or director is or was serving at the Company’s request in that capacity. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company has a director and officer insurance policy that limits its exposure and enables the Company to recover a portion of any future amounts paid. Accordingly, the Company had recorded no liabilities for these agreements as of December 31, 2018, and 2017.

In the ordinary course of its business, the Company includes standard indemnification provisions in most of its commercial agreements with Digital Storefronts and licensors. Pursuant to these provisions, the Company generally indemnifies these parties for losses suffered or incurred in connection with its games, including as a result of intellectual property infringement, viruses, worms and other malicious software, and legal or regulatory violations. The term of these indemnity provisions is generally perpetual after execution of the corresponding license agreement, and the maximum potential amount of future payments the Company could be required to make under these provisions is often unlimited. To date, the Company has not incurred costs to defend lawsuits or settle indemnified claims of these types. As a result, the Company believes the estimated fair value of these indemnity provisions is minimal. Accordingly, the Company had recorded no liabilities for these provisions as of December 31, 2018 and 2017.

Contingencies

From time to time, the Company is subject to various claims, complaints and legal actions in the normal course of business. The Company assesses its potential liability by analyzing specific litigation and regulatory matters using

available information. The Company's estimate of losses is developed in consultation with inside and outside counsel, which involves a subjective analysis of potential results and outcomes, assuming various combinations of appropriate litigation and settlement strategies. After taking all of the above factors into account, the Company determines whether an estimated loss from a contingency should be accrued by assessing whether a loss is deemed reasonably probable and the amount can be reasonably estimated. The Company further determines whether an estimated loss from a contingency should be disclosed by assessing whether a material loss is deemed reasonably possible. Such disclosure will include an estimate of the additional loss or range of loss or will state that an estimate cannot be made.

On March 14, 2018, Jeffrey Tseng, the former Chief Executive Officer of Crowdstar, filed a complaint in the Superior Court of the State of California for the County of Santa Clara against Time Warner Inc., Rachel Lam, Intel Capital Corporation, Middlefield Ventures Inc. and Jose Blanc (collectively, the "Non-Glu Defendants"), the Company and additional yet-to-be-named defendants. The complaint alleges (i) breach of fiduciary duty by the Non-Glu Defendants, (ii) aiding and abetting breach of fiduciary duty by the Company and (iii) intentional interference with contract, intentional interference with prospective economic advantage, negligent interference with prospective economic advantage and unfair competition by each of the defendants, in each case relating to circumstances arising from the Company's acquisition of Crowdstar and the events leading up to the acquisition. Mr. Tseng is seeking compensatory damages and exemplary damages, each in an amount to be determined at trial, along with costs of suit, reasonable attorneys' fees and such other relief as the Court may deem proper. The first Case Management Conference, was held on July 20, 2018. The Company and the Non-Glu Defendants filed demurrers in response to Mr. Tseng's complaint on August 17, 2018, Mr. Tseng filed responses to these demurrers on September 17, 2018, and the Company and the Non-Glu Defendants filed reply briefs in support of their demurrers on October 15, 2018. A hearing with respect to the

Table of Contents

demurrers was held on November 30, 2018. On January 24, 2019, the judge issued an order sustaining the demurrers on all six claims and gave Mr. Tseng 10 days' leave to amend his complaint. The Company believes that the allegations against it are without merit and intends to continue to vigorously defend itself in this matter.

The Company does not believe it is party to any currently pending litigation, the outcome of which is reasonably possible to have a material adverse effect on its operations, financial position or liquidity. However, the ultimate outcome of any litigation is uncertain and, regardless of outcome, litigation can have an adverse impact on the Company because of defense costs, potential negative publicity, diversion of management resources and other factors.

NOTE 10 — STOCKHOLDERS' EQUITY

Common Stock

At December 31, 2018, the Company was authorized to issue 250,000 shares of common stock. As of December 31, 2018, the Company had reserved 42,048 shares for future issuance under its stock plans and outstanding warrants.

Preferred Stock

At December 31, 2018, the Company was authorized to issue 5,000 shares of preferred stock.

Warrants to Purchase Common Stock

Celebrity Warrants

During 2014 and 2015, the Company issued warrants to celebrity licensors, and entities affiliated with one of the celebrity licensors, to purchase up to an aggregate of 1,600 shares of the Company's common stock, subject to adjustments for dividends, reorganizations and other common stock events (collectively, the "Celebrity Warrants"). With respect to Celebrity Warrants covering 1,000 shares, such warrants vested with respect to 50% of the underlying shares upon public announcement of the related license agreement, with the remaining shares vesting in equal monthly installments over 24 months from September 2017. With respect to warrants covering 500 shares issued in 2014, such warrants vested in equal monthly installments over 60 months term of the license agreement with

the applicable celebrity, subject to full acceleration of vesting under specified circumstances, as stipulated in such license agreement. The acceleration condition for these warrants was satisfied in April 2017 which resulted in full vesting of the remaining warrants. With respect to the remaining Celebrity Warrants covering 100 shares issued in 2015, such warrants vest in equal monthly installments over 60 months term of the license agreement with the applicable celebrity.

As of December 31, 2018, Celebrity Warrants covering 1,600 shares of the Company's common stock were outstanding.

During the years ended December 31, 2018 and 2017, the Company recorded \$1,046 and \$569, respectively, of non-cash warrant related expense in cost of revenue as the mobile games featuring these celebrities licensors were not expected to generate meaningful revenue over their lifetime. The amount recognized as expense with respect to these Celebrity Warrants was immaterial for the year ended December 31, 2016.

MGM Warrants

In July 2013, the Company and MGM Interactive Inc. ("MGM") entered into a warrant agreement that provided MGM the right to purchase up to 3,333 shares of the Company's common stock subject to adjustments for dividends, reorganizations and other common stock events (the "MGM Warrant"). Warrants covering 1,667 shares of the Company's common stock expired in July 2018 as the conditions required for vesting of such warrants were not satisfied. No MGM Warrants were outstanding as of December 31, 2018.

Table of Contents

The Company estimated the fair value of the warrants using the Black-Scholes valuation model and the weighted average assumptions noted in the following table:

	Year Ended December 31,		
	2018	2017	2016
Dividend yield	— %	— %	— %
Risk-free interest rate	2.53 %	1.65 %	1.76 %
Expected volatility	56.73 %	51.81 %	57.54 %
Expected term (in years)	3.51	3.52	4.78

Warrants outstanding at December 31, 2018 were as follows:

	Number of Shares Outstanding Under Warrant	Weighted Average Exercise Price per Share	Average Contractual Term
Warrants outstanding, December 31, 2016	4,267	\$ 3.61	4.78
Granted	-	-	
Exercised	(1,000)	3.00	
Warrants outstanding, December 31, 2017	3,267	\$ 3.79	5.33
Granted	-	-	
Exercised	-	-	
Expired	(1,667)	-	
Warrants outstanding, December 31, 2018	1,600	\$ 4.61	5.44

During the years ended December 31, 2018, 2017, and 2016, warrant holders exercised warrants to purchase 0, 1,000, and 0 shares of the Company's common stock, respectively, and the Company received gross proceeds of \$0, \$3,000, and \$0, respectively, in connection with these exercises.

