UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from to

Commission File Number: 001-35375

Zynga Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**42-1733483**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification Number)**
699 Eighth Street San Francisco, CA	**94103**
(Address of principal executive offices)	**(Zip Code)**

(855) 449-9642
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock, par value $0.00000625 per share	ZNGA	Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act:
None

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 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 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an 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 to not use the extended transition period for complying with any new or reviewed 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 Exchange Act Rule 12b-2). Yes ☐ No ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant on June 30, 2019, based upon the closing price of $6.13 of the registrant's Class A Common Stock as reported on the NASDAQ Global Select Market, was approximately $5.3 billion, which excludes 73.2 million shares of the registrant's common stock held on June 30, 2019 by then current executive officers, directors, and stockholders that the registrant has concluded are affiliates of the registrant.

As of January 31, 2020, there were 951,550,630 shares of the registrant's Class A common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2020 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. The proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2019.

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For the Fiscal Year Ended December 31, 2019

References in this report to "Mobile DAUs" mean daily active users of our mobile games, "Mobile MAUs" mean monthly active users of our mobile games, "Mobile MUUs" mean monthly unique users of our mobile games, "Mobile ABPU" means average daily mobile bookings per average Mobile DAU and "Mobile MUPs" mean monthly unique payers in our mobile games. Unless otherwise indicated, these metrics are based on internally-derived measurements. For further information about Mobile DAUs, Mobile MAUs, Mobile ABPU, Mobile MUUs and Mobile MUPs as measured by us, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics."

CAUTIONARY NOTE ABOUT FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward looking statements reflecting our current expectations that involve risks and uncertainties. These forward-looking statements include, but are not limited to, statements related to industry prospects, our future economic performance including anticipated revenues and expenditures, results of operations or financial position, capital expenditures and other financial items, our business plans and objectives, including our growth strategies and intended product releases, and may include certain assumptions that underlie the forward-looking statements. Forward-looking statements often include words such as “outlook,” “projected,” “intends,” “will,” “anticipate,” “believe,” “target,” “expect,” and statements in the future tense are generally forward-looking.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. The achievement or success of the matters covered by such forward-looking statements involves significant risks, uncertainties and assumptions, including those described in “Part I. Item 1A. Risk Factors” of this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment and industry. New risks may also emerge from time to time. It is not possible for our management to predict all of the risks related to our business and operations, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated, predicted or implied in the forward-looking statements.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur, and reported results should not be considered as an indication of future performance. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements.

Except as required by law, we undertake no obligation to update any forward-looking statements for any reason to conform these statements to actual results or to changes in our expectations.

PART I

ITEM 1. BUSINESS

Overview

Zynga Inc. ("Zynga" or "we" or the "Company") is a leading provider of social game services. We develop, market and operate social games as live services played on mobile platforms, such as Apple's iOS and Google's Android, and social networking platforms, such as Facebook and Snapchat. Generally, all of our games are free to play, and we generate substantially all of our revenue through the sale of in-game virtual items ("online game revenue") and advertising services ("advertising revenue").

We have been a pioneer in social gaming and in making "play" a core activity on mobile devices and social networking platforms. We believe our leadership position in social games is the result of our significant investment in our people, content, brand, technology and infrastructure. Our leadership position in social games is defined by the following:

- ***Established Portfolio of Social Games.*** We operate a number of popular social games including *CSR Racing 2*, *Empires & Puzzles*, *FarmVille*, *Merge Dragons!*, *Merge Magic!*, *Words With Friends* and *Zynga Poker*, as well as our Social Slots and Casual Cards portfolios.
- ***Engaged and Global Community of Players.*** According to our internal analytics system, in 2019, we had an average of 21 million Mobile DAUs and 69 million Mobile MAUs.
- ***Scalable Technology and Data.*** We leverage our technology to increase player engagement, continually enhance existing games, launch and acquire new games to help build the Zynga portfolio. We believe our scale results in network effects that deliver compelling value to our players, and we are committed to making significant investments to grow our community of players, their engagement and monetization over time. We believe that combining data analytics with creative game design enables us to create a superior player experience.

Our Mission & Strengths

Our mission is to connect the world through games. We pursue that mission in the following ways:

- ***A galvanizing company vision.*** We believe that our vision for social gaming distinguishes us from others in the market. Zynga was founded with the simple premise that it is more fun to play games with other people and that social gaming is the best path to the mass market. Our approach is to build games around social features and systems to deliver a higher quality player experience with increased levels of engagement, organic acquisition and long-term retention.
- ***Proven brands in popular genres on a growing platform.*** We have a highly-diversified portfolio of established brands such as *CSR Racing*, *Empires & Puzzles*, *FarmVille*, *Hit it Rich! Slots*, *Merge Dragons!*, *Merge Magic!*, *Words With Friends* and *Zynga Poker* in the categories of Action Strategy, Casual, Invest Express and Social Casino. Mobile gaming is the largest and fastest growing gaming platform, and we are committed to leveraging our experience in live services to grow our existing portfolio of games and introduce new titles based on owned and licensed intellectual properties.
- ***Talented teams and strong analytics.*** We have passionate teams of people focused on developing new games and increasing the effectiveness and predictability of our live games through our strategy of releasing innovative bold beats – new content and game play modes that engage and attract current, lapsed and new audiences. Our teams balance the art and science of game making by combining creative innovation with a player-centric, data driven approach to surprise and delight players.

Our Leading Portfolio of Social Games

Our strategy is focused on growing, creating and acquiring games that we believe will stand the test of time and have the potential to engage players for years as enduring entertainment brands. Our portfolio includes:

- ***CSR Racing 2*** – a visually stunning, fast-paced racing game allowing players to customize their collection of supercars and race against their friends.
- ***Empires & Puzzles*** – a blend of approachable match-3 battles and deeper gameplay elements including hero collection, base building and social alliances.
- ***FarmVille*** – a franchise of games that deliver players an experience where they can invest in a world all their own and express themselves by building, expanding and nurturing their own virtual farm.

- ***Merge Dragons!*** – a puzzle adventure game where our players can match and merge everything to produce artifacts and skills in furtherance of healing a magical land, harnessing the power of dragons and building their own camp to grow dragons.
- ***Merge Magic!*** – a puzzle adventure game where players can lift the curse on mysterious new worlds and collect whimsical characters while solving fun puzzles and unlocking enchanting new surprises along the way.
- ***Words With Friends*** – a word game featuring friendly competition that allows players to quickly connect with their friends and family, while also providing the opportunity to build relationships throughout the game experience.
- ***Zynga Poker*** – an exciting card game that allows our players to experience the thrill of the win as they compete against friends and family in one of their favorite casino card games.
- ***Social Slots*** – a portfolio of slots games that deliver players authentic, Vegas-style mobile gameplay with a diverse mix of popular entertainment brands.
- ***Casual Cards*** – a collection of classic single player and tournament style card games including Solitaire, Gin, Spades and Okey with communities of skilled players.

Our Network

We believe it is more fun for players to engage in our games with their friends and family. Players also progress faster in our games by connecting with their friends and other players in our network to get what they need to complete quests, obtain virtual items and enhance their experience. We aspire to leverage our existing and new games to bring the best social playing experiences to our audience. Our network enables users to discover new games, find and connect with new friends, and challenge, cooperate and compete with their friends, all of which drive higher user engagement.

Our Revenues

We primarily generate revenue from the following:

Virtual Items. Our primary revenue source is through the sale of in-game virtual currency that players use to buy virtual goods or through the sale of virtual goods directly (together, defined as “virtual items”). Virtual items can also be earned for free by the player through game play or by accepting promotional offers from our advertising partners.

Consistent with our free-to-play business model, a small portion of our players have historically been payers. For example, in 2019, our average Mobile MUPs represented approximately 3.0% of our average Mobile MUUs – for more information about the uses, estimates and limitations of these and other operating metrics, please see the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics.” Because the opportunity for social interactions increases as the number of players increase, we believe that maintaining and growing our overall number of players, including the number of players who may not purchase virtual items, is important to the success of our business. As a result, we believe that the number of players who choose to purchase virtual items will continue to constitute a small portion of our overall players.

Our top three online game revenue-generating games historically have contributed to a significant portion of our revenue, though the games that represent our top three online game revenue-generating games vary over time. Our top three online game revenue-generating games accounted for 48%, 45% and 45% of our online game revenue in 2019, 2018 and 2017, respectively. In 2019, our top three online game revenue-generating games were *Merge Dragons!*, *Empires & Puzzles* and *Zynga Poker*.

Advertising. Our advertising services offer creative ways for marketers and advertisers to reach and engage with our players while allowing continued operation of a free-to-play business model. Our advertising offerings include:

- *Mobile Advertisements* in our mobile games that include banner and interstitial advertisements;
- *Engagement Advertisements and Offers* in which players can answer certain questions, watch-to-earn engagements or sign up for third party services to receive virtual items and in-game bonuses;
- *Branded Virtual Items and Sponsorships* that integrate relevant advertising and messaging within game play.

Our *Words With Friends* games generated a substantial portion of our advertising revenue in 2019, 2018 and 2017.

Marketing and Distribution

Agreements with Marketing Partners

We have been able to build a large community of players through the viral and sharing features provided by social networks, the social innovations in and the network effects of our games, as well as the cross-promotion of our games to our existing audience. However, we also acquire our players through paid advertising channels. We advertise our games within other mobile applications and on social networks, often through in-app and other advertising partners such as Facebook, Google and Unity. In 2019, 2018 and 2017 we incurred $377.2 million, $157.7 million and $147.2 million, respectively, of these player acquisition costs.

Agreements with Apple and Google

Our revenue depends on our continued ability to publish our games on mobile platforms, primarily Apple's iOS and Google's Android. In 2019, we derived 50% of our revenue and 49% of our bookings through Apple and 43% of our revenue and 46% of our bookings through Google. Our use of mobile platforms and data derived from mobile platforms is governed by the standard terms of service of the mobile platforms. Any of these operators could unilaterally alter their terms of service in a manner that could harm our business.

Research and Development

We believe continued investment in enhancing existing games and developing new games, including investment in software development tools and code modification, is important to attaining our strategic objectives. Our research and development expenses were $505.9 million, $270.3 million and $256.0 million in 2019, 2018 and 2017, respectively. Our total research and development expenses included stock-based compensation expense of $47.0 million, $42.2 million and $42.2 million in 2019, 2018 and 2017, respectively, and contingent consideration related expense associated with our various acquisitions of $201.6 million and $5.5 million in 2019 and 2018, respectively, and an immaterial amount in 2017.

Technology and Tools

We have invested extensively in developing our proprietary technology stack, which is designed to handle sudden bursts of activity for millions of players over a short period of time with high levels of performance and reliability. Our proprietary technology stack includes cloud computing management, a shared code base, network and cross-promotional features and proprietary data analytics. Our technology stack also supports the growth of our 2D and 3D game engines across our mobile games, in addition to supporting high-level security and anti-fraud infrastructure. We are also investing in machine learning. We believe that investing in technology and tools can create competitive advantages and further our technology leadership. We will continue to innovate and optimize across our technology and tools to deliver cost-effective, high performance and highly available social games.

Intellectual Property

Our business is significantly based on the creation, acquisition, use and protection of intellectual property. Some of this intellectual property is in the form of software code, patented technology and trade secrets that we use to develop our games and to enable them to run properly on multiple platforms. Other intellectual property we create or acquire includes product and feature names and audio-visual elements, including characters, graphics, music, story lines and interface designs.

While most of the intellectual property we use is owned by us, we also acquire and license other proprietary intellectual property from third parties. These licenses typically limit our use of intellectual property to specific uses and for specific time periods.

We protect our intellectual property rights by relying on federal, state and common law protections, as well as contractual restrictions. We actively seek patent protection covering our inventions and we acquire patents we believe may be useful or relevant to our business. We control access to our proprietary technology by entering into confidentiality and invention assignment agreements with our employees and contractors, and confidentiality agreements with third parties. We also actively engage in monitoring and enforcement activities with respect to infringing uses of our trademarks, copyrights and domain names by third parties.

In addition to these contractual arrangements, we also rely on a combination of trade secrets, copyrights, trademarks, trade dress, domain names and patents to protect our games and other intellectual property. We typically own the copyrights to the software code to our content, as well as the trademarks for the brands or titles under which our games are marketed. We pursue the registration of our domain names, copyrights, trademarks, patents, and service marks in the U.S. and, for some, in locations outside the U.S. Our registered trademarks in the U.S. include "Zynga" and the names of our games, among others.

Competition

We face significant competition in all aspects of our business. Specifically, we compete for the leisure time, attention and discretionary spending of our players with other social game developers on the basis of a number of factors, including quality of player experience, brand awareness, reputation and access to distribution channels.

We believe we compete favorably on these factors. However, our industry remains highly competitive and is evolving rapidly. Other developers of social games could develop more compelling content that competes with our social games and adversely affects our ability to attract and retain players and their entertainment time. These competitors, including companies of which we may not be currently aware, may take advantage of social networks, access to a large user base and their network effects to grow rapidly and virally.

Our primary competitors include:

- *Developers for Mobile Games:* We face competition from a number of competitors who develop mobile games. These competitors, some of which have significant financial, technical and other resources, greater brand recognition and longer operating histories, may create games that appeal to our players. The mobile game sector specifically is characterized by frequent product introductions, rapidly emerging mobile platforms, new technologies and new mobile application storefronts. Some of these competitors include Activision Blizzard, Aristocrat, DoubleU, Electronic Arts, Epic Games, Glu Mobile, Jam City, Machine Zone, Netmarble, NetEase, Niantic, Nintendo, Peak Games, Playrix, Playtika, Roblox, SciPlay, Scopely, Take-Two Interactive Software, Tencent, Ubisoft and others. Because our games are free to play, we compete primarily on the basis of player experience rather than price. We also expect new competitors to enter the market and existing competitors to allocate more resources to develop and market competing games and applications.
- *Other Game Developers and Platforms:* Our players may also play other games on personal computers, consoles and online streaming services, some of which include social features that compete with our social games and have community functions where game developers can engage with their players. Some of these competitors include Activision Blizzard, Electronic Arts, Epic Games, Google Stadia, Nintendo, Riot Games, SEGA, Sony, Take-Two Interactive and Ubisoft.
- *Other Forms of Media and Entertainment:* We compete more broadly for the leisure time and attention of our players with providers of other forms of entertainment, such as social networking, casual entertainment and music. To the extent existing or potential players choose to read, watch or listen to online content or streaming video or radio, play interactive video games at home or on their computer or mobile devices rather than play social games, these content services pose a competitive threat.

Government Regulation

We are subject to various federal, state and international laws and regulations that affect companies conducting business on the Internet and mobile platforms, including those relating to privacy, use and protection of player and employee personal information and data (including the collection of data from minors), the Internet, behavioral tracking, mobile applications, content, advertising and marketing activities (including sweepstakes, contests and giveaways) and anti-corruption. 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 players, and deliver products and services, and 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, and our operations continue to expand across the globe, our compliance requirements and costs will increase and we may be subject to increased regulatory scrutiny.

Some of our games and features are based upon traditional casino games, such as slots and poker. We have structured and operate these games and features with gambling laws in mind and believe that these games and features do not constitute gambling. Our social casino games are offered for entertainment purposes only and do not offer an opportunity to win real money.

Seasonality

Approximately 21% of our revenue was derived from the “advertising and other” category in 2019. 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 in our games. Additionally, we generally experience increases in game downloads and online game revenue in the fourth quarter and first quarter corresponding to increases in smartphone and tablet purchases during the holiday shopping season.

Employees

Our operations are headquartered in San Francisco, California, and we have several operating locations in the U.S., as well as various international office locations in North America, Asia and Europe. Our future success depends upon the continued service of our key technical and management personnel and upon our ability to continue to attract and retain qualified employees, particularly our senior management team and highly skilled game designers, product managers and engineers. We currently have favorable employee relations, but the competition for technical personnel is intense, and the loss of key employees or the inability to hire such employees when needed could have a material adverse impact on our business and financial condition. As of December 31, 2019, we had 1,883 full-time employees across our global locations.

Financial Information about Segments and Geographic Areas

We have one operating segment with one business activity, developing and monetizing social games. Financial information about our one segment and geographic areas is incorporated into this section by reference to our consolidated financial statements including Note 2 —"Revenue from Contracts with Customers" and Note 5 —"Property and Equipment, Net" in the notes to the consolidated financial statements.

Available Information

We were originally organized in April 2007 and completed our initial public offering in December 2011. Our Class A common stock is listed on the NASDAQ Global Select Market under the symbol "ZNGA." Our website is located at www.zynga.com, our investor relations website is located at http://investor.zynga.com and our blog is located at www.zynga.com/blog. We make available (free of charge and available for download) on our investor relations website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements and other Securities and Exchange Commission ("SEC") filings, and any amendments to those reports and any other filings that we file with or furnish to the SEC as soon as reasonably practicable after they are filed.

We post an audio version of our earnings calls and may webcast certain events we participate in or host with members of the investment community on our investor relations website. Additionally, we provide notifications of news or announcements regarding our financial performance, including SEC filings, investor events, press and earnings releases as part of our investor relations website. Investors and others can receive notifications of new information posted on our investor relations website in real time by signing up for email alerts and RSS feeds. Further corporate governance information, including our certificate of incorporation, bylaws, governance guidelines, board committee charters and committee memberships, and code of conduct, is also available on our investor relations website under the heading "Corporate Governance." We use these channels as well as social media and our blog to communicate information about our company, our services and other issues. It is possible that the information we post on social media and our blog could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on the channels listed on our investor relations website. The contents of our websites are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

We have identified the following risks and uncertainties that may have a material adverse effect on our business, financial condition, results of operations or reputation. The risks described below are not the only risks we face. Additional risks not presently known to us or that we currently believe are not material may also significantly affect our business, financial condition, results of operations or reputation. Our business could be harmed by any of these risks. The trading price of our Class A common stock could decline due to any of these risks, and you may lose all or part of your investment. In assessing these risks, you should also refer to the other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes.

Risks Related to Our Business and Industry

Our business will suffer if we are unable to entertain our players, develop new games, improve the experience of our existing games, and successfully monetize our games.

Our business depends on developing, publishing and continuing to service "free-to-play" games that consumers will download and spend time and money playing. We are primarily focused on mobile gaming, offering our games on mobile devices, including smartphones and tablets on Apple's iOS and Google's Android operating systems, and on social networking platforms such as Facebook and Snapchat. We have devoted and we expect to continue to devote substantial resources to the research, development, analytics and marketing of our games. Our development and marketing efforts are focused on improving the experience of our existing games (frequently through new content and feature releases for our live services), developing new games and successfully monetizing our games. We generate revenue primarily through the sale of in-game virtual items and advertising. For games distributed through third-party platforms, we are required to share a portion of the proceeds from in-game sales with the platform providers. Due to our focus on mobile gaming, these costs are expected to remain a significant operating expense. In order to be profitable, we need to generate sufficient revenue and bookings from our existing and new game offerings to offset our ongoing development, marketing and operating costs.

Successfully monetizing "free-to-play" games is difficult, and requires that we deliver valuable and entertaining player experiences that a sufficient number of players will pay for or we are able to otherwise sufficiently monetize our games (for example, by serving in-game advertising). The success of our games depends, in part, on unpredictable and volatile factors beyond our control including consumer preferences, competing games, new mobile platforms and the availability of other entertainment experiences. If our games do not meet consumer expectations, or if they are not brought to market in a timely and effective manner, our revenue and financial performance will be negatively affected.

We focus our efforts on four categories: Action Strategy, Casual, Invest Express and Social Casino. In addition to the market factors noted above, our ability to successfully develop games for mobile platforms and their ability to achieve commercial success will depend on our ability to:

- effectively market our games to existing and new players;
- achieve benefits from our player acquisition costs;
- achieve viral organic growth and gain customer interest in our games through free or more efficient channels;
- adapt to changing player preferences;
- adapt to new technologies and feature sets for mobile and other devices;
- expand and enhance games after their initial release;
- attract, retain and motivate talented and experienced game designers, product managers and engineers;
- partner with mobile platforms and obtain featuring opportunities;
- continue to adapt game feature sets for an increasingly diverse set of mobile devices, including various operating systems and specifications, limited bandwidth, and varying processing power and screen sizes;
- minimize launch delays and cost overruns on the development of new games and features;
- achieve and maintain successful customer engagement and effectively monetize our games;
- maintain a quality social game experience and retain our players;
- develop games that can build upon or become franchise games;
- compete successfully against a large and growing number of existing market participants;
- accurately forecast the timing and expense of our operations, including game and feature development, marketing and customer acquisition, customer adoption, and success of bookings growth;

- minimize and quickly resolve bugs or 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 successful live service games and launch new games and features 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.

Our industry is intensely competitive and subject to rapid changes. If consumers prefer our competitors' products or services over our own, our operating results could suffer.

Competition in the entertainment industry, especially the mobile gaming segment, is intense and subject to rapid changes, including changes from evolving consumer preferences and emerging technologies. Many new games are introduced in each major industry segment (mobile, PC and console), but only a relatively small number of titles account for a significant portion of total revenue in each segment. Our competitors that develop mobile and web games vary in size and include companies such as Activision Blizzard, Aristocrat, DoubleU, Electronic Arts, Epic Games, Glu Mobile, Jam City, Machine Zone, Netmarble, NetEase, Niantic, Nintendo, Peak Games, Playrix, Playtika, Roblox, SciPlay, Scopely, Take-Two Interactive Software, Tencent, Ubisoft and others. As we expand our global operations and gaming offerings, we increasingly face competition from online game developers and distributors who have primarily focused on specific international markets, such as Giant Interactive and Tencent in Asia, and high-profile companies with significant online presences with new and expanded gaming offerings, such as Apple, Google, Microsoft and Snap. In addition, other large companies that to date have not actively focused on mobile and social games, such as Amazon and Facebook, may decide to develop mobile and social games, or partner with other developers. Some of these current and potential competitors have significant resources for developing or acquiring additional games, may be able to incorporate their own strong brands and assets into their games, have a more diversified set of revenue sources than we do and may be less severely affected by changes in consumer preferences, regulations or other developments that may impact our industry.

As there are relatively low barriers to entry to develop a mobile or online game, we expect new game competitors to enter the market and existing competitors to allocate more resources to develop and market competing games and applications. 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 devices and platforms using relatively limited resources and with relatively limited start-up time or expertise. 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. As an entertainment company, we also face competition for the leisure time, attention and discretionary spending of our players from other non-gaming activities, such as social media and messaging applications, personal computer and console games, video streaming services, television, movies, sports and the Internet. Increasing competition could result in loss of players, increasing player acquisition and retention costs, and loss of talent, all of which could harm our business, financial condition or results of operations.

We rely on third-party platforms such as the Apple App Store and the Google Play Store to distribute our games and collect revenue. If we are unable to maintain a good relationship with such platform providers, if their terms and conditions or pricing changed to our detriment, if we violate, or if a platform provider believes that we have violated, the terms and conditions of its platform, or if any of these platforms loses market share or falls out of favor or is unavailable for a prolonged period of time, our business will suffer.

We derive a significant portion of our bookings from distribution of our games on the Apple App Store and the Google Play Store, and the virtual items we sell in our games are purchased using the payment processing systems of these platform providers. In 2019, we derived 50% of our revenue and 49% of our bookings on Apple platforms and 43% of our revenue and 46% of our bookings on Google platforms.