NOTE 11 — STOCK OPTION AND OTHER BENEFIT PLANS

2007 Equity Incentive Plan

In 2007, the Company's Board of Directors adopted, and the Company's stockholders approved, the 2007 Equity Incentive Plan (the "2007 Plan"). The 2007 Plan permits the Company to grant stock options, RSUs, PSUs, PSOs and other stock-based awards to employees, non-employee directors and consultants.

In April 2017, the Company's Board of Directors approved, and in June 2017, the Company's stockholders approved, the Third Amended and Restated 2007 Equity Incentive Plan (the "Third Amended 2007 Plan"). The Third Amended 2007 Plan includes an increase of 8,000 shares in the aggregate number of shares of common stock authorized for issuance under the plan. It also includes (i) a minimum vesting requirement, pursuant to which each share that is subject to a stock-based award may not vest prior to the first anniversary of the date of grant of such stock-based award (subject to a carve-out of 5% of the shares reserved for issuance under the plan) and (ii) a limitation on the value of stock-based awards that may be granted to any non-employee director in any calendar year.

In April 2018, the Company's Board of Directors approved, and in June 2018, the Company's stockholders approved, the Fourth Amended and Restated 2007 Equity Incentive Plan (the "Fourth Amended 2007 Plan"). The Fourth Amended 2007 Plan includes an increase of 10,000 shares in the aggregate number of shares of common stock authorized for issuance under the plan. It also removed the limitation on the number of shares that can be issued in any calendar year to a participant.

The Company may grant options under the 2007 Plan at prices no less than 85% of the estimated fair value of the shares on the date of grant as determined by its Board of Directors, provided, however, that (i) the exercise price of an incentive stock option ("ISO") or non-qualified stock options ("NSO") may not be less than 100% or 85%, respectively, of the estimated fair value of the underlying shares of common stock on the grant date, and (ii) the exercise price of an

Table of Contents

ISO or NSO granted to a 10% stockholder may not be less than 110% of the estimated fair value of the shares on the grant date. The fair value of the Company's common stock is determined by the last sale price of such stock on the Nasdaq Global Select Market on the date of determination. The stock options granted to employees generally vest with respect to 25% of the underlying shares one year from the vesting commencement date and with respect to an additional 1/48 of the underlying shares per month thereafter. Stock options granted during 2007 before October 25, 2007 and after June 4, 2015 have a contractual term of ten years and stock options granted on or after October 25, 2007 and before June 4, 2015 have a contractual term of six years.

As of December 31, 2018, 4,766 shares were available for future grants under the Fourth Amended 2007 Plan.

Performance-based equity awards

In 2017, the Company revised its executive compensation program to emphasize a pay-for-performance culture by (1) eliminating annual cash bonus plans for the Company's C-suite executives and corporate vice presidents and eliminating 50% of the annual cash bonus opportunity for the Company's creative leaders for 2018 and replacing these executives' respective annual cash bonus opportunity with PSOs and (2) having a significant portion of each of these executives' annual equity award be comprised of either PSOs and PSUs in addition to standard time vesting stock options.

In 2018, the Committee determined to continue to emphasize a pay-for-performance culture by (1) eliminating cash bonuses for C-Suite members for 2019 and replacing their cash bonus opportunity with PSOs and eliminating 50% of the annual cash bonus opportunity for the Company's creative leaders and replacing their cash bonus opportunity with PSUs; (2) having a significant portion of C-Suite members' annual equity award be comprised of PSOs in addition to standard time vesting stock options; (3) having a significant portion of corporate vice presidents' annual equity award be comprised of PSUs in addition to standard time vesting stock options; and (4) having each creative leader's annual equity award be comprised solely of PSUs.

The Committee awarded PSUs to certain key employees in the Company. These performance-based awards are subject to the achievement of specified annual performance goals. They become eligible to vest only if the applicable performance goals are achieved and will vest only if the grantee remains employed with the Company through each applicable vesting date. The fair value of these awards is estimated on the date of grant. The PSOs have a contractual term of 10 years. If the performance goals are not met as of the end of the performance period, no compensation expense is recognized and any previously recognized expense is reversed. The expected cost is based on the awards that are probable to vest and is recognized over the service period.

The performance-based awards issued in lieu of cash bonuses in 2017 and 2018 will vest, if the applicable performance goals are achieved, on February 15, 2019 and February 15, 2020, respectively. The performance-based

awards issued as part of annual equity awards in 2017 and 2018 will vest, if the applicable performance goals are achieved, ratably in three annual tranches starting from February 15, 2019 and February 15, 2020, respectively. The number of shares that may vest under these programs ranges from 0% to 200% of the target amounts and will be determined based on the achievement of specified annual performance goals. The PSUs awarded to certain key non-executive employees will vest in March 2019 and September 2019 based on the achievement of specified annual performance goals.

The awards under these programs were granted under the 2007 Plan.

2007 Employee Stock Purchase Plan

In 2007, the Company's Board of Directors adopted and the Company's stockholders approved, the 2007 Employee Stock Purchase Plan (the "2007 Purchase Plan"). The Company initially reserved 667 shares of its common stock for issuance under the 2007 Purchase Plan. On each January 1 for the first eight calendar years after the first offering date, the aggregate number of shares of the Company's common stock reserved for issuance under the 2007 Purchase Plan was increased automatically by the number of shares equal to 1% of the total number of outstanding shares of the Company's common stock on the immediately preceding December 31, provided that the Board of Directors had the power to reduce the amount of the increase in any particular year and provided further that the aggregate number of shares issued over the

Table of Contents

term of this plan may not exceed 5,333. The 2007 Purchase Plan permits eligible employees, including employees of certain of the Company's subsidiaries, to purchase common stock at a discount through payroll deductions during defined offering periods. The price at which the stock is purchased is equal to the lower of 85% of the fair market value of the common stock at the beginning of an offering period or after a purchase period ends.

In January 2009, the 2007 Purchase Plan was amended to provide that the Compensation Committee of the Company's Board of Directors may fix a maximum number of shares that may be purchased in the aggregate by all participants during any single offering period (the "Maximum Offering Period Share Amount"). The Compensation Committee may raise or lower the Maximum Offering Period Share Amount. The Compensation Committee established the Maximum Offering Period Share Amount of 500 shares for the offering period that commenced on February 15, 2009 and ended on August 14, 2009, and a Maximum Offering Period Share Amount of 200 shares for each offering period thereafter. In February 2016, the Committee increased the Maximum Offering Period Share Amount for the offering period that started on February 22, 2016 and for each subsequent offering period to 450 shares.

In April 2017, the Company's Board of Directors approved, and in June 2017, the Company's stockholders approved the Amended and Restated 2007 Employee Stock Purchase Plan (the "Amended 2007 Purchase Plan"). The Amended 2007 Purchase Plan includes an increase of 4,000 shares in the aggregate number of shares of common stock authorized for issuance under the plan and removal of the expiration date of the plan.

As of December 31, 2018, 3,515 shares were available for issuance under the 2007 Purchase Plan.

2008 Equity Inducement Plan

In March 2008, the Company's Board of Directors adopted the 2008 Equity Inducement Plan (the "Inducement Plan") to augment the shares available under its existing 2007 Plan. The Company did not seek stockholder approval for the Inducement Plan. As such, awards under the Inducement Plan were granted in accordance with Nasdaq Listing Rule 5635(c)(4) and only to persons not previously an employee or director of the Company, or following a bona fide period of non-employment, as an inducement material to such individuals entering into employment with the Company.