We are subject to the standard policies and terms of service of third-party platforms, which govern the promotion, distribution, content and operation generally of games on the platform. Each platform provider has broad discretion to change and interpret its terms of service and other policies with respect to us and other developers, and those changes may be unfavorable to us. A platform provider may also change its fee structure, add fees associated with access to and use of its platform, alter how we are able to advertise on the platform, change how the personal information of its users is made available to application developers on the platform, limit the use of personal information for advertising purposes, or restrict how players can share information with their friends on the platform or across platforms. For example, in December 2017, Apple revised its App Store Guidelines to require the disclosure of the odds of receiving certain types of virtual items from "loot boxes" (or similar mechanisms that offer a paid license to randomized virtual items) before customers purchase a license for the virtual items, and in May 2019 Google revised its Play Store policies to require similar disclosures. We are continuing to evaluate how Apple and Google will interpret these revisions, whether other platform providers adopt similar rules, and how these rules may affect our business, operations and financial results.

In addition, third-party platforms also impose certain file size limitations, which may limit the ability of players to download some of our larger games in over-the-air updates. Aside from these over-the-air file size limitations, a larger game file size could cause players to delete our games once the file size grows beyond the capacity of their devices' storage limitations or could reduce the number of downloads of these games.

Such terms of use changes may decrease the visibility or availability of our games, limit our distribution capabilities, prevent access to our existing games, reduce the amount of revenue and bookings we may recognize from in-game purchases, increase our costs to operate on these platforms or result in the exclusion or limitation of our games on such platforms. Any such changes could adversely affect our business, financial condition or results of operations.

If we violate, or a platform provider believes we have violated, its terms of service (or if there is any change or deterioration in our relationship with these platform providers), that platform provider could limit or discontinue our access to the platform. A platform provider could also limit or discontinue our access to the platform if it establishes more favorable relationships with one or more of our competitors or it determines that we are a competitor. Any limit or discontinuation of our access to any platform could adversely affect our business, financial condition or results of operations.

We also rely on the continued popularity, customer adoption, and functionality of third-party platforms. In the past, some of these platform providers have been unavailable for short periods of time or experienced issues with their in-app purchasing functionality. If either of these events recurs on a prolonged, or even short-term, basis or other similar issues arise that impact players' ability to access our games, access social features or purchase a license to virtual items, our business, financial condition, results of operations or reputation may be harmed.

We rely on third-party hosting and cloud computing providers, like Amazon Web Services ("AWS"), to operate certain aspects of our business. A significant portion of our game traffic is hosted by a single vendor, and any failure, disruption or significant interruption in our network or hosting and cloud services could adversely impact our operations and harm our business.

Our technology infrastructure is critical to the performance of our games and to player satisfaction, as well as our corporate functions. Our games and company systems run on a complex distributed system, or what is commonly known as cloud computing. We own, operate and maintain elements of this system, but significant elements of this system are operated by third-parties that we do not control and which would require significant time and expense to replace. We expect this dependence on third-parties to continue. We have suffered interruptions in service in the past, including when releasing new software versions or bug fixes, and if any such interruption were significant and/or prolonged it could adversely affect our business, financial condition, results of operations or reputation.

In particular, a significant portion, if not almost all, of our game traffic, data storage, data processing and other computing services and systems is hosted by AWS. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. The agreement requires AWS to provide us their standard computing and storage capacity and related support in exchange for timely payment by us. We have experienced, and may in the future experience, disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, human or software errors and capacity constraints. If a particular game is unavailable when players attempt to access it or navigation through a game is slower than they expect, players may stop playing the game and may be less likely to return to the game as often, if at all.

Any failure, disruption or interference with our use of hosted cloud computing services and systems provided by third-parties, like AWS, could adversely impact our business, financial condition or results of operations. To the extent we do not effectively respond to any such interruptions, upgrade our systems as needed and continually develop our technology and network architecture to accommodate traffic, our business, financial condition or results of operations could be adversely affected. In addition, we do not maintain insurance policies covering losses relating to our systems and we do not have business interruption insurance. 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, leading to a negative effect on our business, financial condition or results of operations.

Our operating results are volatile and difficult to predict, and our stock price may decline if we fail to meet the expectations of securities analysts or investors.

Our bookings, revenue, player metrics and operating results have fluctuated in the past and could vary significantly from quarter-to-quarter and year-to-year, and may fail to match our past performance or the expectations of securities analysts or investors because of a variety of factors, some of which are outside of our control. Factors that may contribute to the variability of our operating results include the risk factors listed in these "Risk Factors" and the factors discussed in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations — Factors Affecting Our Performance."

In particular, it is difficult to predict if, when, or how quickly bookings from one of our games may begin to decline. The success of our business depends on our ability to consistently and timely launch new games and features that achieve significant popularity and have the potential to become franchise games as bookings from our older games decline. It is difficult for us to predict with certainty when we will launch a new game as games may require longer development schedules or soft launch periods to meet our quality standards and our players' expectations. If declines are higher than expected in a particular quarterly period, we experience delays in the launch of new games or features and/or new games do not monetize well, we may not meet our expectations or the expectations of securities analysts or investors.

In addition, we recognize revenue from the sale of our virtual items in accordance with U.S. GAAP, which is complex and based on our assumptions and historical data with respect to the sale and use of various types of virtual items. In the event of changes in our assumptions or new trends in the mix of virtual items sold, the amount of revenue that we recognize in any particular period may fluctuate significantly. In addition, changes in the policies of Apple, Google or other third party platforms or accounting policies promulgated by the SEC and national accounting standards bodies affecting software and virtual items revenue recognition could further significantly affect the way we report revenue related to our products. Such changes could have an adverse effect on our reported revenue, net income and earnings per share under U.S. GAAP. For example, recurring activity such as new game launches, our acquisition of games from a third party or periods of significant increased bookings can also result in increases in deferred revenue while we initially defer bookings over the estimated average playing period of payers. For further information regarding our revenue recognition policy, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies—Revenue Recognition".

Given the rapidly evolving social game industry in which we operate, our historical operating results may not be useful in predicting our future operating results. In addition, metrics we have developed or those available from third parties regarding our industry and the performance of our games, including Mobile DAUs, Mobile MAUs, Mobile MUUs, Mobile MUPs and Mobile ABPU may not be indicative of our future financial performance.

Our business will suffer if we are unable to successfully acquire or integrate acquired companies into our business or otherwise manage the growth associated with multiple acquisitions.

We have acquired games, businesses, personnel and technologies in the past, and we intend to continue to evaluate and pursue acquisitions and strategic investments. For example, in the fourth quarter of 2017, we acquired the casual card game division of Peak Games, in the second quarter of 2018, we acquired Gram Games and in early 2019, we acquired a controlling interest in Small Giant Games Oy ("Small Giant"). Each of these acquisitions require unique approaches to integration due to, among other reasons, the structure of the acquisitions, their locations and cultural differences among their teams and ours, and has required, and will continue to require, attention from our management team. If we are unable to obtain the anticipated benefits from these acquisitions and strategic investments, or we encounter difficulties in integrating their operations with ours, our financial condition and results of operations could be materially harmed.

Challenges and risks from such investments and acquisitions include:

- negative effects on products and product pipeline from the changes and potential disruption that may follow the acquisition;
- diversion of our management's attention;
- declining employee morale and retention issues resulting from changes in compensation, or changes in management, reporting relationships, or future prospects;
- the need to integrate the operations, systems, technologies, products and personnel of each acquired company, the inefficiencies and lack of control that may result if such integration is delayed or not implemented, and unforeseen difficulties and expenditures that may arise in connection with integration;
- the difficulty in determining the appropriate purchase price of acquired companies may lead to the overpayment of certain acquisitions and the potential impairment of intangible assets and goodwill acquired in the acquisitions;
- the difficulty in successfully evaluating and utilizing the acquired products, technology or personnel;
- the potential incurrence of debt, contingent liabilities, amortization expenses or restructuring charges in connection with any acquisition;
- the need to implement controls, procedures and policies appropriate for a larger, U.S.-based public company at companies that prior to acquisition may not have as robust controls, procedures and policies, in particular, with respect to the effectiveness of cyber and information security practices and incident response plans, compliance with privacy and other regulations protecting the rights of players and customers, and compliance with U.S.-based economic policies and sanctions which may not have previously been applicable to the acquired company's operations;

- the difficulty in accurately forecasting and accounting for the financial impact of an acquisition transaction, including accounting charges and integrating and reporting results for acquired companies that have not historically followed U.S. GAAP;
- the fact that we may be required to pay contingent consideration in excess of the initial fair value, and contingent consideration may become payable at a time when we do not have sufficient cash available to pay such consideration;
- under purchase accounting, we may be required to write off deferred revenue which may impair our ability to recognize revenue that would have otherwise been recognizable which may impact our financial performance or that of the acquired company;
- risks associated with our expansion into new international markets and doing business internationally, including those described under the risk factor caption “Our international operations are subject to increased challenges and risks”;
- in the case of foreign acquisitions, 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;
- the need to transition operations and players onto our existing or new platforms and the potential loss of, or harm to, our relationships with employees, players and other suppliers as a result of integration of new businesses;
- the implications of our management team balancing levels of oversight over acquired businesses which continue their operations under contingent consideration provisions in acquisition agreements;
- our dependence on the accuracy and completeness of statements and disclosures made or actions taken by the companies we acquire or their representatives, when conducting due diligence and evaluating the results of such due diligence; and
- liability for activities of the acquired company before the acquisition, including intellectual property and other litigation claims or disputes, cyber and information security vulnerabilities, violations of laws, rules and regulations, commercial disputes, tax liabilities and other known and unknown liabilities.

The benefits of an acquisition or investment may also take considerable time to develop, and we cannot be certain that any particular acquisition or investment will produce the intended benefits, which could adversely affect our business, financial condition or results of operations. Our ability to grow through future acquisitions will depend on the availability of suitable acquisition and investment candidates at an acceptable cost, our ability to compete effectively to attract these candidates and the availability of financing to complete larger acquisitions. Acquisitions could result in potential dilutive issuances of equity securities, use of significant cash balances or incurrence of debt (and increased interest expense), contingent liabilities or amortization expenses related to intangible assets or write-offs of goodwill and/or intangible assets, which could adversely affect our results of operations and dilute the economic and voting rights of our stockholders. For more information, see Note 8 – “Goodwill and Other Intangible Assets, Net” in the notes to the consolidated financial statements included herein.

A small number of games have generated a majority of our revenue, and we must continue to launch, innovate and enhance games that players like and attract and retain a significant number of players in order to grow our revenue and sustain our competitive position.

Historically, we have depended on a small number of games for a majority of our revenue and we expect that this dependency will continue for the foreseeable future. Revenue and bookings from many of our games may decline over time after reaching a peak of popularity and player usage. As a result, our business depends on our ability to engage with players by consistently and timely launching new games and enhancing existing games with new content, features and events. We believe that certain games have the potential to become franchises that we plan to invest in and support with new games releases and introduction of new features to existing games. Constant game enhancement requires the investment of significant resources, particularly with older games, and such costs on average have increased.

It is difficult to consistently anticipate player demand on a large scale, particularly as we develop games in new categories or new markets, including international markets. If we do not successfully launch games that attract and retain a significant number of players and extend the life of our existing games, our market share, brand and financial results will be harmed.

We rely on a small portion of our total players for a substantial amount of our revenue and if we fail to grow our player base, or if player engagement declines, revenue, bookings and operating results will be harmed.

Compared to all players who play our games in any period, only a small portion are paying players. In 2019, we had approximately 1.2 million average Mobile MUPs (excluding payers of our Facebook Instant Games, Snapchat Game and games acquired as part of our Gram Games and Small Giant acquisitions), who represented approximately 3.0% of our average Mobile MUUs. In order to sustain and grow our revenue levels, we must attract, retain and increase the number of paying players or more effectively monetize our players through advertising and other strategies. To retain players, we must devote significant resources so that the games they play retain their interest and attract them to our other games. We might not succeed in our efforts to increase the monetization rates of our users, particularly if we are unable to retain our paying players. If we fail to grow or sustain the number of our paying players, if the rates at which we attract and retain paying players declines or if the average amount our players pay declines, our business may not grow and our financial results will suffer.

The value of our virtual items is highly dependent on how we manage the economies in our games. If we fail to manage our game economies properly, our business may suffer.

Paying players make purchases in our games because of the perceived value of these virtual items, which is dependent on the relative ease of obtaining an equivalent good by playing our game. The perceived value of these virtual items can be impacted by various actions that we take in the games including offering discounts for virtual items, giving away virtual items in promotions or providing easier non-paid means to secure these goods. Managing game economies is difficult, and relies on our assumptions and judgement. If we fail to manage our virtual economies properly or fail to promptly and successfully respond to any such disruption, our reputation may suffer and our players may be less likely to play our games and to purchase virtual items from us in the future, which would cause our business, financial condition and results of operations to suffer.

Cybersecurity attacks, including breaches, computer viruses and computer hacking attacks could harm our business, financial condition, results of operations or reputation.

Cybersecurity attacks, including breaches, computer malware, computer hacking and insider threats have become more prevalent in our industry. Any cybersecurity breach caused by hacking, which involves efforts to gain unauthorized access to information or systems, or to cause intentional malfunctions, loss or corruption of data, software, hardware or other computer equipment, or the inadvertent transmission of computer viruses could adversely affect our business, financial condition, results of operations or reputation. We have experienced and will continue to experience hacking attacks of varying degrees from time to time. Because of our prominence in the social game industry, we believe we are a particularly attractive target for hackers. Additionally, rapidly evolving technology and capabilities, evolving changes in the sources, capabilities and targets for cybersecurity attacks, as well as the increasing sophistication of cyber criminals increase the risk of material data compromise or business disruption.

In addition, we store sensitive information, including personal information about our employees, and our games involve the storage and transmission of players' personal information on equipment, networks and corporate systems run by us or managed by third-parties including Amazon, Apple, Facebook, Google and Microsoft. We are subject to a number of laws, rules and regulations requiring us to provide notification to players, investors, regulators and other affected parties in the event of a security breach of certain personal data, or requiring the adoption of minimum information security standards that are often vaguely defined and difficult to practically implement. The costs of compliance with these laws, including the European Union's General Data Protection Regulation ("GDPR") and the California Consumer Privacy Act of 2018 ("CCPA"), have increased and may increase in the future. Our 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, or compromise the integrity of, our data, our employees' data, our players' data or any third-party data we may possess. Any such security breach could require us to comply with various breach notification laws, may affect our ability to operate and may expose us to litigation, remediation and investigation costs, increased costs for security measures, loss of revenue, damage to our reputation and potential liability, each of which could be material.

In September 2019, we announced that an incident had occurred that may have involved player data (the "Data Incident"). Upon our discovery of the Data Incident, an investigation was immediately commenced and leading advisors and third-party forensics firms were retained to assist. Our current belief is that, during the third quarter of 2019, outside hackers may have illegally accessed certain player account information and other Zynga information, and that no financial information was accessed. We provided notifications to players, investors, regulators and other third parties, where we believed notice was required or appropriate. We may continue to experience increased costs related to our response to the Data Incident and our efforts to further enhance our security measures. In addition, it is possible that the Data Incident may result in loss of players and partners, harm to our reputation, increased costs to maintain insurance coverage, devotion of substantial management time, litigation or regulatory enforcement, claims for indemnification obligations, future cybersecurity attacks and other potential liabilities.

We are subject to laws and regulations concerning privacy, information security, data protection, consumer protection and protection of minors, and these laws and regulations are continually evolving. Our actual or perceived failure to comply with these laws and regulations could harm our business.

We receive, store and process personal information and other player data, and we enable our players to share their personal information with each other and with third parties, including on the Internet and mobile platforms. There are numerous federal, state and local laws around the world regarding privacy and the storing, sharing, use, processing, disclosure and protection of personal information and other player data on the Internet and mobile platforms, the scope of which are changing, subject to differing interpretations, and may be inconsistent between countries or conflict with other rules.

Various government and consumer agencies have called for new regulation and changes in industry practices and are continuing to review the need for greater regulation for the collection of information concerning consumer behavior on the Internet, including regulation aimed at restricting certain targeted advertising practices. For example, the GDPR, which became effective in May 2018, creates new individual privacy rights and imposes worldwide obligations on companies processing personal data of European Union users, which has created a greater compliance burden for us and other companies with European users, and subjects violators to substantial monetary penalties. Another example is the State of California's passage of the CCPA, which went into effect on January 1, 2020 and created new privacy rights for consumers residing in the state. There is also increased attention being given to the collection of data from minors. For instance, the Children's Online Privacy Protection Act ("COPPA") requires companies to obtain parental consent before collecting personal information from children under the age of 13. Compliance with GDPR, CCPA, COPPA and similar legal requirements has required us to devote significant operational resources and incur significant expenses.

All of our games are subject to our privacy policy and our terms of service located in application storefronts, within our games and on our corporate website. We generally comply with industry standards and are subject to the terms of our privacy-related obligations to players and third parties. We strive to comply with all applicable laws, policies, legal obligations and certain industry codes of conduct relating to privacy and data protection, to the extent reasonably attainable. However, it is possible that these obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our practices. It is also possible that new laws, policies, legal obligations or industry codes of conduct may be passed, or existing laws, policies, legal obligations or industry codes of conduct may be interpreted in such a way that could prevent us from being able to offer services to citizens of a certain jurisdiction or may make it costlier or more difficult for us to do so. Any failure or perceived failure by us to comply with our privacy policy and terms of service, our privacy-related obligations to players or other third parties, or our privacy-related legal obligations, or any compromise of security that results in the unauthorized release or transfer of personally identifiable information or other player data, may result in governmental enforcement actions, litigation or public statements against us by consumer advocacy groups or others and could cause our players to lose trust in us, which could have an adverse effect on our business, financial condition or results of operations. Additionally, if third parties we work with, such as players, vendors or developers violate applicable laws or our policies, such violations may also put our players' information at risk and could in turn have an adverse effect on our business, financial condition or results of operations.

Our revenue may be harmed by the proliferation of "cheating" programs and scam offers that seek to exploit our games and players, which may negatively affect game-playing experience and our ability to reliably validate our audience metric reporting and may lead players to stop playing our games.

Unrelated third parties have developed, and may continue to develop, "cheating" programs that enable players to exploit vulnerabilities in our games, play them in an automated way, collude to alter the intended game play or obtain unfair advantages over other players who do play fairly. These programs harm the experience of players who play fairly, may disrupt the virtual economies of our games and reduce the demand for virtual items, disrupting our in-game economy. In addition, unrelated third parties have attempted to scam our players with fake offers for virtual items or other game benefits. We devote significant resources to discover, discourage and disable these cheating and scam programs and activities. If we are unable to do so quickly, our operations may be disrupted, our reputation may be damaged, players may stop playing our games and our ability to reliably validate our audience metrics may be negatively affected. These cheating programs and scam offers result in lost revenue from paying players, disrupt our in-game economies, divert time from our personnel, increase costs of developing technological measures to combat these programs and activities, increase our customer service costs needed to respond to dissatisfied players, and may lead to legal claims.

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

Virtual items 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 items, such as virtual coins for our Social Slots franchise games or *Zynga Poker* virtual poker chips, 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 items offered may have been obtained through unauthorized means such as exploiting vulnerabilities in our games, from scamming our players with fake offers for virtual items 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 have in the past and could in the future impede our revenue and profit growth by, among other things:

- decreasing revenue from authorized transactions;
- creating downward pressure on the prices we charge players for our virtual items;

- increasing chargebacks from unauthorized credit card transactions;
- causing us to lose revenue from dissatisfied players who stop playing a particular game;
- causing us to lose revenue from players who we take disciplinary action against, including banning certain players who may have previously made purchases within our games;
- 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 items, we state in our terms of service that the buying or selling of virtual items from unauthorized third party sellers may result in bans from our games or legal action. With a community of players in the millions, we periodically encounter such issues and expect to continue to do so. We have banned players as a result of such activities. We have also filed lawsuits against third parties attempting to "sell" virtual items from our games, particularly poker chips from *Zynga Poker*, outside of our games. We have also employed technological 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 detect, prevent or minimize these unauthorized or fraudulent transactions will be successful and that these actions will not increase over time.

If we do not successfully invest in, establish and maintain awareness of our brand and games, if we incur excessive expenses promoting and maintaining our brand or our games, or if our games contain defects or objectionable content, our business, financial condition, results of operations or reputation could be harmed.

We believe that establishing and maintaining our brand is critical to maintaining and creating favorable relationships with players, platform providers, advertisers and content licensors, as well as competing for key talent. Increasing awareness of our brand and recognition of our games is particularly important in connection with our strategic focus on developing games based on our own intellectual property and successfully cross-promoting our games. In addition, globalizing and extending our brand and recognition of our games requires significant investment and 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 increase and maintain brand awareness and consumer recognition of our games, our potential revenues could be limited, our costs could increase and our business, financial condition, results of operations or reputation could suffer.

In addition, if a game contains objectionable content or the messaging functionality of our games is abused, we could experience damage to our reputation and brand. Despite reasonable precautions, some consumers may be offended by certain game content, the third-party advertisements displayed in our games, or by treatment of other users. If consumers believe that a game we published or third-party advertisement displayed in a game contains objectionable content, it could harm our brand and consumers could refuse to play it and could pressure the platform providers to remove the game from their platforms. For example, we rely on third-party advertising partners to display advertisements within our games, we have experienced (and may experience in the future) instances where offensive or objectionable content has been displayed in our games through our advertising partners. While this may violate the terms of our agreements with these advertising partners, our reputation and player experience may suffer. Furthermore, steps that we may take in response to such instances, such as temporarily or permanently shutting off access of such advertising partner to our network, may negatively impact our revenue in such period.

Similarly, our games may contain errors, bugs, flaws, corrupted data, defects and other vulnerabilities, some of which may only become apparent after their launch, particularly as we launch new games and rapidly release new features to existing games. Any such errors, flaws, defects and vulnerabilities may be exploited by cheating programs and other forms of misappropriation, disrupt our operations, adversely affect the game experience of our players, harm our reputation, cause our players to stop playing our games, divert our resources and delay market acceptance of our games, any of which could result in legal liability to us or harm our business, financial condition or results of operations.

If we are able to develop new games and features that achieve success, it is possible that these games and features could divert players of our other games without growing our overall user base, which could harm operating results.

Although it is important to our future success that we develop new games and features that are popular with players, it is possible that new games and features may reduce the amount of time players spend with our other games. In particular, we plan to continue leveraging our existing games to cross-promote new games and features, which may encourage players of existing games to divert some of their playing time and discretionary spending away from our existing games. If new games and game features do not grow our player base, increase the overall amount of time our players spend with our games, or generate sufficient new bookings to offset any declines from our other games, our revenue and bookings could be adversely affected.

We derive a significant portion of our revenues from advertisements and offers that are incorporated into our free-to-play games through relationships with third parties. If we are unable to continue to compete for these advertisements and offers, or if any events occur that negatively impact our relationships with advertisers, our advertising revenues and operating results would be negatively impacted.

We derive a significant portion of our revenues though advertisements and offers we serve to players. We need to maintain good relationships with advertisers to provide us with a sufficient inventory of advertisements and offers. Online advertising, including through mobile games and other mobile applications, is an intensely competitive industry. Many large companies, such as Amazon, Facebook and Google, invest significantly in data analytics to make their websites and platforms more attractive to advertisers. In order for our advertising business to continue to succeed, we need to continue to demonstrate the reach of our player network and success of our advertising partners. If our relationship with any advertising partners terminates for any reason, or if the commercial terms of our relationships are changed or do not continue to be renewed on favorable terms, we would need to qualify new advertising partners, which could negatively impact our revenues, at least in the short term.

In addition, internet-connected devices and operating systems controlled by third parties increasingly contain features that allow device users to disable functionality that allows for the delivery of advertising on their devices. Device and browser manufacturers may include or expand these features as part of their standard device specifications. For example, when Apple announced that UDID, a standard device identifier used in some applications, was being superseded and would no longer be supported, application developers were required to update their apps to utilize alternative device identifiers such as universally unique identifier, or, more recently, identifier-for-advertising, which simplifies the process for Apple users to opt out of behavioral targeting. If users elect to utilize the opt-out mechanisms in greater numbers, our ability to deliver effective advertising campaigns on behalf of our advertisers would suffer, which could cause our business, financial condition, or results of operations to suffer. Finally, the revenues 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 revenues in the first quarter.

We have a history of net losses and our revenue, bookings and operating margins may decline. We also may incur substantial net losses in the future and may not sustain profitability.

The industry in which we operate is highly competitive and rapidly changing, and relies heavily on successful new product launches and continually introducing compelling content, products and services. As such, if we fail to deliver such content, products and services, do not execute our strategy successfully or if our new content launches are delayed, our revenue, bookings and audience numbers may decline, and our operating results will suffer. As of December 31, 2019, we had an accumulated deficit of $1.8 billion.

In addition, our operating margin may experience downward pressure as a result of increasing competition and the other risks discussed in this report. We expect to continue to expend substantial financial and other resources on game development, our technology stack, game engines, game technology and tools, the expansion of our network, international expansion and marketing. Our operating costs will increase and our operating margins may decline if we do not effectively manage costs, launch new products on schedule that monetize successfully and enhance our franchise games so that these games continue to monetize successfully. In addition, weak economic conditions or other factors could cause our business to further contract, requiring us to implement significant additional cost cutting measures, including a decrease in research and development and sales and marketing, which could harm our long-term prospects.

If our revenues do not increase to offset any additional expenses, if we fail to manage or experience unexpected increases in operating expenses or if we are required to take additional charges related to impairments or restructurings, our financial results and results of operations may suffer.

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 Mobile DAUs, Mobile MAUs, Mobile MUUs, Mobile MUPs, and Mobile ABPU are calculated using data tracked by our internal analytics systems based on tracking activity of user accounts. The analytics systems and the resulting data have not been independently verified. 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 usage and user engagement across our user base and our recently acquired operations, and factors relating to user activity and systems may impact these numbers. For example, although we now only report Mobile DAUs and Mobile MAUs, for the fourth quarter of 2018, we excluded December web DAUs and MAUs for *Zynga Poker* and instead used an average *Zynga Poker* player activity for October and November 2018 due to an increased volume of apparent, web-based player activity in that game that we were unable to reliably validate and de-duplicate. The calculation of our key metrics and examples of how user activity and our systems may impact 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 Measures and Metrics."

Our accuracy in calculating these metrics is further challenged by our focus on mobile gaming. As described under the heading titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Measures and Metrics," we rely on the accuracy and transparency of data provided by individuals and reported by third parties to calculate our metrics and eliminate duplication of data. For purposes of calculating Mobile MUUs and Mobile MUPs, for certain periods, we are unable to distinguish whether players of certain games are also players of our other games. As a result, we exclude players of these games from our calculation of Mobile MUUs and Mobile MUPs for those periods to avoid potential double counting.

Our advertisers and investors rely on our key metrics as a representation of our performance. We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy. If we determine that we can no longer calculate any of our key metrics with a sufficient degree of accuracy, and we cannot find an adequate replacement for the metric, our business, financial condition or results of operations may be harmed. In addition, if advertisers, platform partners or investors do not perceive our user metrics to be accurate representations of our user base or user engagement, or if we discover material inaccuracies in our user metrics, our reputation may be harmed and advertisers and platform partners may be less willing to allocate their budgets or resources to our products and services, which could negatively affect our business, financial condition or results of operations.

Our business and growth may suffer if we fail to attract, retain and motivate key personnel.

Our ability to compete and grow depends in large part on the efforts and talents of our employees and executives. Our success depends in a large part upon the continued service of our senior management team, including Frank Gibeau, our Chief Executive Officer, Mark Pincus, our non-Executive Chairman and our Chief Financial Officer, Chief Operating Officer, President of Publishing, Chief People Officer and Chief Legal Officer. Mr. Pincus and Mr. Gibeau are both critical to our vision, strategic direction, culture, products and technology, and the continued retention of our entire senior management team is important to the success of our operating plan. We do not have employment agreements, other than offer letters, with our senior management team, and we do not maintain key-man insurance for members of our senior management team. The loss of any member of our senior management team could cause disruption and harm our business, financial condition, results of operations or reputation.

In addition, our ability to execute our strategy depends on our continued ability to identify, hire, develop, motivate and retain highly skilled employees, particularly in the competitive fields of game design, product management, engineering and data science. These employees are in high demand, and we devote significant resources to identifying, recruiting, hiring, training, successfully integrating and retaining them. We have continued to experience significant turnover in our headcount, which has placed and will continue to place significant demands on our management and our operational, financial and technological infrastructure. As of December 31, 2019, approximately 25% of our employees had been with us for less than one year and approximately 49% for less than two years.

We believe that two critical components of our success and our ability to retain our best people are our culture and our competitive compensation practices. Any volatility in our operating results and the trading price of our Class A common stock may cause our employee base to be more vulnerable to be targeted for recruitment by competitors. While we believe we compete favorably, competition for highly skilled employees is intense, particularly in the San Francisco Bay Area, where our headquarters is located. If we are unable to identify, hire and retain our senior management team and our key employees, our business, financial condition or results of operations could be harmed. Moreover, if our team fails to work together effectively to execute our plans and strategies on a timely basis, our business, financial condition or results of operations could be harmed.

We have historically hired a number of key personnel through acquisitions, and as competition with other game companies for attractive target companies with a skilled employee base persists and increases, we may incur significant expenses and difficulty in continuing this practice. The loss of talented employees with experience in the assets we acquire could result in significant disruptions to our business and the integration of acquired assets and businesses. If we do not succeed in recruiting, retaining, and motivating these key employees, we may not achieve the anticipated results of acquisitions.

Our core values of focusing on our players and acting for the long-term may conflict with the short-term expectations of analysts.

We believe surprising and delighting our players is essential to our success and serves the best, long-term interests of Zynga and our stockholders. Therefore, we have made in the past and we may make in the future, significant investments or changes in strategy that we think will benefit us in the long-term, even if our decision has the potential to negatively impact our operating results in the short term. In addition, our decisions may not result in the long-term benefits that we expect, in which case the success of our games, business, financial condition or results of operations could be harmed.

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

The number of people using mobile Internet-enabled devices has increased dramatically over time and we expect that this trend will continue. However, the mobile market, particularly the market for mobile games, may not grow in the way we anticipate. Our future success is substantially dependent upon the continued growth of the market for mobile games. In addition, we do not currently offer our games on all mobile devices. If the mobile devices on which our games are available decline in popularity or become obsolete faster than anticipated, we could experience a decline in revenue and bookings and may not achieve the anticipated return on our development efforts. Any such declines in the growth of the mobile market or in the use of mobile devices for games could harm our business, financial condition or results of operations.

Our ability to acquire and maintain licenses to intellectual property may affect our revenue and profitability. Competition for these licenses may make them more expensive and increase our costs.

While most of the intellectual property we use in our games is created by us, we also acquire rights to third-party intellectual property. For example, we use licensed intellectual property as creative assets in games such as *Game of Thrones™ Slots Casino*, Hit *It Rich! Slots*, *Wizard of Oz Slots* and *Wonka's World of Candy*, and we are developing new games using licensed intellectual property such as Harry Potter™ and Star Wars™.

Proprietary licenses typically limit our use of intellectual property to specific uses and for specific time periods, and include other contractual obligations with which we must comply. Competition for these licenses is intense, and often results in increased advances, minimum payment guarantees and royalties that we must pay to the licensor. If we are unable to obtain and remain in compliance with the terms of these licenses or obtain additional licenses on reasonable economic terms, our revenue and profitability may be adversely impacted. In addition, use of these intellectual properties generally requires that we pay a royalty to the licensor, which decreases our profitability. If the mix of player purchases shifts towards games in which we use licensed intellectual properties increases, our overall margins may be reduced.

In addition, many of our games are built on proprietary source code of third parties, such as Unity. If we are unable to renew licenses to proprietary source code underlying our games, or the terms and conditions of these licenses change at the time of renewal our business, financial condition or results of operations could be negatively impacted. We rely on third parties, including Unity, to maintain versions of their proprietary engines that allow us to ship our games on multiple platforms. If a third party from whom we license source code discontinues support for one or more of these platforms, our business, financial condition or results of operations could be negatively impacted.

Failure to protect or enforce our intellectual property rights or the costs involved in such enforcement could harm our business, financial condition or results of operations.

We regard the protection of our trade secrets, copyrights, trademarks, service marks, trade dress, domain names, patents, and other product rights as critical to our success. We strive to protect our intellectual property rights by relying on federal, state and common law rights, as well as contractual restrictions and business practices. We enter into confidentiality and invention assignment agreements with our employees and contractors and confidentiality agreements with parties with whom we conduct business in order to limit access to, and disclosure and use of, our proprietary information. However, these contractual arrangements and business practices may not prevent the misappropriation of our proprietary information or deter independent development of similar technologies by others.

We pursue the registration of our copyrights, trademarks, service marks, domain names, and patents in the U.S. and in certain locations outside the U.S. This process can be expensive and time-consuming, may not always be successful depending on local laws or other circumstances, and we also may choose not to pursue registrations in every location depending on the nature of the project to which the intellectual property rights pertain. We may, over time, increase our investments in protecting our creative works.

Litigation may be necessary to enforce our intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights claimed by others. For example, we have brought actions to protect our "Zynga Poker," "Ville," and "With Friends" franchises against third-party uses of those intellectual property assets and brands. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs, adverse publicity, and diversion of management and technical resources, any of which could adversely affect our business, financial condition or results of operations. If we fail to maintain, protect and enhance our intellectual property rights, our business, financial condition or results of operations may be harmed.

We are, and may in the future be, subject to intellectual property disputes, which are costly to defend and could require us to pay significant damages and could limit our ability to use certain technologies in the future.

From time to time, we have faced, and we may face in the future, allegations that we have infringed the trademarks, copyrights, patents and other intellectual property rights of third parties, including from our competitors, non-practicing entities and former employers of our personnel. Intellectual property litigation may be protracted and expensive, and the results are difficult to predict. As the result of any court judgment or settlement, we may be obligated to cancel the launch of a new game, stop offering a game or certain features of a game in a particular geographic region or worldwide, pay royalties or significant settlement costs, purchase licenses or modify our games and features, or develop substitutes.

In addition, we use open source software in our game development and expect to continue to use open source software in the future. From time to time, 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 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, financial condition or results of operations.

We are involved in legal proceedings that may result in adverse outcomes.

We are involved in claims, suits, government investigations, and proceedings arising in the ordinary course of our business, including actions with respect to intellectual property claims, privacy, data protection or law enforcement matters, tax matters, labor and employment claims, commercial and acquisition-related claims and other matters. Such claims, suits, government investigations, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of their outcomes, such legal proceedings can have an adverse impact on us because of legal costs, diversion of management and other personnel, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in liability, penalties, or sanctions, as well as judgments, consent decrees, or orders preventing us from offering certain features, functionalities, products, or services, or requiring a change in our business practices, products or technologies, which could in the future materially and adversely affect our business, financial condition or results of operations. See the section titled “Legal Matters” included in Note 15 – “Commitments and Contingencies” in the notes to the consolidated financial statements included herein.

Our business is subject to a variety of U.S. and foreign laws, many of which are unsettled and still developing and which could subject us to claims or otherwise harm our business.

We are subject to a variety of laws in the U.S. and abroad that affect our business, including state and federal laws regarding consumer protection, electronic marketing, protection of minors, data protection and privacy, competition, taxation, intellectual property, export and national security, which are continuously evolving and developing. The scope and interpretation of the laws that are or may be applicable to us are often uncertain and may be conflicting, particularly laws outside the U.S. There is a risk that existing or future laws may be interpreted in a manner that is not consistent with our current practices, and could have an adverse effect on our business. It is also likely that as our business grows and evolves and our games are played in a greater number of countries, we will become subject to laws and regulations in additional jurisdictions or other jurisdictions may claim that we are required to comply with their laws and regulations.

We are potentially subject to a number of foreign and domestic laws and regulations that affect the offering of certain types of content, such as that which depicts violence, many of which are ambiguous, still evolving and could be interpreted in ways that could harm our business or expose us to liability. In addition, there are ongoing academic, political and regulatory discussions in the U.S., Europe, Australia and other jurisdictions regarding whether certain game genres, such as social casino, or certain game mechanics, such as “loot boxes”, should be subject to a higher level or different type of regulation than other game genres or mechanics to protect consumers, in particular minors and persons susceptible to addiction, and, if so, what such regulation should include. For example, in 2018 a court determined that a class-action plaintiff was able to state a claim that an online social casino game operated by Big Fish Games, Inc. violated a specific anti-gambling law in Washington State. Because of this ruling, several social casino gaming companies are facing class-action suits in Washington State. We disagree with this ruling and are continuing to monitor these cases and the related legislative proceedings in Washington State aimed at clarifying the applicability of the specific anti-gambling law to social casino games. If new social casino regulations are imposed, or other regulations are interpreted to apply to our social casino games, certain of (or all of) our casino-themed games may become subject to such rules and regulations and expose us to civil and criminal penalties if we do not comply. Additionally, loot box game mechanics have been the subject of increased public discussion – for example, Belgium and the Netherlands have recommended enforcement actions against certain companies, the U.S. Federal Trade Commission (“FTC”) held a public workshop on loot boxes in August 2019, at least one bill has been introduced in the U.S. Senate that would regulate loot boxes in games marketed toward players under the age of 18 and politicians have cited loot boxes as an example of recent technology innovation where government regulation is needed. In some of our games, such as *Empires & Puzzles*, *CSR Racing 2*, *Merge Dragons!*, *Merge Magic!* and *Zynga Poker*, certain mechanics may be deemed as “loot boxes”. New regulation by the FTC, U.S. states or other international jurisdictions, which may vary significantly across jurisdictions and which we may be required to comply with, could require that these game mechanics be modified or removed from games, increase the costs of operating

our games, impact player engagement and monetization or otherwise harm our business performance. It is difficult to predict how existing or new laws may be applied to these or similar game mechanics. If we become liable under these laws or regulations, we could be directly harmed, and we may be forced to implement new measures to reduce our exposure to this liability. This may require us to expend substantial resources or to modify our games, which would harm our business, financial condition and results of operations. In addition, the increased attention focused upon liability issues as a result of lawsuits and legislative proposals could harm our reputation or otherwise impact the growth of our business. Any costs incurred as a result of this potential liability could harm our business, financial condition or results of operations.

It is possible that a number of laws and regulations may be adopted or construed to apply to us in the U.S. and elsewhere that could restrict the online and mobile industries, including player privacy, advertising, taxation, content suitability, copyright, distribution and antitrust. Furthermore, the growth and development of electronic commerce and virtual items may prompt calls for more stringent consumer protection laws that may impose additional burdens on companies such as ours conducting business through the Internet and mobile devices. We anticipate that scrutiny and regulation of our industry will increase and we will be required to devote legal and other resources to addressing such regulation. For example, existing laws or new laws regarding the marketing of in-app purchases, labeling of free-to-play games, or regulation of currency, banking institutions, unclaimed property, or money transmission may be interpreted to cover our games and the virtual currency, goods or payments that we receive. If that were to occur we may be required to seek licenses, authorizations or approvals from relevant regulators, the granting of which may be dependent 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 U.S. or elsewhere regarding these activities may lessen the growth of social game services and impair our business, financial condition or results of operations.

Our international operations are subject to increased challenges and risks.

Continuing to expand our business to attract players in countries other than the U.S. is a critical element of our business strategy. An important part of targeting international markets is developing offerings that are localized and customized for the players in those markets. We expect to continue to expand our international operations in the future by opening new international studio locations and expanding our offerings in additional countries and languages. Our ability to expand our business and to attract talented employees and players in an increasing number of international markets will require considerable management attention and resources and is subject to the particular challenges of supporting a rapidly growing business in an environment of multiple languages, cultures, customs, legal systems, alternative dispute systems, regulatory systems and commercial infrastructures. We have experienced difficulties in the past and have not been successful in all the countries we have entered. Expanding our international focus may subject us to risks that we have not faced before or increase risks that we currently face, including risks associated with:

- inability to offer certain games in certain foreign countries;
- recruiting and retaining talented and capable management and employees in foreign countries;
- challenges caused by distance, language and cultural differences;
- developing and customizing games and other offerings that appeal to the tastes and preferences of players in international markets;
- competition from local game makers with intellectual property rights and significant market share in those markets and with a better understanding of player preferences;
- utilizing, protecting, defending and enforcing our intellectual property rights;
- negotiating agreements with local distribution platforms that are sufficiently economically beneficial to us and protective of our rights;
- the inability to extend proprietary rights in our brand, content or technology into new jurisdictions;
- implementing alternative payment methods for virtual items in a manner that complies with local laws and practices and protects us from fraud;
- compliance with applicable foreign laws and regulations, including privacy laws and laws relating to content and consumer protection (for example, the United Kingdom’s Office of Fair Trading’s 2014 principles relating to in-app purchases in free-to-play games that are directed toward children 16 and under);
- compliance with anti-bribery laws, including the Foreign Corrupt Practices Act;
- credit risk and higher levels of payment fraud;
- currency exchange rate fluctuations;

- protectionist laws and business practices that favor local businesses in some countries;
- double taxation of our international earnings and potentially adverse tax consequences due to changes in the tax laws of the U.S. or the foreign jurisdictions in which we operate;
- political, economic and social instability;
- higher costs associated with doing business internationally;
- export or import regulations; and
- trade and tariff restrictions.

If we are unable to manage the complexity of our global operations successfully, our business, financial condition and operating results could be adversely affected. Additionally, our ability to successfully gain market acceptance in any particular market is uncertain, and the distraction of our senior management team could harm our business, financial condition or results of operations.

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

We have implemented a number of restructurings in the past in which we implemented certain restructuring actions and cost reduction initiatives to streamline operations and improve cost efficiencies to better align our operating expenses with our revenue, including reducing our headcount, rationalizing our product pipeline, reducing marketing and technology expenditures and consolidating and closing certain facilities. We plan to continue to manage costs to better and more efficiently manage our business. Our restructuring plans and other such efforts could result in disruptions to our operations and adversely affect our business, financial condition or results of operations.

We actively monitor our costs, however, if we do not fully realize or maintain the anticipated benefits of any restructuring actions and cost reduction initiatives, our business, financial condition or results of operations could be adversely affected, and additional restructuring initiatives may be necessary. In addition, we cannot be sure that the cost reduction initiatives will be as successful in reducing our overall expenses as expected or that additional costs will not offset any such reductions. 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.

In addition, our cost-cutting measures could negatively impact our business, financial condition or results of operations including but not limited to, delaying the introduction of new games, features or events, interrupting live services, impairing our control environment, delaying introduction of new technology, impacting our ability to react nimbly to game or technology issues, or impacting employee retention and morale.

The exit by the United Kingdom from the European Union could harm our business, financial condition or results of operations.

The United Kingdom left the European Union on January 31, 2020 (commonly referred to as “Brexit”) and entered into a transition period in which the United Kingdom and the European Union are negotiating their future relationship, including the terms of trade between the United Kingdom and the European Union. The effects of Brexit will depend on any agreements the United Kingdom makes to retain access to European Union markets after the transitional period. Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the United Kingdom determines which European Union laws to replace or replicate.

The announcement of Brexit caused (and the post-transition period relationship between the United Kingdom and the European Union is expected to cause future) significant volatility in global stock markets, which could cause our stock price to be subject to wide fluctuations, and significant fluctuations in foreign currency exchange rates, which will affect our financial results as we report in U.S. dollars and may affect our ability to attract and retain employees in the United Kingdom. The announcement of Brexit also created (and the post-transition period relationship between the United Kingdom and the European Union may create future) global economic uncertainty, which may cause our players to reduce the amount of money they spend on our games. The post-transition period relationship between the United Kingdom and the European Union could cause disruptions to and create uncertainty surrounding our business, including affecting our United Kingdom operations and relationships with existing and future players, suppliers and employees. Any of these effects of Brexit, and others we cannot anticipate, could harm our business, financial condition or results of operations.

Companies and governmental agencies may restrict access to platforms, our website, mobile applications or the Internet generally, which could lead to the loss or slower growth of our player base.

Our players generally need to access the Internet and in particular platforms such as the Apple App Store, the Google Play Store, Facebook, Snapchat or our website to play our games. Companies and governmental agencies could block access to any platform, our website, mobile applications or the Internet generally for a number of reasons such as security or confidentiality concerns or regulatory reasons, or they may adopt policies that prohibit employees from accessing Apple, Google, Facebook and our website or any social platform. If companies or governmental entities block or limit such or otherwise adopt policies restricting players from playing our games, our business could be negatively impacted and could lead to the loss or slower growth of our player base.

Changes in tax laws or tax rulings could materially affect our effective tax rates, financial position and results of operations.

The tax regimes we are subject to or operate under are unsettled and may be subject to significant change. Changes in tax laws or tax rulings, or changes in interpretations of existing laws, could cause us to be subject to additional income-based taxes and non-income taxes (such as payroll, sales, use, value-added, digital tax, net worth, property, and goods and services taxes), which in turn could materially affect our financial position and results of operations. For example, in December 2017, the U.S. federal government enacted the Tax Cuts and Jobs Act ("2017 Tax Act"). The 2017 Tax Act significantly changed the existing U.S. corporate income tax laws by, among other things, lowering the corporate tax rate, implementing a partially territorial tax system, and imposing a one-time deemed repatriation toll tax on cumulative undistributed foreign earnings. Another example is the June 7, 2019 opinion issued in Altera Corp v. Commissioner by a three judge panel from the U.S. Court of Appeals for the Ninth Circuit ("Ninth Circuit"), reversing a 2015 U.S. Tax Court decision. The Ninth Circuit ruled in favor of the Commissioner, validating U.S. Treasury regulations that require parties to a qualified cost-sharing arrangement to include stock-based compensation in the cost pool. The taxpayer subsequently petitioned the Ninth Circuit for a rehearing en banc, and, on November 12, 2019, the Ninth Circuit denied such petition. On February 10, 2020, the taxpayer requested the U.S. Supreme Court to review the Ninth Circuit's decision. It is unclear whether the U.S. Supreme Court will review the case or when a determination will be made. As a result, the final outcome of the case is uncertain; however, if the Ninth Circuit's opinion is upheld, our ability to offset 2019 taxable income with net operating losses may be reduced. In addition, many countries in the European Union, as well as a number of other countries and organizations such as the Organization for Economic Cooperation and Development, have recently proposed or recommended changes to existing tax laws or have enacted new laws that could impact our tax obligations. Any significant changes to our future effective tax rate may result in a material adverse effect on our business, financial condition, results of operations, or cash flows. For more information, see Note 9 – "Income Taxes" in the notes to the consolidated financial statements included herein.

We may have exposure to greater than anticipated tax liabilities.

Our income tax obligations are based in part on our corporate operating structure and intercompany arrangements, including the manner in which we develop, value, manage, and use our intellectual property and the valuation of our intercompany transactions. The tax laws applicable to our business, including the laws of the U.S. and other jurisdictions, are subject to interpretation and certain jurisdictions are aggressively interpreting their laws in new ways in an effort to raise additional tax revenue. Our existing corporate structure and intercompany arrangements have been implemented in a manner we believe is in compliance with current prevailing tax laws. However, the taxing authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology or intercompany arrangements, which could impact our worldwide effective tax rate and harm our financial position and results of operations. In addition, changes to our corporate structure and intercompany agreements, including through acquisitions, could impact our worldwide effective tax rate and harm our financial position and results of operations. As a result of recent changes in tax laws, we are exploring certain changes to our international tax structure, although there can be no guarantee that any modified structure will achieve our intended goals.