The Inducement Plan expired by its terms in March 2018. Accordingly, as of December 31, 2018, 0 shares were reserved for future grants under the Inducement Plan.

2018 Equity Inducement Plan

In April 2018, the Compensation Committee of the Company's Board of Directors adopted the 2018 Equity Inducement Plan (the "2018 Plan") to replace the Inducement Plan. The Company did not seek stockholder approval for the 2018 Plan. As such, awards under the Inducement Plan will be granted in accordance with Nasdaq Listing Rule 5635(c)(4) and only to persons not previously an employee or director of the Company, or following a bona fide period of non-employment, as an inducement material to such individuals entering into employment with the Company. The Company may grant NSOs under the Inducement Plan at prices less than 100% of the fair value of the shares on the date of grant, at the discretion of its Board of Directors. The fair value of the Company's common stock is determined by the last sale price of such stock on the Nasdaq Global Select Market on the date of determination. The Company initially reserved 400 shares of common stock for issuance under the 2018 Plan.

As of December 31, 2018, 374 shares were reserved for future grants under the 2018 Inducement Plan.

Table of Contents

RSU Activity

A summary of the Company's RSU activity is as follows:

	Number of Units Outstanding	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Awarded and unvested, December 31, 2015	7,344	\$ 4.40		
Granted	5,094	\$ 2.52		
Vested	(2,422)	\$ 4.51		
Forfeited	(1,792)	\$ 3.86		
Awarded and unvested, December 31, 2016	8,224	\$ 3.33		
Granted	2,360	\$ 2.31		
Vested	(2,863)	\$ 3.45		
Forfeited	(1,909)	\$ 3.01		
Awarded and unvested, December 31, 2017	5,812	\$ 2.96		
Granted	278	\$ 5.90		
Vested	(2,648)	\$ 3.24		
Forfeited	(421)	\$ 2.71		
Awarded and unvested, December 31, 2018	3,021	\$ 3.01	0.96	\$ 24,348

PSU Activity

The following table summarizes the Company's PSU activity:

	Number of Units Outstanding	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Awarded and unvested, December 31, 2016	-	\$ -		
Granted	661	\$ 3.59		
Vested	-	\$ -		
Forfeited	-	\$ -		
Awarded and unvested, December 31, 2017	661	\$ 3.59		
Granted	2,909	\$ 5.85		
Vested	-	\$ -		
Forfeited	(40)	\$ 4.03		
Awarded and unvested, December 31, 2018	3,530	\$ 5.45	1.53	\$ 28,481
PSUs expected to vest at December 31, 2018	2,040	5.25	0.80	\$ 16,463

Table of Contents

PSO Activity

The following table summarizes the Company's PSO activity:

	Number of Share Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Balance as of December 31, 2016	-	\$ -		
Granted	4,246	\$ 3.60		
Vested	-	\$ -		
Forfeited	(76)	\$ 3.97		
Balance as of December 31, 2017	4,170	\$ 3.59		
Granted	2,737	\$ 5.87		
Vested	-	\$ -		
Forfeited	(151)	\$ 3.59		
Balance as of December 31, 2018	6,756	\$ 4.51	9.14	\$ 24,025
PSOs expected to vest at December 31, 2018	5,297	4.27	8.83	\$ 20,135
PSO exercisable at December 31, 2018	-	-	-	\$ -

Stock Option Activity

The following table summarizes the Company's stock option activity:

	Options Outstanding		Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
	Number of Shares	Weighted Average Exercise Price		
Balances at December 31, 2015	7,164	\$ 3.73		
Options granted	10,347	\$ 2.16		
Options canceled	(1,273)	\$ 4.04		
Options exercised	(425)	\$ 1.55		
Balances at December 31, 2016	15,813	\$ 2.74		
Options granted	5,346	\$ 3.10		
Options canceled	(2,716)	\$ 3.16		
Options exercised	(1,511)	\$ 2.73		

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Balances at December 31, 2017	16,932	\$ 2.78		
Options granted	6,092	\$ 4.82		
Options canceled	(1,213)	\$ 3.54		
Options exercised	(3,320)	\$ 2.88		
Balances at December 31, 2018	18,491	\$ 3.39	8.06	\$ 86,581
Options exercisable at December 31, 2018	6,303	\$ 2.83	6.81	\$ 33,010

The Company has computed the aggregate intrinsic value amounts disclosed in the above table based on the difference between the original exercise price of the options and the fair value of the Company's common stock of \$8.07 per share at December 31, 2018. The total intrinsic value of awards exercised during the years ended December 31, 2018, 2017 and 2016 was \$10,957, \$1,732, and \$444, respectively.

Table of Contents

Stock-Based Compensation

The Company recognizes stock-based compensation expense in accordance with ASC 718, and has estimated the fair value of each option award on the grant date using the Black-Scholes option valuation model and the weighted average assumptions noted in the following tables.

Performance Stock Options

	Year Ended December 31,		
	2018	2017	2016
Dividend yield	— %	— %	— %
Risk-free interest rate	2.89 %	2.07 %	— %
Expected volatility	60.2 %	63.3 %	— %
Expected term (years)	5.98	5.81	—

Stock Options

	Year Ended December 31,		
	2018	2017	2016
Dividend yield	— %	— %	— %
Risk-free interest rate	2.63 %	1.76 %	1.39 %
Expected volatility	57.9 %	57.8 %	52.3 %
Expected term (years)	4.00	4.00	4.00

The expected term of stock options gave consideration to early exercises, post-vesting cancellations and the options' contractual term ranging from 6 to 10 years. The Company does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term for the PSOs as the Company has not granted such awards in the past. As a result, the Company used the simplified method to calculate the expected term estimate based on the vesting and contractual terms of the PSOs. Under the simplified method, the expected term is equal to the average of the stock-based awards vesting period and their contractual term. The risk-free interest rate for the expected term of the option is based on the U.S. Treasury Constant Maturity Rate as of the date of grant. The Company based its expected volatility on its own historical volatility for the year ended December 31, 2018 and 2017. For the year ended December 31, 2016, the Company based its expected volatility on its own historical volatility and the historical volatility of a peer group of publicly traded entities. The weighted-average fair value of stock options granted during the year ended December 31, 2018, 2017 and 2016 was \$2.25, \$1.42, and \$0.90 per share, respectively. The weighted average fair value of the PSOs granted during the year ended December 31, 2018 and December 31, 2017 was \$3.38 and \$2.09, respectively.

The cost of RSUs and PSUs are determined using the fair value of the Company's common stock based on the quoted closing price of the Company's common stock on the date of grant. RSUs typically vest and are settled over approximately a four-year period with 25% of the shares vesting on or around the one-year anniversary of the grant date and the remaining shares vesting quarterly thereafter. Compensation cost is amortized on a straight-line basis over the requisite service period.

For the year ended December 31, 2016, the Company calculated employee stock-based compensation expense based on awards ultimately expected to vest and reduced it for actual forfeitures. After the adoption of ASU 2016-09 on January 1, 2017 the Company accounted for forfeitures as they occurred.