We may require additional capital to meet our financial obligations and support business growth, and this capital might not be available on acceptable terms or at all.

We intend to continue to make significant investments to support our business growth and may require additional funds to respond to business challenges, including the need to develop new games and features or enhance our existing games, improve our operating infrastructure or acquire complementary businesses, personnel and technologies. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our Class A common stock. Any debt financing that we secure in the future could involve offering additional security interests and undertaking restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. In December 2018, we entered into a credit agreement for a three-year revolving credit facility, and we must adhere to financial covenants therein. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business, financial condition or results of operations may be harmed.

In addition, in June 2019, we issued $690.0 million aggregate principal amount of 0.25% Convertible Senior Notes due 2024 (the "Notes"). We may not have the ability to raise the funds necessary to settle conversions of the Notes in cash, to repurchase the Notes upon a fundamental change or to repay the Notes in cash at their maturity (if not earlier converted, redeemed or repurchased), and our future debt may contain limitations on our ability to pay cash upon conversions of the Notes or at their maturity or to repurchase the Notes. Holders of the Notes may require us to repurchase all or a portion of their Notes upon the occurrence of a fundamental change (as defined in the indenture under which the Notes were issued) before the maturity date at a repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion of the Notes, unless we elect to deliver solely shares of our Class A common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Notes being converted. Moreover, we will be required to repay the Notes in cash at their maturity unless earlier converted, redeemed or repurchased. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of the Notes surrendered therefor or pay cash with respect to the Notes being converted or at their maturity.

In addition, our ability to repurchase the Notes or to pay cash upon conversions of the Notes or at their maturity may be limited by law, regulatory authority or agreements governing our future indebtedness. Our failure to repurchase the Notes at a time when the repurchase is required by the indenture or to pay cash upon conversions of the Notes or to repay the Notes at their maturity as required by the indenture would constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our existing and future indebtedness. Moreover, the occurrence of a fundamental change under the indenture could constitute an event of default under any such agreement. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay such indebtedness and repurchase the Notes or pay cash with respect to notes being converted or at maturity of the Notes.

Provisions in the indenture for the Notes may deter or prevent a business combination that may be favorable to you.

If a fundamental change occurs prior to the maturity date of the Notes, holders of the Notes will have the right, at their option, to require us to repurchase all or a portion of their Notes. In addition, if a make-whole fundamental change occurs prior to the maturity date of the Notes, we will in some cases be required to increase the conversion rate for a holder that elects to convert its Notes in connection with such make-whole fundamental change. Furthermore, the indenture for the Notes will prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the Notes. These and other provisions in the indenture could deter or prevent a third party from acquiring us even when the acquisition may be favorable to you.

We are subject to counterparty risk with respect to the capped call transactions.

The counterparties to the capped call transactions entered into in connection with the offering of the Notes are financial institutions, and we will be subject to the risk that one or more of the counterparties may default or otherwise fail to perform, or may exercise certain rights to terminate, their obligations under the capped call transactions. Our exposure to the credit risk of the counterparties will not be secured by any collateral. Global economic conditions have in the past resulted in the actual or perceived failure or financial difficulties of many financial institutions. If a counterparty to one or more capped call transactions becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at the time under such transactions. Our exposure will depend on many factors but, generally, our exposure will increase if the market price or the volatility of our common stock increases. In addition, upon a default or other failure to perform, or a termination of obligations, by a counterparty, the counterparty may fail to deliver the shares of common stock required to be delivered to us under the capped call transactions and we may suffer adverse tax consequences or experience more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the counterparties.

The occurrence of an earthquake, other natural disaster or other significant business interruption at or near any of our facilities could cause damage to our facilities and equipment and interfere with our operations.

Our principal offices are located in the San Francisco Bay Area, an area known for earthquakes, and are thus vulnerable to damage. All of our facilities are also vulnerable to damage from natural or manmade disasters, including power loss, fire, explosions, floods, communications failures, terrorist attacks, contagious disease outbreak and similar events. If any disaster were to occur, our ability to operate our business at our facilities could be impaired and we could incur significant losses, recovery from which may require substantial time and expense.

Risks Related to Our Class A Common Stock

Our share price has been and will likely continue to be volatile.

The trading price of our Class A common stock has been, and is likely to continue to be, highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. During the 2019 fiscal year, the trading price of our Class A common stock ranged from a low of $3.87 per share to a high of $6.65 per share. In addition to the factors discussed in these "Risk Factors" and elsewhere in this filing, factors that may cause volatility in our share price include:

- changes in projected operational and financial results;
- issuance of new or updated research or reports by securities analysts;
- market rumors or press reports;
- announcements related to our share repurchase program;
- our announcement of significant transactions;
- actions instituted by activist shareholders or others;
- the use by investors or analysts of third-party data (such as AppData, App Annie, comScore, and Sensor Tower) regarding our business and operating metrics which may not reflect our actual performance or financial results;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- the activities, public announcements and financial performance of our commercial partners, such as Apple, Amazon, Facebook and Google;
- fluctuations in the trading volume of our shares, or the size of our public float relative to the total number of shares of our Class A common stock that are issued and outstanding;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our Class A common stock. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We have been the target of this type of litigation as described in the section titled "Legal Matters" included in Note 15 —"Commitments and Contingencies" in the notes to the consolidated financial statements included herein. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could harm our business.

In addition, in November 2016, the 2016 Share Repurchase Program was authorized for up to $200.0 million of our outstanding Class A common stock. In the second quarter of 2018, we completed all purchases under the 2016 Share Repurchase Program. In April 2018, our Board of Directors authorized the 2018 Share Repurchase Program allowing us to repurchase up to an additional $200.0 million of our outstanding shares of Class A common stock. The timing and amount of any stock repurchases will be determined based on market conditions, share price and other factors. The 2018 Share Repurchase Program, which will expire in April 2022, does not require us to repurchase any specific number of shares of our Class A common stock, and may be modified, suspended or terminated at any time without notice. The 2018 Share Repurchase Program will be funded from existing cash on hand or other sources of financing as the Company may determine to be appropriate. Share repurchases under these authorizations may be made through a variety of methods, which may include open market purchases, privately negotiated transactions, block trades, accelerated share repurchase transactions, purchases through 10b5-1 plans or by any combination of such methods. Repurchases of our Class A common stock in the open market could result in increased volatility in our stock price. There is no guarantee that we will make any share repurchases under the 2018 Share Repurchase Program or otherwise in the future.

The capped call transactions may affect the value of the Notes and our Class A common stock.

In connection with the issuance of the Notes, we entered into privately negotiated capped call transactions with Goldman Sachs & Co. LLC, Morgan Stanley & Co. LLC and Bank of America, N.A. The capped call transactions cover, subject to customary adjustments, the number of shares of our Class A common stock initially underlying the Notes. The capped call transactions are expected to offset the potential dilution and/or offset any cash payments we are required to make in excess of the aggregate principal amount of converted Notes, as the case may be, as a result of conversion of the Notes.

From time to time, the counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our Class A common stock and/or purchasing or selling our Class A common stock or other securities of ours in secondary market transactions following the pricing of the Notes and prior to the maturity of the Notes (and are likely to do so during any observation period related to a conversion of the Notes). This activity could also cause or prevent an increase or a decrease in the market price of our Class A common stock or the Notes.

Certain provisions in our charter documents and under Delaware law could limit attempts by our stockholders to replace or remove our Board of Directors or current management and limit the market price of our Class A common stock.

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing changes in our Board of Directors or management. Our certificate of incorporation and bylaws include provisions that:

- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting, including proposed nominations of persons for election to our Board of Directors;
- prohibit cumulative voting in the election of directors;
- authorize “blank check” preferred stock that our Board of Directors could issue; and
- limit the ability of stockholders to call a special stockholder meeting and to act by written consent.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board of Directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any “interested” stockholder for a period of three years following the date on which the stockholder became an “interested” stockholder.

Our Class A common stock price may be volatile due to third-party data regarding our games.

Third parties, such as AppData, App Annie, comScore, and Sensor Tower publish daily data about us and other social game companies with respect to downloads, DAUs and MAUs, monthly revenue, top game charts, time spent per user and other information concerning social game usage. 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 and may not correlate to our bookings or revenue from the sale of virtual items. There is a possibility that third parties could change their methodologies for calculating these metrics in the future. To the extent that securities analysts or investors base their views of our business or prospects on such third-party data, the price of our Class A common stock may be volatile and may not reflect the performance of our business.

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

The trading market for our Class A common stock, to some extent, depends on 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 could cause our share price or trading volume to decline.

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

If we are unable to maintain adequate internal controls for financial reporting in the future, or if our auditors are unable to express an opinion as to the effectiveness of our internal controls as required pursuant to the Sarbanes-Oxley Act, investor confidence in the accuracy of our financial reports may be impacted or the market price of our Class A common stock could be negatively impacted.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified Board members.

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform Act and Consumer Protection Act of 2010, the listing requirements of the NASDAQ Global Select Market and other applicable securities rules and regulations. Compliance with these rules and regulations has increased and will continue to increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and increase demand on our systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and operating results.

As a result of disclosure of information in our public filings with the SEC as required of a public company, our business and financial condition have become more visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business, financial condition or results of operations could be harmed, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and harm our business, financial condition or results of operations.

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 Class A 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

On July 1, 2019, the Company sold its San Francisco headquarters (the "Building") and related land, including all preexisting leases between the Company and third-party tenants of the Building (the "Building Sale"). In connection with the Building Sale, the Company executed a leaseback of approximately 185,000 square feet of the Building, where we expect to continue operating our headquarters. Our headquarters currently accommodates our principal executive, development, engineering, marketing, business development, human resources, finance, legal, information technology and administrative activities.

We lease additional domestic office space in California, Oregon, Texas, Illinois and New York. We lease offices for our foreign operations in Canada, India, Ireland, Finland, Turkey and England. These additional domestic and international facilities total approximately 216,000 square feet, excluding properties for which we cannot reliably estimate square footage. The excluded properties include shared corporate office spaces whereby rent is determined based on the number of individuals utilizing the space over a specified period of time.

We believe that our existing facilities are sufficient for our current needs. We believe that suitable additional or substitute space will be available as needed to accommodate changes in our operations.

ITEM 3. LEGAL PROCEEDINGS

For a description of our material legal proceedings, see the section titled "Legal Matters' included in Note 15 —"Commitments and Contingencies" in the notes to the consolidated financial statements, which is incorporated by reference herein.

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

Our Class A common stock has been listed on the NASDAQ Global Select Market under the symbol "ZNGA" since December 16, 2011. Prior to that time, there was no public market for our stock. Further, in May 2018, all of our outstanding shares of Class B and Class C common stock were converted into shares of Class A common stock on a one-for-one basis.

Holders of Record

Many of our shares of Class A common stock are held by brokers and other institutions on behalf of our stockholders and accordingly, we are unable to estimate the total number of stockholders represented by these record holders. Excluding such brokers and institutions, as of December 31, 2019, there were approximately 567 stockholders of record of our Class A common stock and the closing price of our Class A common stock was $6.12 per share as reported on the NASDAQ Global Select Market.

Dividend Policy

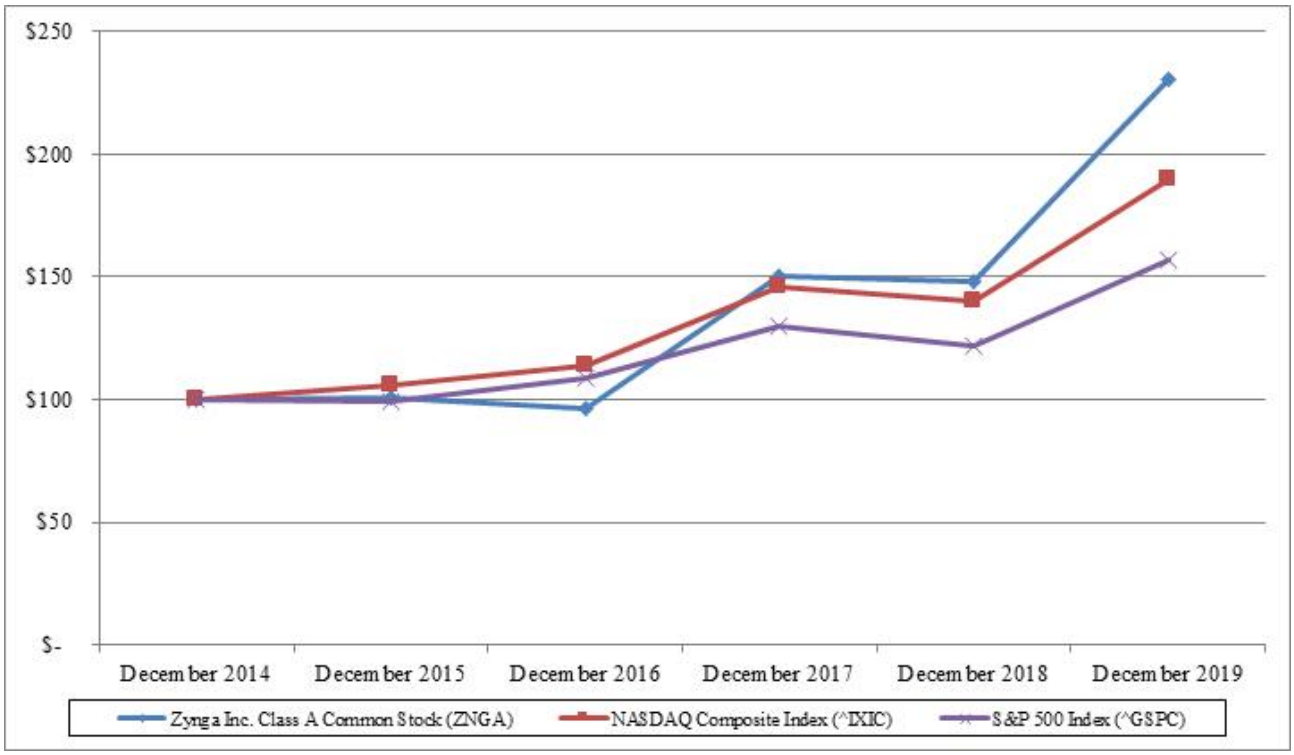
We have never declared or paid any cash dividend on our Class A common stock. We intend to retain any future earnings and do not expect to pay dividends in the foreseeable future.

Issuer Purchases of Equity Securities

In April 2018, we authorized the 2018 Share Repurchase Program for up to $200.0 million of our outstanding Class A common stock and during 2018, we repurchased 7.1 million shares of our Class A common stock under the 2018 Share Repurchase Program at a weighted average price of $3.71 per share for a total of $26.2 million. During 2019, no share repurchases were made and as of December 31, 2019, we had $173.8 million remaining under the 2018 Share Repurchase Program. The 2018 Share Repurchase Program will expire in April 2022.

Stock Performance Graph

The following graph compares the cumulative total stockholder return for our Class A common stock, the Standard and Poor's 500 Stock Index (the "S&P 500 Index") and the NASDAQ Composite Index. The graph assumes that $100 was invested on December 31, 2014 in our Class A common stock, the S&P 500 Index and the NASDAQ Composite Index and tracks share price performance through the last trading day of each fiscal year-end through December 31, 2019. As we have not paid any dividends, our cumulative total return calculation is based solely upon stock price appreciation and not upon reinvestment of any dividends. The stock price performance on the following graph is not necessarily indicative of future stock price performance.



The information furnished under the heading "Stock Performance Graph", including the performance graph, shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any other filing under the Securities Act of 1933, as amended or the Exchange Act, except as expressly set forth by specific reference in such a filing.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL AND OTHER DATA

The following selected consolidated financial and other data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our audited consolidated financial statements and related notes, which are included elsewhere in this Annual Report on Form 10-K. The consolidated statements of operations data for the years ended December 31, 2019, 2018 and 2017 as well as the consolidated balance sheet data as of December 31, 2019 and 2018 are derived from the audited consolidated financial statements that are included in Item 8 – Financial Statements and Supplementary Data in this Annual Report on Form 10-K. The consolidated statement of operations data for the years ended December 31, 2016 and 2015 as well as the consolidated balance sheet data as of December 31, 2017, 2016 and 2015, are derived from audited consolidated financial statements that are not included in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results to be expected in the future.

	Year Ended December 31,				
	2019	2018	2017	2016	2015
	(in thousands, except per share, user and ABPU data)				
Consolidated Statements of Operations Data:					
Revenue(1):					
Online game	$ 1,047,237	$ 670,877	$ 665,593	$ 547,291	$ 590,755
Advertising and other	274,422	236,331	195,797	194,129	173,962
Total revenue	1,321,659	907,208	861,390	741,420	764,717
Costs and expenses:					
Cost of revenue	524,089	304,658	258,971	238,546	235,985
Research and development	505,889	270,323	256,012	320,300	361,931
Sales and marketing	464,091	226,524	212,030	183,637	169,573
General and administrative	99,790	98,941	108,653	92,509	143,284
Impairment of intangible assets	—	—	—	20,677	—
Total costs and expenses	1,593,859	900,446	835,666	855,669	910,773
Income (loss) from operations	(272,200)	6,762	25,724	(114,249)	(146,056)
Interest income	14,039	6,549	5,309	3,057	2,568
Interest expense	(16,971)	(255)	(22)	(968)	(659)
Other income (expense), net	322,467	13,407	6,572	7,429	13,965
Income (loss) before income taxes	47,335	26,463	37,583	(104,731)	(130,182)
Provision for (benefit from) income taxes	5,410	11,006	10,944	3,442	(8,672)
Net income (loss)	$ 41,925	$ 15,457	$ 26,639	$ (108,173)	$ (121,510)
Net income (loss) per share attributable to common stockholders					
Basic	$ 0.04	$ 0.02	$ 0.03	$ (0.12)	$ (0.13)
Diluted	$ 0.04	$ 0.02	$ 0.03	$ (0.12)	$ (0.13)
Weighted average common shares used to compute net income (loss) per share attributable to common stockholders:					
Basic	938,709	862,460	869,067	878,827	913,511
Diluted	974,020	889,584	897,165	878,827	913,511
Other Non-GAAP Financial Data:					
Bookings(2)	$ 1,564,061	$ 969,542	$ 853,809	$ 754,533	$ 699,955
Other Non-GAAP Financial and Operational Data:					
Average Mobile DAUs (in millions)(3)	21	21	19	15	16
Average Mobile MAUs (in millions)(4)	69	78	71	53	64
Average Mobile MUUs (in millions)(5)	41	45	46	46	44
Mobile ABPU(6)	$ 0.196	$ 0.114	$ 0.108	$ 0.107	$ 0.080

(1) Revenue amounts for the years ended December 31, 2015 - 2017 have not been retrospectively adjusted to reflect the adoption of ASC 606.

(2) See the section titled "Non-GAAP Financial Measures" below for how we define and calculate bookings, a reconciliation between bookings and revenue – the most directly comparable U.S. GAAP financial measure – and a discussion about the limitation of bookings.

(3) Mobile DAUs are the number of individuals who played one of our mobile games during a particular day, as recorded by our internal analytics systems. Average Mobile DAUs is the average of the Mobile DAUs for each day during the period reported. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics—Key Operating Metrics" for more information on how we define and estimate Mobile DAUs, as well as the related table footnotes for discussion on the limitations of our estimates.

(4) Mobile MAUs are the number of individuals who played a particular mobile game during a 30-day-period, as recorded by our internal analytics systems. Average Mobile MAUs is the average of the Mobile MAUs at each month-end during the period reported. See the section titled "Management's

Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics—Key Operating Metrics" for more information on how we define and estimate Mobile MAUs, as well as the related table footnotes for discussion on the limitations of our estimates.

(5) Mobile MUUs are the number of unique individuals who played any of our mobile games on a particular platform during a 30-day period, as estimated by our internal analytics systems. Average Mobile MUUs is the average of the Mobile MUUs at each month-end during the period reported. We are unable to distinguish whether players of certain games are also players of other Zynga games. As a result of this, we exclude players of these games from our calculation of the applicable key operating metric to avoid potential double counting. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics—Key Operating Metrics" for more information on how we define and estimate Mobile MUUs, as well as the related table footnotes for discussion on the limitations of our estimates.

(6) Mobile ABPU is defined as our total mobile bookings in a given period, divided by the number of days in that period, divided by the average Mobile DAUs during the period. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics—Key Operating Metrics" for more information on how we define and estimate Mobile ABPU.

Stock-based compensation expense included in the consolidated statements of operations data above was as follows (in thousands):

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Cost of revenue	$ 1,471	$ 1,584	$ 1,838	$ 3,720	$ 4,547
Research and development	47,049	42,151	42,176	84,236	94,548
Sales and marketing	11,277	8,495	7,281	7,254	7,501
General and administrative	21,685	16,009	13,220	12,251	24,979
Total stock-based compensation	$ 81,482	$ 68,239	$ 64,515	$ 107,461	$ 131,575

	As of December 31,				
	2019	2018	2017	2016	2015
Consolidated Balance Sheets Data:					
Cash, cash equivalents and investments	$ 1,536,796	$ 581,222	$ 681,376	$ 852,467	$ 987,250
Property and equipment, net	25,826	266,557	266,589	269,439	273,221
Working capital(1)	783,702	267,443	548,239	721,836	876,084
Total assets	3,660,614	2,146,703	1,979,333	1,905,849	2,124,630
Current and non-current deferred revenue	433,529	192,885	134,575	142,156	129,043
Current debt	—	100,000	—	—	—
Convertible senior notes, net	570,456	—	—	—	—
Total stockholders' equity	1,975,430	1,596,610	1,641,240	1,580,664	1,786,901

(1) Working capital is defined as total current assets less total current liabilities.

Non-GAAP Financial Measures

Bookings

To provide investors with additional information about our financial results, we disclose bookings within this Annual Report on Form 10-K, a non-GAAP financial measure. We have provided below a reconciliation between bookings and revenue, the most directly comparable U.S. GAAP financial measure.

Bookings is a non-GAAP financial measure that is equal to revenue recognized plus or minus the change in deferred revenue during the period. We record the sale of virtual items as deferred revenue and then recognize that revenue over the estimated average playing period of payers or as the virtual items are consumed. Advertising sales consisting of certain branded virtual items and sponsorships are also initially recorded to deferred revenue and then recognized ratably over the estimated life of the branded virtual item, which approximates the estimated average playing period of payers, or over the term of the advertising arrangement, depending on the nature of the agreement. For additional discussion of the estimated average playing period of payers, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Revenue Recognition" elsewhere in this Annual Report on Form 10-K.

We use bookings as one measure to evaluate the results of our operations, generate future operating plans and assess the performance of our company. While we believe that bookings are useful in evaluating our business, this information should be considered as supplemental in nature and is not intended to be considered in isolation of, as a substitute for, or as superior to, revenue recognized in accordance with U.S. GAAP. In addition, other companies, including companies in our industry, may calculate bookings differently or not at all, which reduces its usefulness as a comparative measure.

The following table presents a reconciliation of total revenue to total bookings for each of the periods presented (in thousands):

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Reconciliation of Revenue to Bookings:					
Revenue[1]	$ 1,321,659	$ 907,208	$ 861,390	$ 741,420	$ 764,717
Change in deferred revenue[1]	242,402	62,334	(7,581)	13,113	(64,762)
Bookings	$ 1,564,061	$ 969,542	$ 853,809	$ 754,533	$ 699,955

(1) Amounts for the years ended December 31, 2015 - 2017 have not been retrospectively adjusted to reflect the adoption of ASC 606.

The following table presents a reconciliation of mobile revenue to mobile bookings for each of the periods presented (in thousands):

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Reconciliation of Mobile Revenue to Mobile Bookings:					
Mobile revenue[1]	$ 1,247,734	$ 815,521	$ 739,496	$ 574,371	$ 489,543
Change in mobile deferred revenue[1]	245,650	66,983	1,831	30,404	(13,899)
Mobile bookings	$ 1,493,384	$ 882,504	$ 741,327	$ 604,775	$ 475,644

(1) Amounts for the years ended December 31, 2015 - 2017 have not been retrospectively adjusted to reflect the adoption of ASC 606.

Limitations of Bookings

Key limitations of bookings are:

- bookings do not reflect that we defer and recognize online game revenue and revenue from certain advertising transactions over the estimated average playing period of payers, the average life of branded virtual items, the term of the advertising arrangement or as virtual items are consumed; and
- other companies, including companies in our industry, may calculate bookings differently or not at all, which reduces their usefulness as a comparative measure.

Because of these limitations, you should consider bookings along with other financial performance measures, including revenue, net income (loss) and our other financial results presented in accordance with U.S. GAAP.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion of our financial condition and results of operations in conjunction with the consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in "Special Note Regarding Forward-Looking Statements" and "Risk Factors." The forward-looking statements included in this Annual Report on Form 10-K are made only as of the date hereof.

Overview

We are a leading provider of social game services with approximately 69 million average Mobile MAUs during 2019. We develop, market and operate social games as live services played on mobile platforms, such as Apple's iOS and Google's Android, and social networking platforms, such as Facebook and Snapchat. Generally, all of our games are free to play, and we generate substantially all of our revenue through the sale of in-game virtual items ("online game revenue") and advertising services ("advertising revenue")

We are a pioneer and innovator of social games and a leader in making "play" a core activity primarily on mobile devices and social networking sites. Our objective is to become the worldwide leader in play by connecting the world through games.

Consistent with our free-to-play business model, a small portion of our players have historically been payers. For example, during 2019, our average Mobile MUPs represented approximately 3.0% of our average Mobile MUUs – for more information about the uses, estimates and limitations of these and other operating metrics, please see "Key Operating Metrics" below. Because the opportunity for social interactions increases as the number of players increases, we believe that maintaining and growing our overall number of players, including the number of players who may not purchase virtual items, is important to the success of our business. As a result, we believe that the number of players who choose to purchase virtual items will continue to constitute a small portion of our overall players.

Our top three online game revenue-generating games historically have contributed to a significant portion of our revenue, though the games that represent our top three online game revenue-generating games vary over time. Our top three online game revenue-generating games accounted for 48%, 45% and 45% of our online game revenue in 2019, 2018 and 2017, respectively. In 2019, our top three online game revenue-generating games were *Merge Dragons!*, *Empires & Puzzles* and *Zynga Poker*. With respect to advertising and other revenue, our *Words With Friends* games generated a substantial portion of our advertising and other revenue in 2019, 2018 and 2017.

How We Generate Revenue

We generate revenue primarily from the sale of in-game virtual items and advertising services. Revenue growth will continue to depend largely on our ability to attract and retain players and more effectively monetize our player base through the sale of in-game virtual items and advertising. We intend to do this through the launch of new games, enhancements to current games and expansion into new markets and distribution platforms.

In 2019, our business continued generating a higher percentage of revenue and bookings through mobile platforms. In 2019, we estimate that 50% and 43% of our revenue and 49% and 46% of our bookings were generated on Apple and Google platforms, respectively, while in 2018, we estimate that 51% and 38% of our revenue and 51% and 39% of our bookings were generated on Apple and Google platforms, respectively. This information is estimated because certain payment methods we accept and certain advertising networks do not allow us to determine the platform used.

In addition, we also incur licensing fees related to the use of intellectual property within our games and our operating margins can be affected by the mix of player purchases from games in which we own the intellectual property as compared to games in which we license certain intellectual properties. For example, we use licensed intellectual property as creative assets in games such as *Game of Thrones Slots Casino*, *Hit It Rich! Slots*, *Wizard of Oz Slots* and *Wonka's World of Candy*, and we are developing new games using licensed intellectual property for Harry Potter™ and Star Wars™. While overall bookings within these games will benefit our revenue, a shift in the mix of our revenue towards such games using licensed intellectual property could decrease our operating margins.

Online game. We provide our players with the opportunity to purchase virtual items that enhance their game-playing experience. We believe players choose to pay for virtual items for the same reasons they are willing to pay for other forms of entertainment – they enjoy the additional playing time or added convenience, the ability to personalize their own game boards, the satisfaction of leveling up and the opportunity for sharing creative expressions. We believe players are more likely to purchase virtual items when they are connected to and playing with their friends, whether those friends play for free or purchase virtual items. Players may also elect to pay a one-time fee to play certain mobile games free of third-party advertisements for limited periods of time.

On mobile platforms, players purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts and Google Play accounts.

Advertising and other. Advertising revenue primarily includes display advertisements, engagement advertisements and offers and branded virtual items and sponsorships. Other revenue primarily consists of royalties received from the licensing of our brands.

Key Metrics

We regularly review a number of metrics, including the following key financial and operating metrics, to evaluate our business, measure our performance, identify trends in our business, prepare financial projections and make strategic decisions.

Key Financial Metrics

Revenue and Bookings. Bookings is a non-GAAP financial measure that is equal to revenue recognized plus or minus the change in deferred revenue during the period. We record the sale of virtual items as deferred revenue and then recognize that revenue over the estimated average playing period of payers or as the virtual items are consumed. Advertising sales consisting of certain branded virtual items and sponsorships are also initially recorded to deferred revenue and then recognized ratably over the estimated life of the branded virtual item, similar to online game revenue, or over the term of the advertising arrangement, depending on the nature of the agreement. Bookings is a fundamental top-line metric we use to manage our business, as we believe it is a useful indicator of the sales activity in a given period. Over the long-term, the factors impacting our revenue and bookings are the same. However, in the short term, there are factors that may cause revenue to exceed or be less than bookings in any period.

We use revenue and bookings to evaluate the results of our operations, generate future operating plans and assess the performance of our company. While we believe that bookings are useful in evaluating our business, this information should be considered as supplemental in nature and is not intended to be considered in isolation of, as a substitute for, or as superior to, revenue recognized in accordance with U.S. GAAP. In addition, other companies, including companies in our industry, may calculate bookings differently or not at all, which reduces its usefulness as a comparative measure.

Key Operating Metrics

We manage our business by tracking several operating metrics: “Mobile DAUs,” which measure daily active users of our mobile games, “Mobile MAUs,” which measure monthly active users of our mobile games, “Mobile MUUs,” which measure monthly unique users of our mobile games, “Mobile MUPs,” which measure monthly unique payers in our mobile games, and “Mobile ABPU,” which measures our average daily mobile bookings per average Mobile DAUs, each of which is recorded and estimated by our internal analytics systems. We determine these operating metrics by using internal company data based on tracking of user account activity. We also use information provided by third parties, including third party network logins provided by platform providers, to help us track whether a player logged in under two or more different user accounts is the same individual. We believe that the amounts are reasonable estimates of our user base for the applicable period of measurement and that the methodologies we employ and update from time-to-time are reasonably based on our efforts to identify trends in player behavior; however, factors relating to user activity and systems and our ability to identify and detect attempts to replicate legitimate player activity may impact these numbers.

Mobile DAUs. We define Mobile DAUs as the number of individuals who played one of our mobile games during a particular day. Under this metric, an individual who plays two different mobile games on the same day is counted as two Mobile DAUs. We use information provided by third parties to help us identify individuals who play the same mobile game to reduce this duplication. However, because we do not always have the third party network login data to link an individual who has played under multiple user accounts, a player may be counted as multiple Mobile DAUs. Average Mobile DAUs for a particular period is the average of the Mobile DAUs for each day during that period. We use Mobile DAUs as a measure of mobile audience engagement.

Mobile MAUs. We define Mobile MAUs as the number of individuals who played one of our mobile games in the 30-day period ending with the measurement date. Under this metric, an individual who plays two different mobile games in the same 30-day period is counted as two Mobile MAUs. We use information provided by third parties to help us identify individuals who play the same mobile game to reduce this duplication. However, because we do not always have the third party network login data to link an individual who has played under multiple user accounts, a player may be counted as multiple Mobile MAUs. Average Mobile MAUs for a particular period is the average of the Mobile MAUs at each month-end during that period. We use Mobile MAUs as a measure of total mobile game audience size.

Mobile MUUs. We define Mobile MUUs as the number of individuals who played one or more of our mobile games, which we were able to verify were played by the same individual in the 30-day period ending with the measurement date. An individual who plays more than one of our mobile games in a given 30-day period would be counted as a single Mobile MUU to the extent we can verify that the mobile games were played by the same individual. However, because we do not always have the third party network login data necessary to link an individual who has played under multiple user accounts in a given 30-day period, an individual may be counted as multiple Mobile MUUs. Because many of our players play more than one mobile game in a given 30-day period, Mobile MUUs are always equal to or lower than Mobile MAUs in any given time period. Average Mobile MUUs for a particular period is the average of the Mobile MUUs at each month end during that period. We use Mobile MUUs as a measure of total audience reach across our network of mobile games.

Mobile MUPs. We define Mobile MUPs as the number of individuals who made a payment in a mobile game at least once during the applicable 30-day period through a payment method for which we can quantify the number of individuals. Mobile MUPs do not include individuals who use certain payment methods for which we cannot quantify the number of unique payers. However, because we do not always have the third party network login data necessary to link an individual who has paid under multiple user accounts in a 30-day period, a player who has paid using multiple user accounts may be counted as multiple Mobile MUPs. Mobile MUPs are presented as an average of the three months in the applicable quarter. We use Mobile MUPs as a measure of the number of individuals who made payments across our network of mobile games during a 30-day period.

Mobile ABPU. We define Mobile ABPU as our total mobile bookings in a given period, divided by the number of days in that period, divided by the average Mobile DAUs during the period. We believe that Mobile ABPU provides useful information to investors and others in understanding and evaluating our results in the same manner as management. We use Mobile ABPU as a measure of overall monetization across all of our mobile players through the sale of virtual items and advertising.

Our business model around our social games is designed so that, as more players play our games, social interactions increase and the more valuable our games and our business become. All engaged players of our games help drive our bookings, online game revenue and advertising revenue. Virtual items are purchased by players who are socializing with, competing against or collaborating with other players, most of whom do not buy virtual items. Accordingly, we primarily focus on the aforementioned key operating metrics, which we believe collectively best reflect key audience metrics.

Consistent with our focus on mobile gaming platforms, beginning with the first quarter of 2019, we now report these audience-related metrics based only on mobile platforms. We have ceased including our web-based games in these audience metrics as a result of their decreasing significance as part of our overall financial and operating results and the technical challenges resulting from increased volumes of apparent player activity that we are unable to reliably validate and de-duplicate, as these web-based games are generally more susceptible than mobile platforms to attempts to replicate legitimate player activity.

In order to provide our best estimates of actual player metrics, we continually evaluate our methodologies including estimating audience metrics by applying data science techniques to identify suspicious player behavior. While we devote significant time and effort to developing player metrics, our estimates may not accurately reflect the actual amount of players in a reported period and our methodologies do not consistently identify all invalid traffic in prior reporting periods.

Specifically, in the first quarter of 2019, we updated our methodologies and approaches for identifying automated attempts to replicate legitimate player activity. Our estimation of such invalid traffic can vary from period to period, and we have identified periodic spikes in such activity (for example, in December 2018 when we previously included web-based games in our audience metrics, an invalid spike in web-based *Zynga Poker* player activity resulted in our exclusion of the game's web-based audience data from that month).

The table below shows average Mobile DAUs, Mobile MAUs, Mobile MUUs, Mobile MUPs and Mobile ABPU for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2019	2018	2019	2018
	(users and payers in millions)			
Average Mobile DAUs[1] [3]	20	21	21	21
Average Mobile MAUs[1] [3]	66	76	69	78
Average Mobile MUUs[2] [3]	39	44	41	45
Average Mobile MUPs[2] [3]	1.2	1.0	1.2	1.0
Mobile ABPU	$ 0.223	$ 0.130	$ 0.196	$ 0.114

(1) We do not always have the third party network login data to link an individual who has played under multiple user accounts and accordingly, actual Mobile DAU and Mobile MAU may be lower than reported due to the potential duplication of these individuals. Specifically, Mobile DAUs and Mobile MAUs incrementally include *Merge Magic!* and games acquired from Gram Games in May 2018 and Small Giant in January 2019.

(2) Excluded from Mobile MUUs and Mobile MUPs are players of our Facebook Instant Games, Snapchat Game, *Merge Magic!*, games acquired from Gram Games (beginning with and subsequent to our second quarter 2018 acquisition) and Small Giant (beginning with and subsequent to our first quarter 2019 acquisition). These games are excluded to avoid potential double counting as our systems are unable to distinguish whether a player of these games is also a player of the Company's other games during the applicable time periods.

(3) Amounts reported for 2018 have not been adjusted to reflect any subsequent updates to the reporting and estimation methodologies used to identify attempts to replicate legitimate player activity due to the potential variability in player behavior and other factors that can influence the various data sets. Assuming consistency in the player data profiles across periods, we estimate that the impact of new methodologies on the amounts previously reported during 2018 may reduce our average Mobile DAUs and average Mobile MAUs by approximately 5-10%. As a result, these audience metrics may not be comparable to prior periods.

Average Mobile DAUs decreased in the three months ended December 31, 2019 when compared to the same period of the period year as the contributions from *Empires & Puzzles*, *Merge Dragons!* and *Merge Magic!* were more than offset by declines in daily audience for older mobile games, *Zynga Poker*, games on mobile messenger platforms (e.g. Facebook Instant Games) and *Words With Friends*. Average mobile MAUs decreased primarily due to declines in monthly audience for *Zynga Poker*, games on mobile messenger platforms and older mobile games, partially offset by the contribution from *Empires & Puzzles*, *Merge Magic!* and *Merge Dragons!*. For *Zynga Poker* specifically, the decrease in average Mobile DAUs and average Mobile MAUs is partially attributed to the update made to the reporting and estimation methodologies to remove illegitimate player activity starting in the first quarter of 2019.

Average Mobile MUUs decreased in the three months ended December 31, 2019 compared to the same period of the prior year primarily due to a decline in average Mobile MAUs for *Zynga Poker*. Average Mobile MUPs increased primarily due to the contribution of mobile payers from our Casual Cards games, which were tracked in the Company's internal analytics systems for the first time beginning during the first quarter of 2019. Finally, Mobile ABPU increased due to an increase in mobile bookings.

Other Metrics

Although our management primarily focuses on the operating metrics above, we also monitor periodic trends in paying players of our games. The table below shows average monthly unique mobile payer bookings, average Mobile MUPs and monthly unique payer mobile bookings per Mobile MUP for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2019	2018	2019	2018
Average monthly unique mobile payer bookings (in millions)(1)	$ 48	$ 45	$ 48	$ 45
Average Mobile MUPs (in millions)(2)	1.2	1.0	1.2	1.0
Monthly unique mobile payer bookings per MUP(3)	$ 42	$ 46	$ 38	$ 46

(1) Average monthly unique mobile payer bookings represent the monthly average amount of mobile bookings for the applicable quarter that we received through payment methods for which we can quantify the number of unique payers and excludes mobile bookings from certain payment methods for which we cannot quantify the number of unique payers and bookings from advertising and other. Accordingly, mobile bookings from *Merge Magic!* and our games acquired from Gram Games in May 2018 and Small Giant in January 2019 are excluded.

(2) Excluded from Mobile MUPs are players of our Facebook Instant Games, Snapchat Game, *Merge Magic!*, games acquired from Gram Games (beginning with and subsequent to our second quarter 2018 acquisition) and Small Giant (beginning with and subsequent to our first quarter 2019 acquisition). These games are excluded to avoid potential double counting as our systems are unable to distinguish whether a player of these games is also a player of the Company's other games during the applicable time periods.

(3) Monthly unique mobile payer bookings per Mobile MUP is calculated by dividing average monthly unique mobile payer bookings by average Mobile MUPs.

When comparing the three months ended December 31, 2019 to the same period of the prior year, average monthly unique mobile payer bookings increased primarily due to the contribution from the Casual Cards games acquired in December 2017, which were tracked in the Company's internal analytics systems for the first time beginning during the first quarter of 2019, and contribution from *Game of Thrones Slots Casino*, which launched in the second quarter of 2019. Average monthly unique mobile payer bookings per Mobile MUP decreased due to a larger increase in Mobile MUP relative to the increase in average monthly unique mobile payer bookings.

Although we monitor our unique mobile payer metrics, we focus on monetization, including in-game advertising, of all of our players and not just those who are payers. Accordingly, we strive to enhance content and our players' game experience to increase our bookings and ABPU, which is a measure of overall monetization across all of our players through the sale of virtual items and advertising. Future growth in audience and engagement will depend on our ability to retain current players, attract new players, launch new games and expand into new markets and distribution platforms, and the success of our network. Our operating metrics may not correlate directly to quarterly revenue or bookings trends.

2019 Highlights

- ***Mobile Growth.*** We delivered our best mobile revenue and bookings performance in Zynga history, with mobile revenue of $1.2 billion and mobile bookings of $1.5 billion.
- ***Small Giant Games Acquisition.*** On January 2, 2019, we acquired 80% of Small Giant, the creators of *Empire & Puzzles* for total purchase price consideration of $717.9 million, which includes a mix of both cash and Zynga common stock. The Company will acquire the remaining 20% of Small Giant's shares ratably for potential additional cash consideration during each of the three years following the closing.
- ***Game Launches.*** During 2019, we launched *Game of Thrones Slots Casino* and *Merge Magic!* worldwide.

- ***Convertible Debt Offering.*** In June 2019, we issued $690.0 million aggregate principal amount of 0.25% Convertible Senior Notes due 2024, with an initial conversion rate equal to $8.31 per share; in connection with the offering of the Notes, the Company also entered into privately negotiated capped call transactions, which are expected to offset the potential economic dilution to our Class A common stock up to the initial cap price of $12.54 per share.
- ***Sale and Leaseback Agreement.*** On July 1, 2019, we sold our San Francisco headquarters (the "Building") for net proceeds of $580.5 million, resulting in a gain of $314.2 million (the "Building Sale"). Further, we entered into a lease agreement with the buyer to lease back approximately 185,000 square feet of the Building over an initial 12-year term, where we expect to continue operating our headquarters.

Small Giant Games Acquisition

On January 2, 2019, we acquired 80% of all issued and outstanding share capital (including all rights to acquire share capital) of Small Giant to expand our live service portfolio and new game pipeline, for total purchase consideration of $717.9 million. The remaining 20% will be acquired ratably for potential additional cash consideration payable annually based upon the achievement of specified profitability metrics by Small Giant during each of the three years following the closing. The equity rights and privileges of the remaining Small Giant shareholders lack the traditional rights and privileges associated with equity ownership and accordingly, the transaction is accounted for as if the Company acquired 100% of Small Giant on the acquisition date. The future payments associated with Zynga's acquisition of the remaining 20% represent a contingent consideration obligation.

The total purchase consideration included $336.0 million in cash, $30.0 million of cash that was deposited into an escrow account for a period of 18 months as security for general representations and warranties, 63,794,746 shares of our Class A common stock valued at $253.9 million at the acquisition date, and contingent consideration of $98.0 million at the acquisition date.

As discussed below under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Factors Affecting Our Performance" and "Critical Accounting Policies—Revenue Recognition", mobile online game revenue is recognized ratably over the estimated average playing period of payers while platform fees are expensed as incurred. Accordingly, bookings from Small Giant's *Empires & Puzzles* are initially deferred and recognized into revenue ratably over the estimated average playing period of payers – which contributed to the significant increase in deferred revenue in 2019.

Factors Affecting Our Performance

Platform agreements. Our games are primarily distributed, marketed and promoted through third parties, primarily Apple's App Store and the Google Play Store. Virtual items for our games are purchased through the payment processing systems of these platform providers. We generate a significant portion of our revenue, bookings and players through the Apple and Google platforms and expect to continue to do so for the foreseeable future as we launch more games for mobile devices. Apple and Google generally have the discretion to set the amounts of their platform fees and change their platforms' terms of service and other policies with respect to us or other developers in their sole discretion, and those changes may be unfavorable to us. These platform fees are recorded as costs of revenue as incurred, while we recognize mobile online game revenue over the average playing period of payers, which generally results in costs of revenue exceeding revenue early in the life of a new or acquired game.

Launch of new games and release of enhancements. Our revenue and bookings results have been driven by the launch of new games and the release of fresh content and new features in existing games. Our future success depends on our ability to innovate and provide fresh content to keep our existing players engaged, while also engaging new and lapsed players, and launch and monetize new titles on various platforms. Although the amount of revenue and bookings we generate from an enhancement to an existing game or launch of a new game or can vary significantly, we expect our revenue and bookings to be correlated to our success in releasing engaging content and features for our existing games and the success and timely launch of our new games. Further, revenue and bookings from many of our games may decline over time after reaching a peak of popularity and player usage. As a result of this decline in the revenue and bookings of our games, our business depends on our ability to consistently release fresh content for our existing games and launch new games that achieve significant popularity and have the potential to become franchise games.

Game monetization. We generate most of our revenue and bookings from the sale of virtual items in our games. The degree to which our players choose to pay for virtual items in our games is driven by our ability to create content and virtual items that enhance the game-play experience. Our revenue, bookings and overall financial performance are affected by the number of players and the effectiveness of our monetization of players through the sale of virtual items and advertising. The percentage of paying players may increase or decrease based on a number of factors, including growth in mobile games as a percentage of total game audience, localization of content in international markets and the availability of payment options.

Investment in game development. In order to develop new games and enhance the content and features in our existing games, we must continue to invest in a significant amount of engineering and creative resources. These expenditures generally occur in advance of the launch of a new game or the release of new content, and the resulting revenue may not equal or exceed our development costs, or the game or feature may be abandoned in its entirety. In addition, as discussed above, we recognize online game revenue over the average playing period of payers, which generally results in expenses exceeding revenue early in the life of a new or acquired game.

Player acquisition costs. We utilize advertising and other forms of player acquisition and retention to grow and retain our player audience. These expenditures generally relate to the promotion of new game launches and ongoing performance-based programs to drive new player acquisition and lapsed player reactivation. Over time, these acquisition and retention-related programs may become either less effective or costlier, negatively impacting our operating results. Additionally, as our player base becomes more heavily concentrated on mobile platforms, our ability to drive traffic to our games through unpaid channels may become diminished, and the overall cost of marketing our games may increase.

New market development. We are investing in new distribution channels, mobile platforms and international markets to expand our reach and grow our business. For example, we continue to expand our game publishing internationally, including the release of *Empires & Puzzles* in Asia during 2019. Our ability to be successful will depend on our ability to develop a successful mobile network, obtain new players and retain existing players on new and existing social networks and attract advertisers.

As we expand into new markets and distribution channels, we expect to incur headcount, marketing and other operating costs in advance of the associated revenue and bookings. Our financial performance will be impacted by our investment in these initiatives and their success.

Hiring and retaining key personnel. Our ability to compete depends in large part on our ability to hire and retain key talent and match that key talent to our current business needs. We are continually reviewing our hiring, learning and development and total rewards programs against best practices, with the goal of building and retaining world class teams.