The following table summarizes the consolidated stock-based compensation expense by line items in the consolidated statement of operations:

	Year Ended December 31,		
	2018	2017	2016
Research and development	\$ 12,807	\$ 6,460	\$ 4,567
Sales and marketing	2,795	1,289	1,091
General and administrative	8,990	7,314	7,605
Total stock-based compensation expense	\$ 24,592	\$ 15,063	\$ 13,263

Table of Contents

The following table summarizes total compensation expense related to unvested awards not yet recognized as of December 31, 2018:

	Unrecognized Compensation Expense for Unvested Awards
Stock options	\$ 18,089
RSUs	7,739
PSUs (1)	4,515
PSOs (1)	5,767
Total unrecognized compensation expense	\$ 36,110

(1) The unrecognized compensation expense for PSOs and PSUs vesting in FY2021 and FY2022 is not included in the table above as the Company does not have a reasonable basis upon which to estimate the vesting probability of such awards in those future periods.

The unrecognized compensation expense related to stock options and RSUs will be recognized over a weighted average period of 2.63 years and 1.76 years, respectively. The unrecognized stock compensation expense related to unvested PSOs and PSUs will be recognized over a weighted average period of 0.46 and 0.72 years, respectively.

Stock-based compensation expense in the year ended December 31, 2018, was approximately \$24,592 (comprising approximately \$6,386 related to stock options, \$9,195 related to performance-based awards, \$8,084 related to RSUs and \$927 related to the 2007 Purchase Plan).

Stock-based compensation expense in the year ended December 31, 2017, was approximately \$15,063 (comprising approximately \$3,585 related to stock options, \$790 related to performance-based awards, \$10,127 related to RSUs and \$561 related to the 2007 Purchase Plan).

Stock-based compensation expense in the year ended December 31, 2016, was approximately \$13,263 (comprising approximately \$2,275 related to stock options, \$0 related to performance-based awards, \$10,255 related to RSUs and \$733 related to the 2007 Purchase Plan).

Consolidated net cash proceeds from option exercises were \$5,643, \$2,564 and \$294 for the year ended December 31, 2018, 2017 and 2016, respectively. The Company realized no significant income tax benefit from stock option exercises during the year ended December 31, 2018, 2017 and 2016. As permitted by ASC 718, the Company has deferred the recognition of its excess tax benefit from non-qualified stock option exercises.

401(k) Defined Contribution Plan

The Company sponsors a 401(k) defined contribution plan covering all employees. The Company does not match the contributions made by its employees.

NOTE 12 — INCOME TAXES

The components of loss before income taxes by tax jurisdiction were as follows:

	Year Ended December 31,		
	2018	2017	2016
United States	\$ (12,396)	\$ (97,503)	\$ (87,085)
Foreign	(254)	(893)	(656)
Loss before income taxes	\$ (12,650)	\$ (98,396)	\$ (87,741)

Table of Contents

The components of income tax benefit/(provision) were as follows:

	Year Ended December 31,		
Current:	2018	2017	2016
Federal	\$ (96)	\$ 947	\$ 127
State	(8)	(10)	(6)
Foreign	(500)	(521)	(86)
	(604)	416	35
Deferred:			
Federal	—	294	328
Foreign	55	116	(62)
	55	410	266
Total:			
Federal	(96)	1,241	455
State	(8)	(10)	(6)
Foreign	(445)	(405)	(148)
	\$ (549)	\$ 826	\$ 301

The difference between the actual rate and the federal statutory rate was as follows:

	Year Ended December 31,					
	2018		2017		2016	
Tax at federal statutory rate	21.0	%	34.0	%	34.0	%
Meals and Entertainment	(2.0)		(0.1)		(0.2)	
Research and development credit	21.3		2.5		0.9	
Stock-based compensation	17.9		(2.0)		(2.9)	
Revenue from contracts with customers	(14.6)		—		—	
Others	(3.1)		0.6		(1.3)	
Global intangible low-taxed income	(1.7)		—		—	
Valuation allowance	(43.1)		(34.2)		(30.2)	
Effective tax rate	(4.3)	%	0.8	%	0.3	%

Deferred tax assets and liabilities consist of the following:

December 31, 2018

December 31, 2017

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	US	Foreign	Total	US	Foreign	Total
Deferred tax assets:						
Fixed assets	\$ —	\$ 35	\$ 35	\$ 46	\$ 36	\$ 82
Net operating loss carryforwards	50,119	97	50,216	50,902	608	51,510
Accruals, reserves and other	10,853	172	11,025	14,838	101	14,939
Foreign tax credit	5,118	128	5,246	5,895	151	6,046
Stock-based compensation	4,787	—	4,787	2,476	—	2,476
Research and development credit	17,945	—	17,945	14,317	—	14,317
Capitalized research and development	2,835	—	2,835	—	—	—
Other	2,888	—	2,888	2,646	—	2,646
Total deferred tax assets	\$ 94,545	\$ 432	\$ 94,977	\$ 91,120	\$ 896	\$ 92,016
Deferred tax liabilities:						
Fixed assets	\$ (54)	\$ (19)	\$ (73)	\$ —	\$ (16)	\$ (16)
Intangible assets	(513)	—	(513)	(2,112)	—	(2,112)
Net deferred tax assets	93,978	413	94,391	89,008	880	89,888
Less valuation allowance	(93,978)	(4)	(93,982)	(89,008)	(503)	(89,511)
Net deferred tax assets	\$ —	\$ 409	\$ 409	\$ —	\$ 377	\$ 377

The Company has not provided deferred taxes on unremitted earnings attributable to foreign subsidiaries, excluding China, because their earnings are intended to be reinvested indefinitely. No deferred tax asset was recognized since the Company does not believe the deferred tax asset will be realized in the foreseeable future. The amount of accumulated foreign earnings of the Company's foreign subsidiaries totaled \$2,000 as of December 31, 2018. If the Company's foreign earnings were repatriated, additional tax expense might result. The Company determined that the

Table of Contents

calculation of the amount of unrecognized deferred tax liability related to these cumulative unremitted earnings attributable to foreign subsidiaries is not practicable.

The Company recorded a release of its valuation allowance of \$0, \$294, and \$328 during 2018, 2017, and 2016, respectively. The 2017 and 2016 releases were associated with the acquisitions of Dairy Free and Crowdstar in August 2017 and November 2016, respectively. Pursuant to ASC 805-740, changes in the Company's valuation allowance that stem from a business combination should be recognized as an element of the Company's deferred income tax expense or benefit. The Company previously recognized a valuation allowance against its net operating loss carryforwards and determined that it should be able to utilize the benefit of those net operating losses against the deferred tax liabilities of Dairy Free and Crowdstar, respectively; therefore, it has partially released its pre-existing valuation allowance.

In accordance with ASC 740 and based on all available evidence on a jurisdictional basis, the Company believes that it is more likely than not that its deferred tax assets will not be utilized and has recorded a full valuation allowance against its net deferred tax assets in each of its jurisdictions except for entities in Canada, China and India. The Company assesses on a periodic basis the likelihood that it will be able to recover its deferred tax assets. The Company considers all available evidence, both positive and negative, including historical levels of income or losses, expectations and risks associated with estimates of future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance. If it is not more likely than not that the Company expects to recover its deferred tax assets, the Company will increase its provision for taxes by recording a valuation allowance against the deferred tax assets that it estimates will not ultimately be recoverable. The available negative evidence at December 31, 2018 and 2017 included historical and projected future operating losses. As a result, the Company concluded that an additional valuation allowance of \$4,471 and \$18,240 net of the described releases, was required to reflect the change in its deferred tax assets prior to valuation allowance during 2018 and 2017, respectively. As of December 31, 2018 and 2017, the Company considered it more likely than not that its deferred tax assets would not be realized within their respective carryforward periods.

At December 31, 2018, the Company had net operating loss carryforwards of approximately \$218,163 and \$94,641 for federal and state tax purposes, respectively. These carryforwards will expire at various times between 2019 and 2038. In addition, the Company has research and development tax credit carryforwards of approximately \$17,473 for federal income tax purposes and \$19,346 for California tax purposes. The federal research and development tax credit carryforwards will begin to expire in 2023. The California state research credit will carry forward indefinitely. The Company has approximately \$5,108 of foreign tax credits that will begin to expire in 2019. The Company's ability to use its net operating loss carryforwards and federal and state tax credit carryforwards to offset future taxable income and future taxes, respectively, may be subject to restrictions attributable to equity transactions that result in changes in ownership as defined by Internal Revenue Code Section 382.

A reconciliation of the total amounts of unrecognized tax benefits was as follows:

	Year Ended December 31,	
	2018	2017
Beginning balance	\$ 13,391	\$ 11,011
Reductions of tax positions taken during previous years	(59)	(260)
Additions based on uncertain tax positions related to the current period	3,996	2,621
Additions based on uncertain tax positions related to prior periods	3,400	—
Cumulative translation adjustment	(10)	19
Ending balance	\$ 20,718	\$ 13,391

The total unrecognized tax benefits as of December 31, 2018 and 2017 included approximately \$20,548 and \$13,152, respectively, of unrecognized tax benefits that have been netted against deferred tax assets. As of December 31, 2018, the Company does not expect the unrecognized tax benefits, if recognized, to have a material impact on its financial statements. At December 31, 2018, the Company does not anticipate that the liability for uncertain tax positions, excluding interest and penalties, that could decrease within the next twelve months due to the expiration of statutes of limitation in foreign jurisdictions in which the Company does business will have a material impact on its financial statements.

Table of Contents

The Company's policy is to recognize interest and penalties related to unrecognized tax benefits in income tax expense. The Company has accrued \$150 of interest and penalties on uncertain tax positions as of December 31, 2018, as compared to \$131 as of December 31, 2017. Approximately \$27, \$96 and \$128 of accrued interest and penalty expense related to estimated obligations for unrecognized tax benefits was recognized during 2018, 2017 and 2016, respectively.

The Company is subject to taxation in the United States and various foreign jurisdictions. The material jurisdictions subject to examination by tax authorities are primarily the State of California, the United States, Canada, China and India. The Company's federal tax returns are open by statute for tax years 1998 and California tax returns are open by statute for tax years 2003 and forward and could be subject to examination by the tax authorities. The Company's China income tax returns are open by statute for tax years 2015 and forward.

On December 22, 2017, the Tax Cuts and Jobs Act ("The Act") was enacted, which made significant changes to various areas of the U.S. federal income tax law, including lowering of the U.S. corporate tax rate from 35 percent to 21 percent. U.S. GAAP accounting for income taxes requires that the Company record the impacts of any tax law change on its deferred income taxes in the quarter that the tax law change is enacted. Due to the complexities involved in accounting for the enactment of the Act, in January 2018, SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118") to provide guidance for companies that have not completed their accounting for the income tax effects of The Act in the period of enactment. Specifically, SAB 118 states that companies that have not completed accounting for the effects of The Act by financial reporting deadlines may report provisional amounts based on reasonable estimates for items for which the accounting is incomplete. Those provisional amounts will be subject to adjustment during a measurement period that begins in the reporting period that includes The Act's enactment date and ends when a company has obtained, prepared and analyzed the information needed to complete the accounting requirements under ASC 740 Income Taxes. The measurement period should not extend beyond one year from the enactment date. Furthermore, SAB 118 states that if a company cannot make a reasonable estimate for an income tax effect, it should not account for that effect until it can make such an estimate.

In accordance with SAB 118, the Company recorded a provisional amount of a one-time negative adjustment of \$34.9 million for the re-measurement of deferred tax assets and liabilities, offset by a one-time positive adjustment of \$34.9 million for the re-measurement of valuation allowance maintained on these items in its consolidated financial statements for the year ended December 31, 2017. Immaterial adjustments made to the provisional amounts allowed under SAB 118 were identified and recorded as discrete adjustments during the year ended December 31, 2018. The accounting was completed in the fourth quarter of 2018.

The Act subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. The FASB Staff Q&A, Topic 740, No. 5, Accounting for Global Intangible Low-Taxed Income, states that an entity can make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or to provide for the tax expense related to GILTI in the year the tax is incurred as a period expense. Because the Company was still evaluating the GILTI provisions as of December 31, 2017, no GILTI-related deferred amounts were recorded in 2017. After further consideration in the

current year, the Company has elected to account for GILTI as a period cost in the year the tax is incurred.

The one-time Transition Tax is based on the Company's total post-1986 earnings and profits (E&P), which were previously deferred from U.S. income tax under U.S. tax law. As of December 31, 2017, the Company did not expect to have any transition tax liability. Upon further analysis of the Act, Notices and Regulations issued and proposed by the U.S. Department of the Treasury and the Internal Revenue Service, the Company finalized its calculations of the Transition Tax liability and maintains that the Company is not subject to the one-time Transition Tax.

Prior to the enactment of The Act, the Company had asserted indefinite reinvestment on all of its undistributed earnings from foreign subsidiaries. As a result of the enactment of The Act, the Company has reevaluated its historic assertion and continue to assert these earnings to be indefinitely reinvested.

Based on its review of The Act, immaterial adjustments made to the provisional amounts allowed under SAB 118 were identified and recorded as discrete adjustments during the year ended December 31, 2018. In addition, the Company expects that the new legislation will not have a material impact on its future operational results as long as the Company

Table of Contents

maintains a full valuation allowance. It is the Company's policy to record valuation allowances when necessary to reduce deferred tax assets to the amount that it expects to realize. Currently, the Company maintains a full valuation allowance for its deferred tax assets in the U.S. and Hong Kong.

NOTE 13 — SEGMENT REPORTING

ASC 280, Segment Reporting ("ASC 280"), establishes standards for reporting information about operating segments. It defines operating segments as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision-maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company's Chief Executive Officer, who is also chief operating decision maker, makes decisions and manages the Company's operations as one operating segment. The financial information reviewed by him is included within one operating segment for purposes of allocating resources and evaluating financial performance.

	Year Ended December 31,		
	2018	2017	2016
United States of America	\$ 280,264	\$ 216,468	\$ 149,031
Americas, excluding the United States	21,903	15,976	9,127
EMEA	41,585	33,180	24,303
APAC	22,809	21,203	18,120
	\$ 366,561	\$ 286,827	\$ 200,581

The Company attributes its long-lived assets, which primarily consist of property and equipment, to a country primarily based on the physical location of the assets. Property and equipment, net of accumulated depreciation and amortization, summarized by geographic location was as follows:

	December 31,	
	2018	2017
United States of America	\$ 12,653	\$ 13,030
Rest of the World	1,235	1,600
	\$ 13,888	\$ 14,630

NOTE 14 — RESTRUCTURING

During the year ended December 31, 2016, the Company recorded \$2,279 of restructuring charges related to employee termination costs in the Company's Long Beach, California; San Francisco, California; Bellevue, Washington; and Beijing, China offices, and lease termination costs for the Company's Bellevue, Washington and Beijing, China offices. During the year ended December 31, 2017, the Company recorded \$6,019 of restructuring charge related to employee and lease termination costs in the Company's Bellevue, Washington; Long Beach, California; San Francisco, California; Portland, Oregon; and Beijing, China offices. During the year ended December 31, 2018, the Company

Table of Contents

recorded \$240 of restructuring charges related to employee and lease termination costs in the Company's Long Beach, California office.