Results of Operations

In this section, we discuss the results of our operations for the year ended December 31, 2019 compared to the year ended December 31, 2018. For a discussion of the year ended December 31, 2018 compared to the year ended December 31, 2017, please refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2018.

Revenue

	Year Ended December 31,			2019 to 2018 % Change	2018 to 2017 % Change
	2019	2018	2017(1)		
	(in thousands)				
Online game:					
Mobile	$ 981,178	$ 590,436	$ 564,629	66%	5%
Other(2)	66,059	80,441	100,964	(18)%	(20)%
Online game total	$ 1,047,237	$ 670,877	$ 665,593	56%	1%
Advertising and other:					
Mobile	266,556	225,085	174,867	18%	29%
Other(2)	7,866	11,246	20,930	(30)%	(46)%
Advertising and other total	$ 274,422	$ 236,331	$ 195,797	16%	21%
Total revenue	$ 1,321,659	$ 907,208	$ 861,390	46%	5%

(1) Amounts have not been retrospectively adjusted to reflect the adoption of ASC Topic 606.
(2) Includes web revenue for online game and web advertising revenue and other revenue for advertising and other

2019 Compared to 2018. Total revenue increased $414.5 million in 2019 as compared to 2018 while bookings increased $594.5 million in 2019 as compared to 2018.

Mobile online game revenue increased $390.7 million in 2019 compared to the prior year, while other online game revenue decreased $14.3 million over the same period, resulting in a net online game revenue increase of $376.4 million.

The increase in mobile online game revenue of $390.7 million was primarily attributable to increases in mobile revenue from *Empires & Puzzles*, *Merge Dragons!*, *Wonka's World of Candy* and *Game of Thrones Slots Casino* in the amounts of $182.5 million, $182.4 million, $16.2 million and $16.2 million, respectively, as these games were acquired or launched in 2019 or mid to late 2018. The increase was further supplemented by an increase in revenue from *Words With Friends* of $22.8 million due to the overall increase in bookings and higher amortization of prior period deferred revenue. These increases were offset by a decrease in mobile online game revenue from *Zynga Poker* and *Dawn of Titans*, in the amounts of $23.9 million and $10.6 million, respectively, due to the overall decline in bookings and audience metrics in these games. All other mobile games accounted for the remaining net increase of $5.1 million in mobile online game revenue. The decrease in other online game revenue of $14.3 million was primarily attributable to a decrease in revenue from *FarmVille 2* and *Zynga Poker* in the amounts of $9.9 million and $4.4 million, respectively, generally due to the overall decline in bookings and audience metrics in these games.

During 2019, there was no significant impact from discontinued games or from changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods. During 2018, we recognized $0.9 million of online game revenue and income from operations from games that have been discontinued as there is no further performance obligation, which did not impact our reported earnings per share. Further, there were no changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods during 2018.

In the year ended December 31, 2019, *Merge Dragons!*, *Empires & Puzzles* and *Zynga Poker* were our top online revenue-generating games and comprised 20%, 17% and 11%, respectively, of our online game revenue for the period. During 2018, *Zynga Poker*, *CSR Racing 2* and *Hit It Rich! Slots* were our top online revenue-generating games and comprised 21%, 14% and 10%, respectively, of our online game revenue for the period. No other game generated more than 10% of online game revenue during either of these periods.

Consumable virtual items accounted for 26% and 43% of online game revenue during 2019 and 2018, respectively. Durable virtual items accounted for 74% and 57% of online game revenue during 2019 and 2018, respectively. The estimated weighted average life of durable virtual items was nine months during both 2019 and 2018.

Mobile advertising revenue increased $41.5 million in 2019 compared to the prior year, while other advertising and other revenue decreased $3.4 million over the same period, resulting in a net advertising and other revenue increase of $38.1 million.

The increase in mobile advertising revenue of $41.5 million was primarily attributable to increases in engagement advertisements and offers, in-game display advertisements and other advertising revenue, primarily driven by *Words With Friends*, *Empires & Puzzles* and the games acquired from Gram Games. The decrease in other advertising and other revenue of $3.4 million was primarily due a decrease in web advertising revenue of $3.3 million and a decrease in licensing revenue of $0.1 million.

International revenue as a percentage of total revenue was 37% and 35%, respectively, during 2019 and 2018.

Cost of revenue

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Cost of revenue	$ 524,089	$ 304,658	$ 258,971	72%	18%

2019 Compared to 2018. Cost of revenue increased $219.4 million in 2019 as compared to 2018. The increase was primarily attributable to a $171.0 million increase in payment processing fees from bookings generated from mobile payment processors, $39.6 million in intangible asset amortization driven by our Small Giant and Gram Games acquisitions, $6.0 million in royalty expense and $3.0 million in hosting costs.

Research and development

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Research and development	$ 505,889	$ 270,323	$ 256,012	87%	6%

2019 Compared to 2018. Research and development expenses increased $235.6 million in 2019 as compared to 2018. The increase was primarily attributable to a $196.1 million increase in the fair value of the contingent consideration related to our Small Giant and Gram Games acquisitions, $15.8 million in headcount-related expenses primarily driven by our acquisitions, $7.2 million in overhead costs primarily related to rent for the Building, $5.0 million in expensed software, $4.9 million in stock-based compensation expense and $4.1 million in expenses related to outside services.

Sales and marketing

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Sales and marketing	$ 464,091	$ 226,524	$ 212,030	105%	7%

2019 Compared to 2018. Sales and marketing expenses increased $237.6 million in 2019 as compared to 2018. The increase was primarily attributable to an increase of $219.6 million in player acquisition costs, primarily related to *Empires & Puzzles*, *Merge Dragons!* and the 2019 launches of *Game of Thrones Slots Casino* and *Merge Magic!*. The increase was further supplemented by an increase of $6.8 million in headcount-related expense, $5.5 million in other marketing costs, $3.3 million in overhead costs primarily related to rent for the Building and $2.8 million in stock-based compensation expense.

General and administrative

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
General and administrative	$ 99,790	$ 98,941	$ 108,653	1%	(9)%

2019 Compared to 2018. General and administrative expenses increased $0.8 million in 2019 as compared to 2018. The increase was primarily attributable to an increase of $16.9 million in headcount-related expenses and $5.7 million in stock-based compensation expense, partially offset by a $10.7 million benefit from the net settlement of the derivative litigation recognized during 2019 and a decrease of $10.6 million in overhead costs.

Interest income

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Interest income	$ 14,039	$ 6,549	$ 5,309	114%	23%

2019 Compared to 2018. Interest income increased $7.5 million in 2019 as compared to 2018. The increase was primarily attributable to a higher average amount invested in short and long-term investments.

Interest expense

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Interest expense	$ 16,971	$ 255	$ 22	NM	NM

2019 Compared to 2018. Interest expense increased $16.7 million in 2019 as compared to 2018. The increase was primarily attributable to an increase of $14.1 million in interest related to the Notes and $2.6 million in interest related to the Company's revolving credit facility.

Other income (expense), net

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Other income (expense), net	$ 322,467	$ 13,407	$ 6,572	NM	104%

2019 Compared to 2018. Other income, net increased $309.1 million in 2019 as compared to 2018. The increase was primarily attributable to the $314.2 million gain recognized on the Building Sale, partially offset by the elimination of rental income as a result of the Building Sale.

Provision for (benefit from) income taxes

	Year Ended December 31,			2019 to 2018	2018 to 2017
	2019	2018	2017	% Change	% Change
	(in thousands)				
Provision for (benefit from) income taxes	$ 5,410	$ 11,006	$ 10,944	(51)%	1%

2019 Compared to 2018. The provision for income taxes decreased $6.0 million in 2019 as compared to 2018. The decrease was primarily attributable to the benefit generated from the post-acquisition statutory operating losses from Small Giant as well as changes in our jurisdictional mix of earnings, partially offset by a net increase in income tax as a result of the Building Sale.

Deferred Tax Asset Valuation Allowance

As of December 31, 2019, the measurement of our deferred tax assets was reduced by a $141.6 million valuation allowance. In evaluating the measurement of our deferred tax assets, we consider, amongst other factors, the Company's ability to generate future taxable income. The Company's recent trend in positive operating results provides additional positive evidence in evaluating the continued need for, and amount of, a valuation allowance and could result in the reversal of a significant amount of the valuation allowance in future periods. Specifically, if we conclude in future periods that there is sufficient positive evidence to release the valuation allowance associated with the carryforward of our federal net operating losses and federal research and development credits, we could recognize a significant income tax benefit in the period such conclusion is made.

Quarterly Results of Operations Data

The following tables set forth our unaudited quarterly consolidated statements of operations for each of the eight quarters ended December 31, 2019. We also present other financial and operations data and a reconciliation of revenue to bookings for the same periods. We have prepared the quarterly consolidated statements of operations data on a basis consistent with the audited consolidated financial statements included in this Annual Report on Form 10-K. In the opinion of management, the financial information reflects all adjustments, consisting only of normal recurring adjustments that we consider necessary for a fair presentation of this data. This information should be read in conjunction with the audited consolidated financial statements and related notes included in Item 8 – Financial Statements and Supplementary Data in this Annual Report on Form 10-K. The results of historical periods are not necessarily indicative of the results of operations for a full year or any future period.

	For the Three Months Ended							
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
	(in thousands, except per share data; unaudited)							
Consolidated Statements of Operations Data:								
Online game	$ 324,714	$ 281,651	$ 240,708	$ 200,164	$ 176,928	$ 167,716	$ 164,680	$ 161,553
Advertising and other	79,749	63,642	65,792	65,239	71,760	65,527	52,365	46,679
Total revenue	404,463	345,293	306,500	265,403	248,688	233,243	217,045	208,232
Costs and expenses:								
Cost of revenue	141,715	133,859	126,872	121,643	82,842	78,592	74,182	69,042
Research and development	104,428	137,487	102,094	161,880	70,983	71,124	67,391	60,825
Sales and marketing	127,715	120,836	113,529	102,011	67,178	55,613	52,878	50,855
General and administrative	26,273	26,774	25,239	21,504	26,964	23,144	25,580	23,253
Total costs and expenses	400,131	418,956	367,734	407,038	247,967	228,473	220,031	203,975
Income (loss) from operations	4,332	(73,663)	(61,234)	(141,635)	721	4,770	(2,986)	4,257
Net income (loss)	$ (3,500)	$ 230,083	$ (55,830)	$ (128,828)	$ 559	$ 10,200	$ (911)	$ 5,609
Net income (loss) per share - basic	$ (0.00)	$ 0.24	$ (0.06)	$ (0.14)	$ 0.00	$ 0.01	$ (0.00)	$ 0.01
Net income (loss) per share - diluted	$ (0.00)	$ 0.24	$ (0.06)	$ (0.14)	$ 0.00	$ 0.01	$ (0.00)	$ 0.01

	For the Three Months Ended							
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
	(in thousands; unaudited)							
Other Non-GAAP Financial Data:								
Bookings	$ 433,397	$ 394,806	$ 376,373	$ 359,485	$ 267,266	$ 248,875	$ 233,929	$ 219,472
Mobile Bookings	416,128	377,561	358,297	341,398	247,590	229,888	211,602	193,423

	For the Three Months Ended							
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
	(in thousands; unaudited)							
Reconciliation of Revenue to Bookings:								
Revenue	$ 404,463	$ 345,293	$ 306,500	$ 265,403	$ 248,688	$ 233,243	$ 217,045	$ 208,232
Change in deferred revenue	28,934	49,513	69,873	94,082	18,578	15,632	16,884	11,240
Bookings	$ 433,397	$ 394,806	$ 376,373	$ 359,485	$ 267,266	$ 248,875	$ 233,929	$ 219,472

	For the Three Months Ended							
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
	(in thousands; unaudited)							
Reconciliation of Mobile Revenue to Mobile Bookings:								
Mobile revenue	$ 386,621	$ 327,578	$ 287,442	$ 246,093	$ 227,709	$ 212,466	$ 192,744	$ 182,601
Change in mobile deferred revenue	29,507	49,983	70,855	95,305	19,881	17,422	18,858	10,822
Mobile bookings	$ 416,128	$ 377,561	$ 358,297	$ 341,398	$ 247,590	$ 229,888	$ 211,602	$ 193,423

Liquidity and Capital Resources

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Consolidated Statements of Cash Flows Data:			
Acquisition of property and equipment	$ (23,637)	$ (11,469)	$ (9,971)
Depreciation and amortization	79,445	42,057	30,294
Cash flows provided by (used in) operating activities	262,828	168,240	94,375
Cash flows provided by (used in) investing activities	(851,865)	18,981	(431,281)
Cash flows provided by (used in) financing activities	451,631	(8,308)	(123,078)

Our principal liquidity requirements are our lease commitments, licensing and marketing commitments, hosting commitments, capital expenditure needs, including strategic purchases and acquisitions, contingent consideration payments, interest payments and principal repayments of our Notes and any share repurchase activity we choose to effect. We expect to finance our operations through cash provided by operating activities and cash on hand. However, we cannot be certain that these sources will be sufficient to finance our operations, share repurchase activity or future growth through acquisitions, thus we may seek additional financing in the future.

As of December 31, 2019 and December 31, 2018, we had cash and cash equivalents and short-term investments of $1.4 billion and $0.6 billion, respectively, which consisted of cash, money market funds, corporate debt securities, U.S. government and government agency debt securities, mutual funds and certificates of deposit and time deposits. In 2019 and 2018, we made capital expenditures of $23.6 million and $11.5 million, respectively, which included hardware and software to support business operations, as well as leasehold improvements for our various office locations. We expect capital expenditures of approximately $10.0 million to $15.0 million in 2020.

Convertible Senior Notes and Capped Call Transactions

In June 2019, we issued $690.0 million aggregate principal amount of 0.25% Convertible Senior Notes due 2024, with an initial conversion rate of 120.3695 shares of our common stock (equal to an initial conversion rate of $8.31 per share), subject to adjustment in some events. The Notes are senior unsecured obligations and rank senior in right of payment to all of our indebtedness that is expressly subordinated in right of payment to the notes; equal in right of payment to all of our existing and future liabilities that are not so subordinated; effectively junior to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities of our current or future subsidiaries (including trade payables). The Indenture does not contain any financial covenants.

The Notes mature on June 1, 2024 unless earlier converted, redeemed or repurchased in accordance with their term prior to the maturity date. Interest is payable semiannually in arrears on June 1 and December 1 of each year, beginning on December 1, 2019. The Company may not redeem the Notes prior to June 5, 2022.

On or after June 5, 2022, the Company may redeem for cash all or any portion of the Notes, at its option, if the last reported sale price of the Common Stock has been at least 130% of the conversion price for at least 20 trading days during any 30 consecutive trading-day period ending on the immediately preceding the date when the Company provides a notice of redemption. The redemption price is equal to 100% of the principal amount of the Notes to be redeemed, plus any accrued and unpaid interest.

As of December 31, 2019, the conditions allowing holders of the Notes to convert have not been met and therefore the Notes are not yet convertible.

In connection with the offering of the Notes, the Company also entered into privately negotiated capped call transactions (the "Capped Calls"). The Capped Calls have an initial strike price of approximately $8.31 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The Capped Calls have an initial cap price of $12.54 per share, subject to certain adjustments. The capped call transactions cover, subject to anti-dilution adjustments, approximately 83.1 million shares of our Class A common stock and are expected to offset the potential economic dilution to our Class A common stock up to the initial cap price.

Credit Facility and Covenant Discussion

In December 2018, the Company entered into a credit agreement ("the Credit Agreement") with Bank of America, N.A. that provides for a three-year revolving credit facility ("the Credit Facility") in an initial aggregate principal amount of up to $200.0 million and is secured by a blanket lien on the Company's assets. In connection with the Building Sale and consistent with the terms of the Credit Facility, the borrowing capacity reduced to $150.0 million on July 1, 2019. The Company may borrow, repay and re-borrow funds under the Credit Agreement until the third anniversary of the closing date, at which time the Credit Facility will terminate, and all outstanding revolving loans, together with all accrued and unpaid interest, must be repaid. Finally, the Company may use the proceeds of future borrowings under the Credit Facility for general corporate purposes.

In June 2019, the Company amended the Credit Agreement to, amongst other things, (i) permit the Company to issue the Notes and enter into the Capped Calls, (ii) modify certain covenants, including the indebtedness covenant, lien covenant, investment covenant and restricted payments covenant, in connection with permitting the Notes and the transactions contemplated by the Notes, (iii) revise the maximum consolidated leverage ratio financial covenant, and (iv) remove the minimum liquidity financial covenant.

At the Company's option, revolving loans accrue interest at a per annum rate based on either (i) the base rate plus a margin ranging from 0.50% to 1.00%, determined based on the Company's consolidated leverage ratio for the four most recent fiscal quarters ("the Consolidated Leverage Ratio") or (ii) the LIBOR rate (for interest periods of one, two, three or six months) plus a margin ranging from 1.50% to 2.00%, determined based on the Company's Consolidated Leverage Ratio ("LIBOR Loan"). The base rate is defined as the highest of (i) the federal funds rate, plus 0.50%, (ii) Bank of America, N.A.'s prime rate and (iii) the LIBOR rate for a 1-month interest period plus 1.00%. The Company is also obligated to pay an ongoing commitment fee on undrawn amounts at a rate ranging from 0.25% to 0.35%, determined based on the Company's Consolidated Leverage Ratio.

As of December 31, 2019, we had no amounts outstanding under the Credit Facility.

The Credit Agreement also requires compliance with certain covenants, all of which the Company was in compliance with as of December 31, 2019. Specifically, we are subject to the following financial covenants (certain terms used and described below are as defined and described in the Credit Agreement):

- *Consolidated Interest Coverage Ratio*: The Company is obligated to maintain a consolidated interest coverage ratio of at least 4.00 to 1.00 as of the end of each fiscal quarter. The consolidated interest coverage ratio is measured by dividing (a) our consolidated EBITDA as defined in the Credit Agreement for the applicable measurement period by (b) the cash portion of our consolidated interest charges for the applicable measurement period.
- *Consolidated Leverage Ratio*: The Company is obligated to maintain a consolidated leverage ratio of an amount ranging from at least 4.50 to 1.00 to at least 3.50 to 1.00 as of the end of each fiscal quarter, in amounts decreasing through the term of the Credit Agreement. The consolidated leverage ratio is measured by dividing (a) our consolidated funded indebtedness as of the relevant fiscal quarter end by (b) our consolidated EBITDA as defined in the Credit Agreement for the applicable measurement period.

Building Sale and Leaseback

On July 1, 2019, the Company sold its San Francisco headquarters and related land, including all preexisting leases between the Company and third-party tenants of the Building, to a third-party buyer for net proceeds of approximately $580.5 million. In connection with the Building Sale, the Company de-recognized the related land, building and building improvements and all lessor related assets and liabilities, which resulted in a gain of $314.2 million within other income (expense), net in our consolidated statement of operations.

Further, the Company executed a leaseback of approximately 185,000 square feet of the Building over a 12-year term, where we expect to continue operating our headquarters. The agreement also provides the Company two separate options to extend the lease for eight years each and a third option to extend the lease for six years (for a total of an additional 22 years). The net initial base rent will be approximately $10.7 million for the first year of the lease, and may increase by an annual amount not to exceed 3.25% per year.

Share Repurchases

In April 2018, we authorized the 2018 Share Repurchase Program for up to $200.0 million of our outstanding Class A common stock and during 2018, we repurchased 7.1 million shares of our Class A common stock under the 2018 Share Repurchase Program at a weighted average price of $3.71 per share for a total of $26.2 million. During 2019, no share repurchases were made and as of December 31, 2019, we had $173.8 million remaining under the 2018 Share Repurchase Program. The 2018 Share Repurchase Program will expire in April 2022.

Operating Activities

2019 Compared to 2018. After our net income of $41.9 million is adjusted to exclude certain non-cash items, operating activities provided $262.8 million of cash, cash equivalents and restricted cash during 2019. Significant non-cash, cash equivalent or restricted cash items included stock-based compensation expense of $81.5 million and depreciation and amortization of $79.4 million. Depreciation and amortization increased by $37.4 million primarily due to an increase in intangible asset amortization from our Small Giant and Gram Games acquisitions. Stock-based compensation expense increased $13.2 million primarily due to our Gram Games acquisition. Further, the noncash expense associated with the increase in the Small Giant and Gram Games contingent consideration obligations drove a $201.6 million change in our operating liabilities during 2019.

The change in our operating assets and liabilities during 2019 – excluding the impact from the aforementioned increase in our contingent consideration obligations – resulted in a $170.1 million inflow of cash, cash equivalents and restricted cash, primarily due to a change in deferred revenue of $234.7 million. The cash, cash equivalents and restricted cash inflow from the change in deferred revenue was primarily due to the acquisition of Small Giant and additional strong bookings performance, primarily from Gram Games. This inflow was partially offset by outflows of $22.5 million from accounts receivable, net, primarily driven by the aforementioned growth in bookings and $15.1 million of prepaid and other assets, primarily driven by minimum guarantee payments on several strategic licenses. These outflows were further supplemented by a cash outflow of $15.6 million that relates to the portion of the total acquisition-related contingent consideration payment to the former owners of Gram Games included in operating activities.

Investing Activities

2019 Compared to 2018. Investing activities used $851.9 million of cash, cash equivalents and restricted cash during 2019. The primary outflows of cash, cash equivalents and restricted cash associated with investing activities were $1.1 billion of net investment purchases, $301.8 million for our acquisition of Small Giant, $35.0 million of escrow releases related to previous acquisitions and $23.6 million for capital expenditures, primarily related to hardware and software purchases to support business operations and leasehold improvements. The overall use of cash, cash equivalents and restricted cash was partially offset by $580.5 million of net proceeds from the Building Sale.

Financing Activities

2019 Compared to 2018. Financing activities provided $451.6 million of cash, cash equivalents and restricted cash during 2019. The primary inflow of cash, cash equivalents and restricted cash associated with financing activities was $672.2 million related to the issuance of our Notes. The inflow of cash, cash equivalents and restricted cash from financing activities was partially offset by the repayment of our $100.0 million LIBOR Loan under the Credit Facility, the $73.8 million premium paid related to our capped call transactions and $49.6 million related to the taxes paid on behalf of employees related to the net settlement of equity awards.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet arrangements during 2019, 2018 or 2017.

Contractual Obligations(1)

	Lease	Licensor and Marketing	Other	Total
		(in thousands)		
2020	$ 21,753	$ 20,250	$ 30,380	$ 72,383
2021	20,908	9,782	12,813	43,503
2022	17,315	—	1,111	18,426
2023	16,591	10,000	—	26,591
2024	14,196	—	—	14,196
Thereafter	90,955	—	—	90,955
Total	$ 181,718	$ 40,032	$ 44,304	$ 266,054

(1) The amounts represented in the table reflect our minimum cash obligations for the respective calendar years based on contractual terms, but not necessarily the periods in which they will be expensed in the Company's consolidated statement of operations.

Lease Commitments

Our lease commitments primarily consist of operating leases for our office facilities. We do not have any finance lease obligations and all of our property and equipment has been purchased with cash.

Licensor and Marketing Commitments

Licensor commitments include minimum guarantee royalty payments due to licensors for use of their brands, properties and other licensed content in our games, as well as marketing commitments for specified spend related to our marketing products.

Other Commitments

Other commitments primarily include costs for hosting of data systems and other services. Excluded from other commitments is our uncertain income tax position liability of $15.9 million, which includes interest and penalties, as the Company cannot make a reasonably reliable estimate of the period of cash settlement.