	Restructuring Workforce	Restructuring Facility	Restructuring Other	Restructuring Total
Balance as of December 31, 2015	\$ 310	\$ —	\$ 31	\$ 341
Charges to operations	1,491	\$ 740	\$ 48	\$ 2,279
Non-cash charges/adjustments	—	122	—	122
Charges settled in cash	(1,801)	(591)	(79)	(2,471)
Balance as of December 31, 2016	\$ —	\$ 271	\$ —	\$ 271
Charges to operations	4,319	1,700	—	6,019
Non-cash charges/adjustments	146	44	—	190
Charges settled in cash	(4,322)	(1,399)	—	(5,721)
Balance as of December 31, 2017	\$ 143	\$ 616	\$ —	\$ 759
Charges to operations	160	80	—	240
Charges settled in cash	(303)	(402)	—	(705)
Balance as of December 31, 2018	\$ —	\$ 294	\$ —	\$ 294

NOTE 15 – QUARTERLY FINANCIAL DATA (unaudited, in thousands)

The following table sets forth unaudited quarterly consolidated statements of operations data for 2018 and 2017. The Company derived this information from its unaudited consolidated financial statements, which it prepared on the same basis as its audited consolidated financial statements contained in this report. In its opinion, these unaudited statements include all adjustments, consisting only of normal recurring adjustments that the Company considers necessary for a fair statement of that information when read in conjunction with the consolidated financial statements and related notes included elsewhere in this report. The operating results for any quarter should not be considered indicative of results for any future period.

	For the Three Months Ended						
	2018		2017				
	March 31,	June 30,	September 30,	December 31,	March 31,	June 30,	September
	(In thousands)						
Revenue	\$ 81,443	\$ 90,193	\$ 99,285	\$ 95,640	\$ 56,788	\$ 68,679	\$ 81,148
Cost of revenue:							
Platform							
commissions,							
royalties and other	29,167	32,386	34,384	32,508	20,860	24,761	28,898
	99	(b) —	—	612	(b) 792	—	464

Impairment of prepaid royalties and minimum guarantees							
Impairment and amortization of intangible assets	1,467	1,468	4,167	2,017	3,262	3,171	2,363
Total cost of revenue	30,733	33,854	38,551	35,137	24,914	27,932	31,725
Gross profit	50,710	56,339	60,734	60,503	31,874	40,747	49,423
Operating expenses:							
Research and development	22,710	22,832	23,839	25,553	25,032	23,989	22,004
Sales and marketing	26,810	29,741	28,874	28,435	17,287	30,952	29,776
General and administrative	7,890	7,608	8,095	8,074	8,497	8,678	8,698
Restructuring charge	80 (a)	—	160 (a)	—	3,712	926	1,402
Total operating expenses	57,490	60,181	60,968	62,062	54,528	64,545	61,880
Loss from operations	(6,780)	(3,842)	(234)	(1,559)	(22,654)	(23,798)	(12,457)
Interest and other income/(expense), net	(251)	(366)	96	286	(122)	53	(271)
Loss before income taxes	(7,031)	(4,208)	(138)	(1,273)	(22,776)	(23,745)	(12,728)
Income tax benefit/(provision)	(175)	(207)	(118)	(49)	12	177	1,057
Net loss	\$ (7,206)	\$ (4,415)	\$ (256)	\$ (1,322)	\$ (22,764)	\$ (23,568)	\$ (11,671)
Net Loss per share							
Basic	\$ (0.05)	\$ (0.03)	\$ (0.00)	\$ (0.01)	\$ (0.17)	\$ (0.17)	\$ (0.09)
Diluted	\$ (0.05)	\$ (0.03)	\$ (0.00)	\$ (0.01)	\$ (0.17)	\$ (0.17)	\$ (0.09)

(a) Includes restructuring charges relating to employee termination costs in the Company's Long Beach office.

(b) These charges are related to impairment of prepaid guaranteed royalties for certain celebrity license agreements, and certain other prepaid royalties.

Table of Contents

NOTE 16 – RELATED PARTY TRANSACTIONS

The Company and an affiliate of Tencent, one of the Company's principal stockholders, entered into an agreement in November 2015 pursuant to which, the Company agreed, subject to certain conditions, to pay in the aggregate, up to \$15,000 in recoupable advanced royalties and non-recoupable license fees related to the Company's Rival Fire title, which amounts were fully paid by December 31, 2016.

During the year ended December 31, 2016, the Company recorded an impairment of \$14,463 for un-recouped advanced royalties and non-recoupable license fees that were paid to an affiliate of Tencent, due to the underperformance of the Company's Rival Fire title which launched during the third quarter of 2016 and the negligible cash flows anticipated for the remaining contractual life of these assets.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Exchange Act. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Based on our evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2018, our disclosure controls and procedures are designed to provide reasonable assurance and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is 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 Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2018 based on the guidelines established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the results of this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with generally accepted accounting principles.

The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing on page 70.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-

Table of Contents

15(f) under the Exchange Act) during the three months ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required for this Item is incorporated by reference from our Proxy Statement to be filed for our 2019 Annual Meeting of Stockholders. For information with respect to our executive officers, see “Executive Officers” at the end of Part I, Item 1 of this report.

We maintain a Code of Business Conduct and Ethics that applies to all employees, officers and directors. Our Code of Business Conduct and Ethics is published on our website at www.glu.com/investors. We disclose on our website amendments to certain provisions of our Code of Business Conduct and Ethics, or waivers of such provisions granted to executive officers and directors.

Item 11. Executive Compensation

The information required for this Item is incorporated by reference from our Proxy Statement to be filed for our 2019 Annual Meeting of Stockholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information set forth in the section titled “Security Ownership of Certain Beneficial Owners and Management” contained in our Proxy Statement to be filed for our 2019 Annual Meeting of Stockholders is incorporated herein by reference.

Equity Compensation Plan Information

The following table sets forth certain information, as of December 31, 2018, concerning securities authorized for issuance under all of our equity compensation plans: our 2007 Equity Incentive Plan (the “2007 Plan”), 2007 Employee Stock Purchase Plan (the “ESPP”), 2008 Equity Inducement Plan (the “2008 Inducement Plan”), and 2018 Equity Inducement Plan (the “2018 Inducement Plan”).

	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under (Excluding Securities Reflected in Column (a)) (c)	
Equity compensation plans approved by security holders	\$ 27,321,781	\$ 3.90	8,281,340	(2)
Equity compensation plans not approved by security holders	4,470,992	(3) \$ 2.49	373,600	(4)
Total	31,792,773		8,654,940	

(1) The weighted average exercise price does not take into account the shares subject to outstanding RSUs and PSUs, which have no exercise price.

(2) Represents 4,766,182 shares available for issuance under our the 2007 Plan, which plan permits the grant of incentive and non-qualified stock options (including PSOs), stock appreciation rights, restricted stock, stock awards and RSUs; and 3,515,158 shares available for issuance under the ESPP.