Contingent Consideration Obligations

Under the terms of the Small Giant and Gram Games acquisitions, contingent consideration may be payable based on the achievement of certain future performance targets during each annual period following the respective acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable. As of December 31, 2019, the estimated fair value of the contingent obligations for Small Giant and Gram Games were $242.0 million and $78.1 million, respectively, of which $180.0 million represents a current liability.

Guarantees

During the third quarter of 2018, we executed an assignment of the Oxford office lease associated with our Q4 2017 restructuring plan. The original lease term ends in November 2022. All terms under the original lease were assigned in full to the assignee, with the assignee becoming primarily liable to make rental payments directly to the landlord. Further, the assignee was required to provide the landlord a security deposit equal to twelve months rent to be used by the landlord in the event of the assignee's non-performance.

In connection with the assignment, the Company became secondarily liable in the event the assignee is unable to perform under the lease. Based on the current rent and related payments, the maximum exposure to the Company is estimated to be $1.7 million as of December 31, 2019. However, the lease is subject to periodic rate reviews which allow the landlord to make market adjustments to the rent and other related payments and accordingly, the maximum exposure may be greater than this amount. As of December 31, 2019, the fair value of this guarantee is not material.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts in our consolidated financial statements and related notes. Our significant accounting policies are described in Note 1 to our consolidated financial statements included in this Annual Report on form 10-K. We have identified below our critical accounting policies and estimates that we believe require the greatest amount of judgment. These estimates and judgments have a significant impact on our consolidated financial statements. Actual results could differ materially from those estimates. The accounting policies that reflect our more significant estimates and judgments and that we believe are the most critical to fully understand and evaluate our reported financial results include the following:

- Revenue recognition
- Income taxes
- Business combinations, including subsequent remeasurement of contingent consideration obligations
- Licenses and royalties

Revenue Recognition

The revenue recognition accounting policy described below relates to revenue transactions from January 1, 2018 and onward, which are accounted for in accordance with Accounting Standards Codification Topic 606 – Revenue from Contracts with Customers.

We derive substantially all of our revenue from the sale of virtual items and advertising associated with our online games.

Online Game. We operate our games as live services that allow players to play for free. Within these games, however, players can purchase virtual currency to obtain virtual goods or virtual goods directly (together, defined as "virtual items") to enhance their game-playing experience. Our identified performance obligation is to display the virtual items within the game over the estimated playing period of the paying player or until it is consumed in game play based upon the nature of the virtual item. Payment is required at time of purchase and the purchase price is a fixed amount.

Players can purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts, Google Play accounts and Facebook local currency payments. Payments from players for virtual items are non-refundable and relate to non-cancellable contracts that specify our obligations. Such payments are initially recorded to deferred revenue. As a result, in connection with new game launches, acquisitions of new games from third parties or during periods of increased bookings, the deferred revenue balance specific to such games will increase, sometimes significantly.

For revenue earned through mobile platforms, the transaction price is equal to the gross amount we request to be charged to our player because we are the principal in the transaction. The related platform and payment processing fees are recorded as cost of revenue in the period incurred.

For revenue earned on our web based games through Facebook, our players utilize Facebook's local currency-based payments program to purchase virtual items in our games. For all payment transactions on the Facebook platform, Facebook remits to us 70% of the price we request to be charged to the player for each transaction, which represents the transaction price. Despite being the principal in the transaction, we recognize revenue net of the amounts retained by Facebook for platform and payment processing fees because Facebook may choose to alter our requested price, for example by offering a discount or other incentives to players playing on their platform, and we do not receive information from Facebook indicating the amount of such discounts or incentives or the actual amount paid by our players. Accordingly, we are unable to determine the gross amount paid by our players on the Facebook platform.

The satisfaction of our performance obligation is dependent on the nature of the virtual item purchased and as a result, we categorize our virtual items as either consumable or durable.

- Consumable virtual items represent items that can be consumed by a specific player action. Common characteristics of consumable virtual items may include items that are no longer displayed on the player's game board after a short period of time, do not provide the player any continuing benefit following consumption, or often times enable a player to perform an in-game action immediately (e.g. chips in *Zynga Poker*). For the sale of consumable virtual items, we recognize revenue as the items are consumed (i.e., over time), which approximates one month.
- Durable virtual items represent items that are accessible to the player over an extended period of time (e.g. animals in *Farmville 2*). We recognize revenue from the sale of durable virtual items ratably over the estimated average playing period of payers for the applicable game (i.e., over time), which represents our best estimate of the average life of the durable virtual item.
- If we do not have the ability to differentiate between revenue attributable to consumable virtual items or durable virtual items for a specific game, we recognize revenue ratably over the estimated average playing period of payers for the applicable game.

Historically, we have had sufficient data to separately account for consumable and durable virtual items for substantially all of our web games. However, for our standalone mobile games, we do not have the requisite data to separately account for consumable and durable virtual items and therefore recognize mobile revenue ratably over the estimated average playing period of payers.

We expect that in future periods, there will be changes in the mix of consumable and durable virtual items offered and sold, reduced virtual item sales in some existing games, changes in estimates of the average playing period of payers and/or changes in our ability to make such estimates. When such changes occur, and in particular if more of our revenue in any period is derived from durable virtual items or the estimated average playing period of payers increases on average, the amount of revenue that we recognize in a current or future period may be reduced, perhaps significantly. Conversely, if the estimated average playing period of payers decreases on average, the amount of revenue that we recognize in a current or future period may be accelerated, perhaps significantly.

On a quarterly basis, we determine the estimated average playing period of payers by game beginning at the time of a payer's first purchase in the respective game and ending on a date when that paying player is deemed to be no longer playing. To determine when paying players are no longer playing a given game, we analyze monthly cohorts of payers who made their first in-game payment between six and 18 months prior to the beginning of each quarter and determine whether each payer within the cohort is an active or inactive player as of the date of our analysis. To determine which payers are inactive, we analyze the dates that each payer last logged into that game. We determine a payer to be inactive once they have reached a period of inactivity for which it is probable that they will not return to a specific game. For the payers deemed inactive as of our analysis date, we analyze the dates they last logged into that game to determine the rate at which inactive payers stopped playing. Based on these dates, we then project a date at which all payers for each monthly cohort are expected to cease playing our games. We then average the time periods from first purchase date and the date the last payer is expected to cease playing the game for each of the monthly cohorts to determine the total playing period of payers for that game. To determine the estimated average playing period of payers, we then divide this total period by two. The use of this "average" approach is supported by our observations that payers typically become inactive at a relatively consistent rate for our games. If future data indicates payers do not become inactive at a relatively consistent rate, we will modify our calculations accordingly. When a new game is launched and only a limited period of payer data is available for our analysis, then we also consider other factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other recently launched games with similar characteristics.

Advertising. We have contractual relationships with advertising networks, agencies, advertising brokers and directly with advertisers to display advertisements in our games. For all advertising arrangements, we are the principal and our performance obligation is to provide the inventory for advertisements to be displayed in our games. For contracts made directly with advertisers, we are also obligated to serve the advertisements in our games. However, for those direct advertising arrangements, providing the advertising inventory and serving the advertisement is considered a single performance obligation, as the advertiser cannot benefit from the advertising space without its advertisements being displayed.

The pricing and terms for all our advertising arrangements are governed by either a master contract or insertion order and generally stipulate payment terms as a specific number of days subsequent to the end of the month, generally ranging from 30 to 60 days. The transaction price in advertising arrangements is generally the product of the number of advertising units delivered (e.g., impressions, offers completed, videos viewed, etc.) and the contractually agreed upon price per advertising unit. Further, for advertising transactions not placed directly with the advertiser, the contractually agreed upon price per advertising unit is generally based on our revenue share stated in the contract. The number of advertising units delivered is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period.

For a limited number of advertising network arrangements, the transaction price is determined based on a volume-tiered pricing structure, whereby the price per advertising unit in a given month is determined by the number of impressions delivered in that month. However, the uncertainty concerning the number of impressions delivered is resolved at the end of each month, therefore, eliminating any uncertainty with respect to the price per advertising unit for each reporting period.

For in-game display advertisements, in-game offers, engagement advertisements and other advertisements, our performance obligation is satisfied over the life of contract (i.e., over time), with revenue being recognized as advertising units are delivered.

For in-game sponsorships with branded virtual items, revenue is initially recorded to deferred revenue and then recognized ratably over the estimated life of the branded virtual item, which approximates the estimated average playing period of payers, or over the term of the advertising arrangement, depending on the nature of the agreement.

Arrangements with Multiple Performance Obligations. For arrangements with multiple performance obligations, we allocate the transaction price to each performance obligation in an amount that depicts the amount of consideration to which we expect to be entitled in exchange for satisfying each performance obligation, which is based on the standalone selling price. The standalone selling price represents the observable price which we would sell the advertising placement separately in a similar circumstance, to a similar customer.

Taxes Collected from Customers. We present taxes collected from customers and remitted to governmental authorities on a net basis within our consolidated statement of operations.

The revenue recognition accounting policy described below relates to revenue transactions prior to January 1, 2018, which are accounted for in accordance with Accounting Standards Codification Topic 605 – Revenue Recognition.

We primarily derive revenue from the sale of virtual items associated with our online games and the sale of advertising.

Online Game. We operate our games as live services that allow players to play for free. Within these games, however, players can purchase virtual currency to obtain virtual goods or virtual goods directly (together, defined as "virtual items") to enhance their game-playing experience. Players can purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts, Google Play accounts and Facebook local currency payments. Advance payments from customers for virtual items that are non-refundable and relate to non-cancellable contracts that specify our obligations are recorded to deferred revenue. All other advance payments that do not meet these criteria are recorded as customer deposits.

For revenue earned through mobile platforms, we recognize online game revenue based on the gross amount paid by the player because we are the principal in the transaction. The related platform and payment processing fees are recorded as cost of revenue in the period incurred.

For revenue earned on our web based games through Facebook, our players utilize Facebook's local currency-based payments program to purchase virtual items in our games. For all payment transactions on the Facebook platform, Facebook remits to us 70% of the price we request to be charged to the player for each transaction. We recognize revenue net of the amounts retained by Facebook because Facebook may choose to alter our recommended price, for example by offering a discount or other incentives to players playing on their platform. Additionally, we do not receive information from Facebook indicating the amount of such discounts or incentives or the actual amount paid by our players. Accordingly, we are unable to determine the gross amount paid by our players on the Facebook platform.

We recognize revenue when all of the following conditions are satisfied: there is persuasive evidence of an arrangement; the service has been provided to the player; the collection of our fees is reasonably assured; and the amount of fees to be paid by the player is fixed or determinable. For purposes of determining when the service has been provided to the player, we have determined that an implied obligation exists to the paying player to continue displaying the purchased virtual items within the online game over their estimated life or until they are consumed. Accordingly, we categorize our virtual items as either consumable or durable. Consumable virtual items represent items that can be consumed by a specific player action. Common characteristics of consumable virtual items may include items that are no longer displayed on the player's game board after a short period of time, do not provide the player any continuing benefit following consumption, or often times enable a player to perform an in-game action immediately. For the sale of consumable virtual items, we recognize revenue as the items are consumed, which approximates one month. Durable virtual items represent items that are accessible to the player over an extended period of time. We recognize revenue from the sale of durable virtual items ratably over the estimated average playing period of payers for the applicable game, which represents our best estimate of the average life of the durable virtual item. If we do not have the ability to differentiate between revenue attributable to consumable virtual items from durable virtual items for a specific game, we recognize revenue ratably over the estimated average playing period of payers for the applicable game.

We have had sufficient data to separately account for consumable and durable virtual items for substantially all of our web games. However, for our standalone mobile games, we do not have the requisite data to separately account for consumable and durable virtual items and therefore recognize revenue ratably over the estimated average playing period of payers.

We expect that in future periods there will be changes in the mix of durable and consumable virtual items offered and sold, reduced virtual item sales in some existing games, changes in estimates of the average playing period of payers and/or changes in our ability to make such estimates. When such changes occur, and in particular if more of our revenue in any period is derived from durable virtual items or the estimated average playing period of payers increases on average, the amount of revenue that we recognize in a current or future period may be reduced, perhaps significantly. Conversely, if the estimated average playing period of payers decreases on average, the amount of revenue that we recognize in a current or future period may be accelerated, perhaps significantly.

On a quarterly basis, we determine the estimated average playing period of payers by game beginning at the time of a payer's first purchase in the respective game and ending on a date when that paying player is deemed to be no longer playing. To determine when paying players are no longer playing a given game, we analyze monthly cohorts of payers who made their first in-game payment between six and 18 months prior to the beginning of each quarter and determine whether each payer within the cohort is an active or inactive player as of the date of our analysis. To determine which payers are inactive, we analyze the dates that each payer last logged into that game. We determine a payer to be inactive once they have reached a period of inactivity for which it is probable that they will not return to a specific game. For the payers deemed inactive as of our analysis date, we analyze the dates they last logged into that game to determine the rate at which inactive payers stopped playing. Based on these dates, we then project a date at which all payers for each

monthly cohort are expected to cease playing our games. We then average the time periods from first purchase date and the date the last payer is expected to cease playing the game for each of the monthly cohorts to determine the total playing period of payers for that game. To determine the estimated average playing period of payers, we then divide this total period by two. The use of this "average" approach is supported by our observations that payers typically become inactive at a relatively consistent rate for our games. If future data indicates payers do not become inactive at a relatively consistent rate, we will modify our calculations accordingly. When a new game is launched and only a limited period of payer data is available for our analysis, then we also consider other factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other recently launched games with similar characteristics.

Advertising. We have contractual relationships with advertising networks, agencies, advertising brokers and directly with advertisers for advertisements within our games. We generally report our advertising revenue net of amounts retained by advertising networks, agencies, and brokers because we are not the principal for the advertisement transaction. However, certain advertisement placements that are directly between us and the end advertiser are recognized gross equal to the price paid to the Company by the end advertiser since we are the principal in the direct advertising arrangement.

We recognize advertising revenue for engagement advertisements and offers, mobile advertisements, branded virtual items and sponsorships and other advertisements as advertisements are delivered to customers as long as evidence of the arrangement exists, the price is fixed or determinable, and collectability as reasonably assured. Price is determined to be fixed or determinable when there is a fixed price included a master contract, insertion order, or a third party statement of advertising activity. For engagement advertisements and offers, mobile advertisements, and other advertisements, delivery occurs when the advertisement has been displayed or the offer has been completed by the customer, as evidenced by third party verification reports supporting the number of advertisements displayed or offers completed. Certain branded in-game sponsorships that involve virtual items are deferred and recognized over the estimated life of the branded virtual good or as consumed, similar to online game revenue. For these branded virtual items and sponsorships, we determine the delivery criteria has been met based on delivery reporting received from third parties.

Multiple-Element Arrangements. We allocate arrangement consideration in multiple-deliverable revenue arrangements at the inception of an arrangement to all deliverables based on the relative selling price method, generally based on our best estimate of selling price.

Taxes Collected from Customers. We present taxes collected from customers and remitted to governmental authorities on a net basis within our consolidated statement of operations.

Income Taxes

We account for income taxes using an asset and liability approach, which requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our financial statements or tax returns. The measurement of current and deferred tax assets and liabilities is based on provisions of enacted tax laws at the end of the reporting period; the effect of future changes in tax laws or rates are not anticipated. If necessary, the measurement of deferred tax assets is reduced by the amount of any tax benefits that are not expected to be realized based on all available positive and negative evidence including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies and results of recent operations. In evaluating the objective evidence that the results of recent operations provide, we generally consider the trailing three years of cumulative operating income (loss). The assumptions about future taxable income require the use of significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses.

With respect to the Global Intangible Low-Taxed Income ("GILTI") provisions of the 2017 Tax Act, the Company elected to account for the GILTI provisions as a component of tax expense in the period in which the entity is subject to the rules.

We account for uncertain tax positions by reporting a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. We recognize interest and penalties, if any, related to unrecognized tax benefits in the provision for income tax.

Business Combinations

In accounting for acquisitions through which a set of assets and activities are transferred to the Company, we perform an initial test to determine whether substantially all of the fair value of the gross assets transferred are concentrated in a single identifiable asset or a group of similar identifiable assets, such that the acquisition would not represent a business. If the initial test does not result in substantially all of the fair value concentrated in a single or group of similar assets, we then perform a second test to evaluate whether the assets and activities transferred include inputs and substantive processes that together, significantly contribute to the ability to create outputs, which would constitute a business. If the result of the second test indicates that the acquired assets and activities constitute a business, we account for the transaction as a business combination.

For our business combinations, we allocate the purchase consideration of the acquisition, which includes the estimated acquisition date fair value of contingent consideration (if applicable), to the tangible assets, liabilities and identifiable intangible assets acquired based on each of the estimated fair values at the acquisition date. The excess of the purchase consideration over the fair values is recorded as goodwill. Determining the fair value of such items requires judgment, including estimating future cash flows or the cost to recreate an acquired asset. If actual results are lower than initial estimates, we could be required to record impairment charges in the future. Acquired intangible assets with definite lives are amortized over their estimated useful lives generally on a straight-line basis, unless evidence indicates a more appropriate method. Intangible assets with indefinite lives are not amortized but rather tested for impairment annually, or more frequently if circumstances indicate an impairment may exist.

Acquisition-related expenses are expensed as incurred. During the one-year period beginning with the acquisition date, we may record certain purchase accounting adjustments related to the fair value of assets acquired and liabilities assumed against goodwill. After the final determination of the fair value of assets acquired or liabilities assumed, any subsequent adjustments are recorded to our consolidated statements of operations. The fair value of contingent consideration liabilities assumed from an acquisition are remeasured each reporting period after the acquisition date and the changes in the estimated fair value, if any, is recorded within operating expenses in our consolidated statement of operations each reporting period.

Licenses and Royalties

We obtain licenses from third parties for use of their brands, properties and other licensed content in our games (e.g., *Hit It Rich! Slots* or *Game of Thrones Slots Casino*). Our licensing agreements typically include minimum guarantee royalty payments, which are due over the term of the agreement and are recoupable against future royalty obligations that would otherwise become payable. These advance payments are capitalized as prepaid royalties when paid and amortized once the licensed product is launched in our game. Amortization is recorded as cost of revenue and is calculated as (i) the contractual royalty rate based on actual net product sales as defined in the licensing agreement or (ii) the straight-line method over the remaining estimated useful life of the licensed product, whichever is greater.

Each quarter, we evaluate the recoverability of our prepaid royalties as well as any contractual commitments not yet paid to determine amounts that we deem unlikely to be recovered through product sales. To evaluate the future recoverability of prepaid royalties and guarantees, we consider the terms of the agreement, game development plans, forecasted and actual financial performance of the game as well as other qualitative factors such as the success of similar games and similar genres published by the Company. To the extent that this evaluation indicates that the remaining prepaid and guaranteed royalty payments are not recoverable, the Company records an impairment charge in the period that impairment is indicated. Any impairment losses determined before the launch of a product are recorded as research and development, while any impairment losses determined post-launch are recorded as cost of revenue in our consolidated statement of operations.

Recent Accounting Pronouncements

For information with respect to recent accounting pronouncements and the impact of these pronouncements on our consolidated financial statements, see Note 1 – “Overview and Summary of Significant Accounting Policies” in the notes to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Interest Rate Fluctuation Risk

At December 31, 2019, our marketable debt securities consist of money market funds, corporate debt securities, U.S. government and government agency debt securities and foreign certificates of deposit and time deposits. The primary objective of our investment activities is to preserve principal, ensure liquidity and maximize income without significantly increasing risk.

Our marketable debt securities represent $1.1 billion of our total investments as of December 31, 2019 and are subject to market risk due to changes in prevailing interest rates that may cause their fair values to fluctuate in the future. Based on a sensitivity analysis, we have determined that a hypothetical 100 basis points increase in interest rates would have resulted in a decrease in the fair values of our investments of approximately $4.2 million as of December 31, 2019. Such losses would only be realized if we sold the investments prior to maturity.

With respect to our convertible debt, the Notes have fixed annual interest rate of 0.25%, and, therefore, we do not have economic interest rate exposure on the Notes. The fair value of the Notes changes when the market price of our stock fluctuates or interest rates change. However, we carry the Notes at face value less unamortized discount on our balance sheet and present the fair value for required disclosure purposes only.

With respect to any potential future borrowings under the Credit Facility, changes in interest rates will impact interest expense on any such borrowings.

Equity Investment Risk

We record our marketable equity securities not accounted for under the equity method at fair value based on readily determinable market values, which are subject to market price volatility, and represent $44.4 million of our investments as of December 31, 2019. A hypothetical adverse price change of 10%, which could be experienced in the near term, would decrease the fair value of our marketable equity securities by $4.4 million.

Foreign Currency Exchange Risk

We have foreign currency risks related to our revenue and operating expenses incurred outside the U.S. and denominated in currencies other than the functional currency of the entities in which they are recorded. Accordingly, we are subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the Euro, British Pound, Canadian Dollar, Russian Ruble, Australian Dollar, Japanese Yen, Turkish Lira and Korean Won. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. Although we have experienced and will continue to experience fluctuations in our net income (loss) as a result of transaction gains (losses), including remeasurement of certain cash balances, trade accounts receivable, trade accounts payable, current liabilities and intercompany balances that are denominated in currencies other than the functional currency of the entity in which they are recorded, we believe such a change would not have a material impact on our results of operations. As our international bookings grow, our risks associated with foreign currency rates may become greater, and we will continue to reassess our approach to managing the risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Zynga Inc.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

The supplementary financial information required by this Item 8 is included in Item 7 under the caption "Quarterly Results of Operations Data," which is incorporated herein by reference.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Zynga Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Zynga Inc. (the Company) as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15(a)2 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Auditing revenue for newly launched or acquired games

Description of the Matter

The Company's current deferred revenue is $433.0 million at December 31, 2019 and the Company recognized $1,047.2 million of revenue relating to online games during the year. A portion of the deferred online game revenue balance and revenue recognized was related to newly launched or acquired games. As described in Note 1 of the consolidated financial statements, for standalone mobile games, the Company recognizes mobile revenue ratably over the estimated average playing period of payers. When a new game is launched, or acquired, and only a limited period of payer data is available for the analysis of average playing periods of payers, the Company considers a number of subjective and objective factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other active games with similar characteristics. Determining the estimated average playing period of payers requires management judgement in estimating how long paying players benefit from their purchases over the game playing experience as well as determining which games are similar for comparison purposes.

Auditing the initial estimated average playing period of payers for newly launched or acquired online games was especially challenging as there was a limited period of game-specific paying player data available, and relevant,
comparable data from external sources was not readily available. Management determined the initial estimated average playing period of payers based on subjective and objective assumptions about each newly launched or acquired game's paying player characteristics, and their similarity or dissimilarity to the Company's other games.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls specifically related to the Company's process to determine the initial estimated average playing period of payers.

To test the initial estimated average playing period of payers, our audit procedures included, among others, evaluating the significant assumptions used by management to determine the initial estimate. We evaluated the relevance of management's selection of comparable games as well as management's comparison of the paying player period for the newly launched or acquired game to comparable games.

Initial accounting of contingent consideration and acquired intangibles

Description of the Matter

On January 2, 2019, the Company acquired Small Giant (SGG) for total purchase consideration of $717.9 million, as disclosed in Note 7 to the consolidated financial statements. Of the total purchase consideration, $98.0 million related to the initial value of contingent consideration as of the acquisition date, $187.0 million of the total purchase price was allocated to the fair value of identified intangible assets and $531.2 million was allocated to goodwill. Under the terms of the SGG acquisition, contingent consideration may be payable based on the achievement of certain future performance targets during each annual period following the acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable.