(3) Represents outstanding options and RSUs under the 2008 Inducement Plan and 2018 Inducement Plan.

(4) Represents shares available for issuance under the 2018 Inducement Plan, under which we may only grant non-qualified

Table of Contents

stock options and RSUs.

The Compensation Committee of our Board of Directors adopted the 2008 Inducement Plan in March 2008 to augment the shares available under our 2007 Plan, and in April 2018, the Compensation Committee adopted the 2018 Inducement Plan to replace the 2008 Inducement Plan which expired by its terms in March 2018. We have not sought stockholder approval for either the 2008 Inducement Plan or the 2018 Inducement Plan. As such, awards under these plans have been granted in accordance with Nasdaq Listing Rule 5635(c)(4) and only to persons not previously an employee or director, or following a bona fide period of non-employment, as an inducement material to such individuals entering into employment with us. As of December 31, 2018, we had reserved a total of 400,000 shares under the 2018 Inducement Plan, of which 26,400 shares were subject to outstanding stock options and 373,600 shares remained available for issuance. In addition, as of December 31, 2018 0 shares issued from our 2008 Inducement Plan remained subject to outstanding stock options remained outstanding.

We may grant non-qualified stock options under the 2018 Inducement Plan at prices less than 100% of the fair value of the shares on the date of grant, at the discretion of our Board of Directors. The fair value of our common stock is determined by the last sale price of our stock on The Nasdaq Global Select Market on the date of determination. If any option or RSU granted under the 2018 Inducement Plan expires or terminates for any reason without being exercised in full, are used to satisfy tax withholding obligations with respect to the award, or otherwise terminate without the underlying shares being issued, such unexercised, tax-settled, or otherwise terminated shares will be available for grant under the 2018 Inducement Plan. All outstanding awards are subject to adjustment for any future stock dividends, splits, combinations, or other changes in capitalization as described in the 2018 Inducement Plan. If we were acquired and the acquiring corporation did not assume or replace the awards granted under the 2018 Inducement Plan, or if we were to liquidate or dissolve, all outstanding awards will expire on such terms as our Board of Directors determines.

For more information regarding the 2018 Inducement Plan, see Note 11 of Notes to Consolidated Financial Statements in Item 8 of this report.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required for this Item is incorporated by reference from our Proxy Statement to be filed for our 2019 Annual Meeting of Stockholders.

Item 14. Principal Accounting Fees and Services.

The information required for this Item is incorporated by reference from our Proxy Statement to be filed for our 2019 Annual Meeting of Stockholders.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a)(1) Financial Statements: The financial statements filed as part of this report are listed on the index to financial statements on page 71.

(2) Financial Schedules: All schedules have been omitted because they are not required, not applicable, not present in amounts sufficient to require submission of the schedule, or the required information is otherwise included.

(b) Exhibits. The exhibits listed on the Exhibit Index (following the Signatures section of this report) are included, or incorporated by reference, in this report.

Item 16. Form 10-K Summary

None.

Table of Contents

Exhibit Number	Exhibit Description	Incorporated by Reference			Filing Date	Filed Herewith
		Form	File No.	Exhibit		
2.01	<u>Stock Transfer Agreement by and among Glu Mobile Inc., Time Warner Inc., Intel Capital Corporation and certain other stockholders of Crowdstar Inc., dated November 2, 2016.</u>	8-K	001-33308	2.01	11/03/16	
3.01	<u>Restated Certificate of Incorporation of Glu Mobile Inc.</u>	S-1/A	333-139493	3.02	02/14/07	
3.02	<u>Amended and Restated Bylaws of Glu Mobile Inc., adopted on March 7, 2014.</u>	8-K	001-33368	99.01	03/13/14	
4.01	<u>Form of Registrant's Common Stock Certificate.</u>	S-1/A	333-139493	4.01	02/14/07	
10.01#	<u>Form of Indemnity Agreement entered into between Glu Mobile Inc. and each of its directors and executive officers, effective as of October 24, 2013.</u>	8-K	001-33368	99.01	10/29/13	
10.02(A)#	<u>Amended & Restated 2007 Equity Incentive Plan, as amended and restated through June 7, 2018.</u>	10-Q	001-33368	10.01	08/08/18	
10.02(B)#	<u>For the 2007 Equity Incentive Plan, forms of (a) Notice of Stock Option Grant, Stock Option Award Agreement and Stock Option Exercise Agreement, (b) Notice of Restricted Stock Award and Restricted Stock Agreement, (c) Notice of Stock Appreciation Right Award and Stock Appreciation Right Award Agreement and (d) Notice of Stock Bonus Award and Stock Bonus Agreement.</u>	S-1/A	333-139493	10.03	02/16/07	
10.02(C)#	<u>For the 2007 Equity Incentive Plan, form of Notice of Restricted Stock Unit Award and Restricted Stock Unit Agreement.</u>	10-Q	001-33368	10.08	08/09/13	

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10.02(D)#	<u>For the 2007 Equity Incentive Plan, forms of (a) Notice of Performance Stock Option Grant Agreement (One Year Vesting Term), (b) Notice of Performance Stock Option Grant Agreement (Three Year Vesting Term), and (c) Notice of Performance Restricted Stock Unit Award Agreement.</u>	10-K	001-33368	10.02(D)	3/9/18
10.03#	<u>2007 Employee Stock Purchase Plan, as amended and restated through June 8, 2017.</u>	10-Q	001-33368	10.01	08/07/17
10.04(A)#	<u>2008 Equity Inducement Plan, as amended effective November 14, 2016.</u>	8-K	001-33368	99.01	11/18/16
10.04(B)#	<u>For the 2008 Equity Inducement Plan, forms of Notice of Stock Option Grant, Stock Option Award Agreement and Stock Option Exercise Agreement.</u>	10-K	001-33368	10.05	03/21/10

Table of Contents

Exhibit Number	Exhibit Description	Incorporated by Reference			Filing Date	Filed Herewith
		Form	File No.	Exhibit		
10.04(C)#	<u>For the 2008 Equity Inducement Plan, form of Notice of Restricted Stock Unit Award and Restricted Stock Unit Award Agreement.</u>	10-K	001-33368	10.05(C)	03/14/14	
10.05(A)#	<u>2018 Equity Inducement Plan</u>	10-Q	001-33368	10.02	08/08/18	
10.05(B)#	<u>For the 2018 Equity Inducement Plan, forms of Notice of Stock Option Grant, Stock Option Award Agreement and Stock Option Exercise Agreement.</u>	10-Q	001-33368	10.03	08/08/18	
10.05(C)#	<u>For the 2008 Equity Inducement Plan, form of Notice of Restricted Stock Unit Award and Restricted Stock Unit Award Agreement.</u>	10-Q	001-33368	10.04	08/08/18	
10.06#	<u>Forms of Stock Option Award Agreement (Immediately Exercisable) and Stock Option Exercise Agreement (Immediately Exercisable) under the Glu Mobile Inc. 2007 Equity Incentive Plan.</u>	10-Q	001-33368	10.05	08/14/08	
10.07#	<u>Executive Chairman Agreement between Glu Mobile Inc. and Niccolo M. de Masi, dated November 2, 2016.</u>	8-K	001-33368	10.01	11/03/16	
10.08#	<u>Summary of Compensation Terms of Nick Earl.</u>	8-K	001-33368		10/29/2018	
10.09#	<u>Executive Employment Agreement, effective as of November 10, 2016, by and between Glu Mobile Inc. and Nick Earl.</u>	10-K	001-33368	10.08	03/10/17	
10.10#	<u>Change of Control Severance Agreement between Glu Mobile Inc. and Nick Earl, effective as of November 10, 2016.</u>	10-K	001-33368	10.09	03/10/17	
10.11#	<u>Summary of Change of Control Severance Agreement between Glu Mobile Inc. and Nick Earl, dated as of</u>	10-K	001-33368	10.20	03/04/16	

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February 8, 2016.

10.12#	<u>Summary of Compensation Terms of Eric R. Ludwig.</u>	8-K	001-33368		10/29/2018
10.13#	<u>Change of Control Severance Agreement, dated as of October 10, 2008, between Glu Mobile Inc. and Eric R. Ludwig.</u>	10-K	001-33368	10.09	03/13/09
10.14#	<u>Amendment, dated as of July 7, 2011, to Change of Control and Severance Agreement between Glu Mobile Inc. and Eric R. Ludwig, dated as of October 10, 2008.</u>	10-Q	001-33368	10.02	11/14/11
10.15#	<u>Summary of Compensation Terms of Chris Akhavan.</u>	8-K	001-33368		10/29/2018
10.16#	<u>Change of Control Severance Agreement between Glu Mobile Inc. and Chris Akhavan, dated as of April 22, 2013.</u>	10-Q	001-33368	10.02	08/09/13

120

Table of Contents

Exhibit Number	Exhibit Description	Incorporated by Reference			Filing Date	Filed Herewith
		Form	File No.	Exhibit		
10.17#	<u>Summary of Compensation Terms of Scott J. Leichtner.</u>					X
10.18#	<u>Summary of Change of Control Severance Arrangement between Glu Mobile Inc. and Scott J. Leichtner, dated as of July 7, 2011.</u>	10-K	001-33368	10.15	03/15/13	
10.19#	<u>Non-Employee Director Compensation Program, effective as of October 25, 2018</u>					X
10.20	<u>Lease, dated as of May 9, 2017 between Howard Street Associates LLC and Glu Mobile Inc.</u>	8-K	001-33368	99.01	05/15/17	
10.21	<u>Common Stock Warrant, between Glu Mobile Inc. and MGM Interactive Inc., dated as of July 15, 2013.</u>	S-3	333-190545	4.03	08/09/13	
10.22	<u>iOS Developer Program License Agreement between Glu Games Inc. and Apple Inc., as amended to date.</u>	10-K	001-33368	10.27	03/15/13	
10.23	<u>Android Market Developer Distribution Agreement between Glu Games Inc. and Google Inc., as amended to date.</u>	10-K	001-33368	10.28	03/15/13	
10.24+	<u>License Agreement, dated as of March 31, 2012, by and between Glu Mobile Inc. and Atari, Inc.</u>	10-Q/A	001-33368	10.01	10/12/12	
10.25+	<u>Trademark and Domain Name Assignment and License Agreement, dated as of March 31, 2012, by and between Glu Mobile Inc. and Atari Inc.</u>	10-Q	001-33368	10.02	08/09/12	
10.26+	<u>Unity Technologies Software License Agreement between Glu Mobile Inc. and Unity Technologies ApS, dated as of October 29, 2017.</u>	10-K	001-33368	10.27	03/09/2018	

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10.27+	<u>Share Purchase Agreement, dated as of December 31, 2017, by and between Saber Interactive and Glu Mobile Inc.</u>	10-K	001-33368	10.30	03/09/2018	
10.28+	<u>Asset Purchase and License Agreement, dated As of December 31, 2017, by and between MGL My.com (Cyprus) Limited and Glu Mobile Inc.</u>	10-K	001-33368	10.31	03/09/2018	
21.01	<u>List of Subsidiaries of Glu Mobile Inc.</u>					X
23.01	<u>Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.</u>					X
24.01	<u>Power of Attorney (see the Signature Page to this report).</u>					

121

Table of Contents

Exhibit Number	Exhibit Description	Incorporated by Reference			Filing Date	Filed Herewith
		Form	File No.	Exhibit		
31.01	<u>Certification of Principal Executive Officer Pursuant to Securities Exchange Act Rule 13a-14(a).</u>					X
31.02	<u>Certification of Principal Financial Officer Pursuant to Securities Exchange Act Rule 13a-14(a).</u>					X
32.01	<u>Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350 and Securities Exchange Act Rule 13a-14(a)/15d-14(a).*</u>					X
32.02	<u>Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350 and Securities Exchange Act Rule 13a-14(a)/15d-14(a).*</u>					X
101.INS	XBRL Report Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Taxonomy Calculation Linkbase Document					X
101.LAB	XBRL Taxonomy Label Linkbase Document					X
101.PRE	XBRL Presentation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X

#Indicates a management compensatory plan or arrangement.

+Certain portions of this exhibit have been omitted and have been filed separately with the SEC pursuant to an order granting confidential treatment issued by the SEC under Rule 24b-2 as promulgated under the Exchange Act.

* This certification is not deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that Glu Mobile Inc. specifically incorporates it by reference.

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GLU MOBILE INC.

Date: February 28, 2019 By: /s/ Nick Earl
Nick Earl, President and Chief Executive Officer

Date: February 28, 2019 By: /s/ Eric R. Ludwig
Eric R. Ludwig, Executive Vice President, Chief Operating Officer and Chief Financial Officer

Table of Contents

POWER OF ATTORNEY

By signing this Annual Report on Form 10-K below, I hereby appoint each of Nick Earl, Eric R. Ludwig and Scott J. Leichtner as my attorney-in-fact to sign all amendments to this Form 10-K on my behalf, and to file this Form 10-K (including all exhibits and other documents related to the Form 10-K) with the Securities and Exchange Commission. I authorize each of my attorneys-in-fact to (1) appoint a substitute attorney-in-fact for himself and (2) perform any actions that he believes are necessary or appropriate to carry out the intention and purpose of this Power of Attorney. I ratify and confirm all lawful actions taken directly or indirectly by my attorneys-in-fact and by any properly appointed substitute attorneys-in-fact.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacity and on the dates indicated.

Signature	Title	Date
/s/ Nick Earl Nick Earl	President, Chief Executive Officer and Director (Principal Executive Officer)	February 28, 2019
	EVP, Chief Operating Officer and Chief Financial Officer	February 28, 2019
/s/ Eric R. Ludwig Eric R. Ludwig	(Principal Financial Officer)	
	Vice President of Accounting	February 28, 2019
/s/ Gordon Lee Gordon Lee	(Principal Accounting Officer)	
/s/ Niccolo de Masi Niccolo de Masi	Executive Chairman	February 28, 2019
/s/ Benjamin T. Smith IV Benjamin T. Smith IV	Lead Director	February 28, 2019
/s/ Eric R. Ball Eric R. Ball	Director	February 28, 2019
/s/ Greg Brandeau Greg Brandeau	Director	February 28, 2019

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/s/ Ben Feder Ben Feder	Director	February 28, 2019
/s/ Ann Mather Ann Mather	Director	February 28, 2019
/s/ Hany M. Nada Hany M. Nada	Director	February 28, 2019
/s/ Gabrielle Toledano Gabrielle Toledano	Director	February 28, 2019

124