Auditing the fair values of contingent consideration and acquired intangible assets was complex due to the significant estimation uncertainty in determining the fair value of contingent consideration and identified intangible assets. The significant assumptions used by management to estimate the acquisition date fair values of the contingent consideration and the intangible assets included discount rates, as well as the amount and timing of cash flow projections. Each of these assumptions were highly subjective and involved significant judgment as they were based on estimates of future financial performance of developed and undeveloped games and could be affected by domestic and international consumer preferences, third party competition and technological innovation, among other factors.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over management's review of forecasts and the assessment of the discount rate.

To test the fair value of the Company's acquisition date contingent consideration and acquired intangible assets, we read the purchase agreement and we identified and tested the significant assumptions used in the valuation models including assessing the historical accuracy of management's forecasts of its own performance, its historical accuracy in forecasting for other acquisitions, and evaluating the reasonableness of resulting forecasts for SGG compared with the historical performance of SGG, Zynga and guideline companies within the same industry. We involved our valuation specialists to assess the adequacy and relevance of the inputs and information used, the nature and basis for valuation adjustments and calculations, the appropriateness of the valuation methods and techniques used, and accuracy and appropriateness of calculations in the valuation models. Additionally, our valuation specialists performed corroborative calculations of the contingent consideration and acquired intangible asset values which we compared to management's estimates.

Accounting for the issuance of convertible debt

Description of the Matter

In June 2019 the Company issued $690.0 million in convertible debt as described in Note 10 of the consolidated financial statements. The accounting for the transaction was complex, as it required assessment as to whether features, other than the conversion feature, required bifurcation and separate valuation. Additionally, the transaction was complex as it required valuation of the conversion feature in the debt instrument, which involved estimation of the fair value of the debt instrument absent of any conversion feature, and evaluation of the appropriate classification of the conversion feature in the financial statements.

Auditing management's evaluation of the transaction was especially challenging due to the complexity in assessing the components of the convertible notes for separability and assessing valuation of the debt instrument absent of any conversion feature. While there was available data from which to derive key inputs to the fair value of stand-alone debt, such as historical volatility, risk free rates, and a synthetic credit rating, the fair value is sensitive to changes in the key inputs and therefore required judgement in evaluating their reasonableness.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's initial convertible debt accounting process, including its controls over estimating the fair value of the stand-alone debt.

To test the initial accounting for the convertible debt, our audit procedures included, among others, inspection of the debt agreement and testing management's application of the relevant accounting guidance. We also involved our valuation specialists to evaluate the Company's determination of the fair value of the debt absent of any conversion feature, including testing the appropriateness of the methodology and underlying assumptions used and evaluating the sensitivity of management's key estimates. The significant assumptions used by management to estimate the fair value of the debt on a stand-alone basis included expected volatility (function of historical and implied volatilities), the Company's synthetic credit rating, and an implied yield.

Accounting for the sale and leaseback of the Company's headquarters

Description of the Matter

In July 2019 the Company sold its headquarters, which comprised the building and related land ("property") to a third-party for net proceeds of approximately $580.5 million. Upon closing of the sale, the Company entered into a leaseback agreement with the buyer for a portion of the building as described in Note 6 of the consolidated financial statements.

Auditing management's evaluation of the transaction was especially challenging due to the complexity in assessing the accounting for and the valuation of the sale and leaseback components included in the transaction. In particular, auditing the measurements of the fair value of the components was complex due to the highly judgmental nature of the assumptions, which included market rental rates, market rent growth rates, and the discount rate used in valuing the property.

How We Addressed the Matter in our Audit

We tested controls that address the risks of material misstatement relating to valuation and measurement of the property, including controls over management's review of the significant assumptions and the data inputs used.

To test the accounting for the sale of the Company's headquarters, our procedures included, among others, inspection of the sale and leaseback agreement and evaluation of the methodology and significant assumptions used to value the property, with the assistance of our valuation specialists. We also tested the completeness and accuracy of the underlying data used by management.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2009.

San Jose, CA
February 28, 2020

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Zynga Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Zynga Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion Zynga Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15(a)2 and our report dated February 28, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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/ Ernst & Young LLP

San Jose, CA
February 28, 2020

Zynga Inc.

Consolidated Balance Sheets
(In thousands, except par value)

	December 31, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 423,323	$ 544,990
Short-term investments	938,173	36,232
Accounts receivable, net of allowance of $0 at December 31, 2019 and December 31, 2018	140,078	91,630
Restricted cash	30,006	35,006
Prepaid expenses	27,533	26,914
Other current assets	16,557	12,505
Total current assets	1,575,670	747,277
Long-term investments	175,300	—
Goodwill	1,460,933	934,187
Intangible assets, net	233,005	118,600
Property and equipment, net	25,826	266,557
Right-of-use assets	136,972	—
Prepaid expenses	37,815	30,774
Other non-current assets	15,093	49,308
Total assets	$ 3,660,614	$ 2,146,703
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 27,799	$ 26,811
Income tax payable	649	4,895
Deferred revenue	432,962	191,299
Debt	—	100,000
Operating lease liabilities	15,753	—
Other current liabilities	314,805	156,829
Total current liabilities	791,968	479,834
Convertible senior notes, net	570,456	—
Deferred revenue	567	1,586
Deferred tax liabilities, net	33,479	16,087
Non-current operating lease liabilities	130,301	—
Other non-current liabilities	158,413	52,586
Total liabilities	1,685,184	550,093
Stockholders' equity:		
Common stock (Class A), $0.00000625 par value, and additional paid-in capital - authorized shares: 2,020,517; shares outstanding: 950,042 shares as of December 31, 2019 and 861,111 as of December 31, 2018	3,898,695	3,504,713
Accumulated other comprehensive income (loss)	(125,935)	(118,439)
Accumulated deficit	(1,797,330)	(1,789,664)
Total stockholders' equity	1,975,430	1,596,610
Total liabilities and stockholders' equity	$ 3,660,614	$ 2,146,703

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Operations
(In thousands, except per share data)

	Year Ended December 31,		
	2019	**2018**	**2017**
Revenue:			
Online game	$ 1,047,237	$ 670,877	$ 665,593
Advertising and other	274,422	236,331	195,797
Total revenue	1,321,659	907,208	861,390
Costs and expenses:			
Cost of revenue	524,089	304,658	258,971
Research and development	505,889	270,323	256,012
Sales and marketing	464,091	226,524	212,030
General and administrative	99,790	98,941	108,653
Total costs and expenses	1,593,859	900,446	835,666
Income (loss) from operations	(272,200)	6,762	25,724
Interest income	14,039	6,549	5,309
Interest expense	(16,971)	(255)	(22)
Other income (expense), net	322,467	13,407	6,572
Income (loss) before income taxes	47,335	26,463	37,583
Provision for (benefit from) income taxes	5,410	11,006	10,944
Net income (loss)	$ 41,925	$ 15,457	$ 26,639
Net income (loss) per share attributable to common stockholders:			
Basic	$ 0.04	$ 0.02	$ 0.03
Diluted	$ 0.04	$ 0.02	$ 0.03
Weighted average common shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	938,709	862,460	869,067
Diluted	974,020	889,584	897,165

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Comprehensive Income (Loss)
(In thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Net income (loss)	$ 41,925	$ 15,457	$ 26,639
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	(7,773)	(25,122)	35,352
Net change in unrealized gains (losses) on available-for-sale marketable debt securities, net of tax	277	180	(155)
Other comprehensive income (loss), net of tax:	(7,496)	(24,942)	35,197
Comprehensive income (loss):	$ 34,429	$ (9,485)	$ 61,836

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Stockholders' Equity
(In thousands)

	Class A, B and C Common Stock		Additional Paid-In Capital	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount					
Balances at December 31, 2016	886,850	$ 6	$ 3,349,708	$ —	$ (128,694)	$ (1,640,356)	$ 1,580,664
Exercise of stock options and ESPP	5,365	—	8,769	—	—	—	8,769
Vesting of ZSUs, net of tax withholdings	14,768	—	(427)	(21,292)	—	—	(21,719)
Stock-based compensation expense	—	—	64,515	—	—	—	64,515
Repurchases of common stock	(36,323)	(1)	—	(101,035)	—	—	(101,036)
Retirements of treasury stock	—	—	—	122,327	—	(122,327)	—
Adoption of ASU 2016-09	—	—	3,935	—	—	44,276	48,211
Net income (loss)	—	—	—	—	—	26,639	26,639
Other comprehensive income (loss)	—	—	—	—	35,197	—	35,197
Balances at December 31, 2017	870,660	$ 5	$ 3,426,500	$ —	$ (93,497)	$ (1,691,768)	$ 1,641,240
Exercise of stock options and ESPP	5,090	—	9,969	—	—	—	9,969
Vesting of ZSUs, net of tax withholdings	10,618	—	—	(25,807)	—	—	(25,807)
Stock-based compensation expense	—	—	68,239	—	—	—	68,239
Repurchases of common stock	(25,257)	—	—	(91,570)	—	—	(91,570)
Retirements of treasury stock	—	—	—	117,377	—	(117,377)	—
Adoption of ASU 2014-09	—	—	—	—	—	4,024	4,024
Net income (loss)	—	—	—	—	—	15,457	15,457
Other comprehensive income (loss)	—	—	—	—	(24,942)	—	(24,942)
Balances at December 31, 2018	861,111	$ 5	$ 3,504,708	$ —	$ (118,439)	$ (1,789,664)	$ 1,596,610
Exercise of stock options and ESPP	12,007	—	17,488	—	—	—	17,488
Vesting of ZSUs, net of tax withholdings	13,129	—	—	(49,591)	—	—	(49,591)
Acquisition-related common stock issuance	63,795	1	253,903	—	—	—	253,904
Stock-based compensation expense	—	—	81,482	—	—	—	81,482
Retirements of treasury stock	—	—	—	49,591	—	(49,591)	—
Equity component of convertible senior notes	—	—	114,938	—	—	—	114,938
Purchase of capped calls related to issuance of convertible senior notes	—	—	(73,830)	—	—	—	(73,830)
Net income (loss)	—	—	—	—	—	41,925	41,925
Other comprehensive income (loss)	—	—	—	—	(7,496)	—	(7,496)
Balances at December 31, 2019	950,042	$ 6	$ 3,898,689	$ —	$ (125,935)	$ (1,797,330)	$ 1,975,430

See accompanying notes to consolidated financial statements.

Zynga Inc.

Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2019	**2018**	**2017 (As Adjusted)(1)**
Cash flows from operating activities:			
Net income (loss)	$ 41,925	$ 15,457	$ 26,639
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	79,445	42,057	30,294
Stock-based compensation expense	81,482	68,239	64,515
(Gain) loss from sale of building, investments and other assets and foreign currency, net	(314,513)	263	(238)
(Accretion) amortization on marketable debt securities, net	(4,883)	(2,730)	(636)
Noncash lease expense	11,167	—	—
Noncash interest expense	13,241	—	—
Noncash consideration received	—	(1,494)	—
Change in deferred income taxes and other	(16,762)	(3,366)	3,780
Changes in operating assets and liabilities:			
Accounts receivable, net	(22,546)	22,625	(26,417)
Prepaid expenses and other assets	(15,057)	(18,417)	(8,124)
Accounts payable	(1,005)	(810)	(3,666)
Deferred revenue	234,681	62,338	(7,581)
Income tax payable	(10,176)	(2,116)	4,788
Operating lease and other liabilities	185,829	(13,806)	11,021
Net cash provided by (used in) operating activities	262,828	168,240	94,375
Cash flows from investing activities:			
Purchases of investments	(1,568,216)	(333,832)	(348,594)
Maturities of investments	451,500	519,800	40,000
Sales of investments	44,890	89,168	—
Acquisition of property and equipment	(23,637)	(11,469)	(9,971)
Proceeds from sale of building and other property and equipment, net	580,679	33	273
Business acquisitions, net of cash acquired and restricted cash held in escrow	(301,815)	(222,440)	(101,201)
Release of restricted cash escrow from business acquisitions	(35,000)	(22,800)	(3,625)
Other investing activities, net	(266)	521	(8,163)
Net cash provided by (used in) investing activities	(851,865)	18,981	(431,281)
Cash flows from financing activities:			
Proceeds from issuance of debt, net	672,152	99,100	—
Purchase of capped calls	(73,830)	—	—
Repayment of debt	(101,364)	—	—
Taxes paid related to net share settlement of stockholders' equity awards	(49,591)	(25,807)	(21,719)
Repurchases of common stock	—	(91,570)	(105,013)
Proceeds from issuance of common stock	17,488	9,969	8,769
Acquisition-related contingent consideration payment	(12,900)	—	(5,115)
Other financing activities, net	(324)	—	—
Net cash provided by (used in) financing activities	451,631	(8,308)	(123,078)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	10,739	(4,594)	3,945
Net change in cash, cash equivalents and restricted cash	(126,667)	174,319	(456,039)
Cash, cash equivalents and restricted cash, beginning of period	579,996	405,677	861,716
Cash, cash equivalents and restricted cash, end of period	$ 453,329	$ 579,996	$ 405,677
Supplemental cash flow information:			
Income taxes paid	$ 22,350	$ 16,111	$ 4,024
Interest paid	2,823	—	—
Noncash investing activities:			
Acquisition-related common stock issuance	253,903	—	—
Software acquired as noncash consideration	—	1,494	—

(1) Amounts retrospectively adjusted to reflect the adoption of ASU 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash"

See accompanying notes to consolidated financial statements.

1. Overview and Summary of Significant Accounting Policies

Organization and Description of Business

Zynga Inc. ("Zynga," "we" or the "Company") is a leading provider of social game services. We develop, market and operate social games as live services played on mobile platforms, such as Apple's iOS and Google's Android, and social networking platforms, such as Facebook and Snapchat. Generally, all of our games are free to play, and we generate substantially all of our revenue through the sale of in-game virtual items and advertising services. Our operations are headquartered in San Francisco, California, and we have several operating locations in the U.S. as well as various international office locations in North America, Asia and Europe.

We completed our initial public offering in December 2011 and our Class A common stock is listed on the NASDAQ Global Select Market under the symbol "ZNGA."

Basis of Presentation and Consolidation

The accompanying consolidated financial statements are presented in accordance with United States generally accepted accounting principles ("U.S. GAAP"). The consolidated financial statements include the operations of the Company and its owned subsidiaries. All intercompany balances and transactions have been eliminated in the consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and notes thereto. Significant estimates and assumptions reflected in the financial statements include, but are not limited to, the estimated average playing period of payers that we use for revenue recognition, useful lives of property and equipment and intangible assets, accrued liabilities, income taxes, the fair value of assets and liabilities acquired through business combinations, contingent consideration obligations, the discount rate used in discounting our operating lease liabilities, the interest rate used in calculating the present value of the initial liability component of our convertible senior notes, stock-based compensation expense and evaluation of recoverability of goodwill, intangible assets and long-lived assets. Actual results could differ materially from those estimates.

Segments

We have one operating and reportable segment, which is at the consolidated company level. The Chief Operating Decision Maker ("CODM"), our Chief Executive Officer, manages our operations on a consolidated basis for purposes of assessing performance and allocating resources.

Revenue Recognition

The revenue recognition accounting policy described below relates to revenue transactions from January 1, 2018 and onward, which are accounted for in accordance with Accounting Standards Codification Topic 606 – Revenue from Contracts with Customers

We derive substantially all of our revenue from the sale of virtual items and advertising associated with our online games.

Online Game. We operate our games as live services that allow players to play for free. Within these games, however, players can purchase virtual currency to obtain virtual goods or virtual goods directly (together, defined as "virtual items") to enhance their game-playing experience. Our identified performance obligation is to display the virtual items within the game over the estimated playing period of the paying player or until it is consumed in game play based upon the nature of the virtual item. Payment is required at time of purchase and the purchase price is a fixed amount.

Players can purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts, Google Play accounts and Facebook local currency payments. Payments from players for virtual items are non-refundable and relate to non-cancellable contracts that specify our obligations. Such payments are initially recorded to deferred revenue.

For revenue earned through mobile platforms, the transaction price is equal to the gross amount we request to be charged to our player because we are the principal in the transaction. The related platform and payment processing fees are recorded as cost of revenue in the period incurred.

For revenue earned on our web based games through Facebook, our players utilize Facebook's local currency-based payments program to purchase virtual items in our games. For all payment transactions on the Facebook platform, Facebook remits to us 70% of the price we request to be charged to the player for each transaction, which represents the transaction price. Despite being the principal in the transaction, we recognize revenue net of the amounts retained by Facebook for platform and payment processing fees because Facebook may choose to alter our requested price, for example by offering a discount or other incentives to players playing on their platform, and we do not receive information from Facebook indicating the amount of such discounts or incentives or the actual amount paid by our players. Accordingly, we are unable to determine the gross amount paid by our players on the Facebook platform.

The satisfaction of our performance obligation is dependent on the nature of the virtual item purchased and as a result, we categorize our virtual items as either consumable or durable.

- Consumable virtual items represent items that can be consumed by a specific player action. Common characteristics of consumable virtual items may include items that are no longer displayed on the player's game board after a short period of time, do not provide the player any continuing benefit following consumption, or often times enable a player to perform an in-game action immediately (e.g. chips in *Zynga Poker*). For the sale of consumable virtual items, we recognize revenue as the items are consumed (i.e., over time), which approximates one month.
- Durable virtual items represent items that are accessible to the player over an extended period of time (e.g. animals in *Farmville 2*). We recognize revenue from the sale of durable virtual items ratably over the estimated average playing period of payers for the applicable game (i.e., over time), which represents our best estimate of the average life of the durable virtual item.
- If we do not have the ability to differentiate between revenue attributable to consumable virtual items or durable virtual items for a specific game, we recognize revenue ratably over the estimated average playing period of payers for the applicable game.

Historically, we have had sufficient data to separately account for consumable and durable virtual items for substantially all of our web games. However, for our standalone mobile games, we do not have the requisite data to separately account for consumable and durable virtual items and therefore recognize mobile revenue ratably over the estimated average playing period of payers.

We expect that in future periods, there will be changes in the mix of consumable and durable virtual items offered and sold, reduced virtual item sales in some existing games, changes in estimates of the average playing period of payers and/or changes in our ability to make such estimates. When such changes occur, and in particular if more of our revenue in any period is derived from durable virtual items or the estimated average playing period of payers increases on average, the amount of revenue that we recognize in a current or future period may be reduced, perhaps significantly. Conversely, if the estimated average playing period of payers decreases on average, the amount of revenue that we recognize in a current or future period may be accelerated, perhaps significantly.

On a quarterly basis, we determine the estimated average playing period of payers by game beginning at the time of a payer's first purchase in the respective game and ending on a date when that paying player is deemed to be no longer playing. To determine when paying players are no longer playing a given game, we analyze monthly cohorts of payers who made their first in-game payment between six and 18 months prior to the beginning of each quarter and determine whether each payer within the cohort is an active or inactive player as of the date of our analysis. To determine which payers are inactive, we analyze the dates that each payer last logged into that game. We determine a payer to be inactive once they have reached a period of inactivity for which it is probable that they will not return to a specific game. For the payers deemed inactive as of our analysis date, we analyze the dates they last logged into that game to determine the rate at which inactive payers stopped playing. Based on these dates, we then project a date at which all payers for each monthly cohort are expected to cease playing our games. We then average the time periods from first purchase date and the date the last payer is expected to cease playing the game for each of the monthly cohorts to determine the total playing period of payers for that game. To determine the estimated average playing period of payers, we then divide this total period by two. The use of this "average" approach is supported by our observations that payers typically become inactive at a relatively consistent rate for our games. If future data indicates payers do not become inactive at a relatively consistent rate, we will modify our calculations accordingly. When a new game is launched and only a limited period of payer data is available for our analysis, then we also consider other factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other recently launched games with similar characteristics.

Advertising. We have contractual relationships with advertising networks, agencies, advertising brokers and directly with advertisers to display advertisements in our games. For all advertising arrangements, we are the principal and our performance obligation is to provide the inventory for advertisements to be displayed in our games. For contracts made directly with advertisers, we are also obligated to serve the advertisements in our games. However, for those direct advertising arrangements, providing the advertising inventory and serving the advertisement is considered a single performance obligation, as the advertiser cannot benefit from the advertising space without its advertisements being displayed.

The pricing and terms for all our advertising arrangements are governed by either a master contract or insertion order and generally stipulate payment terms as a specific number of days subsequent to the end of the month, generally ranging from 30 to 60 days. The transaction price in advertising arrangements is generally the product of the number of advertising units delivered (e.g., impressions, offers completed, videos viewed, etc.) and the contractually agreed upon price per advertising unit. Further, for advertising transactions not placed directly with the advertiser, the contractually agreed upon price per advertising unit is generally based on our revenue share stated in the contract. The number of advertising units delivered is determined at the end of each month, which resolves any uncertainty in the transaction price during the reporting period.

For a limited number of advertising network arrangements, the transaction price is determined based on a volume-tiered pricing structure, whereby the price per advertising unit in a given month is determined by the number of impressions delivered in that month. However, the uncertainty concerning the number of impressions delivered is resolved at the end of each month, therefore, eliminating any uncertainty with respect to the price per advertising unit for each reporting period.

For in-game display advertisements, in-game offers, engagement advertisements and other advertisements, our performance obligation is satisfied over the life of contract (i.e., over time), with revenue being recognized as advertising units are delivered.

For in-game sponsorships with branded virtual items, revenue is initially recorded to deferred revenue and then recognized ratably over the estimated life of the branded virtual item, which approximates the estimated average playing period of payers, or over the term of the advertising arrangement, depending on the nature of the agreement.

Arrangements with Multiple Performance Obligations. For arrangements with multiple performance obligations, we allocate the transaction price to each performance obligation in an amount that depicts the amount of consideration to which we expect to be entitled in exchange for satisfying each performance obligation, which is based on the standalone selling price. The standalone selling price represents the observable price which we would sell the advertising placement separately in a similar circumstance, to a similar customer.

Taxes Collected from Customers. We present taxes collected from customers and remitted to governmental authorities on a net basis within our consolidated statement of operations.

The revenue recognition accounting policy described below relates to revenue transactions prior to January 1, 2018, which are accounted for in accordance with Accounting Standards Codification Topic 605 – Revenue Recognition.

We primarily derive revenue from the sale of virtual items associated with our online games and the sale of advertising.

Online Game. We operate our games as live services that allow players to play for free. Within these games, however, players can purchase virtual currency to obtain virtual goods or virtual goods directly (together, defined as “virtual items”) to enhance their game-playing experience. Players can purchase our virtual items through various widely accepted payment methods offered in the games, including Apple iTunes accounts, Google Play accounts and Facebook local currency payments. Advance payments from customers for virtual items that are non-refundable and relate to non-cancellable contracts that specify our obligations are recorded to deferred revenue. All other advance payments that do not meet these criteria are recorded as customer deposits.

For revenue earned through mobile platforms, we recognize online game revenue based on the gross amount paid by the player because we are the principal in the transaction. The related platform and payment processing fees are recorded as cost of revenue in the period incurred.

For revenue earned on our web based games through Facebook, our players utilize Facebook’s local currency-based payments program to purchase virtual items in our games. For all payment transactions on the Facebook platform, Facebook remits to us 70% of the price we request to be charged to the player for each transaction. We recognize revenue net of the amounts retained by Facebook because Facebook may choose to alter our recommended price, for example by offering a discount or other incentives to players playing on their platform. Additionally, we do not receive information from Facebook indicating the amount of such discounts or incentives or the actual amount paid by our players. Accordingly, we are unable to determine the gross amount paid by our players on the Facebook platform.

We recognize revenue when all of the following conditions are satisfied: there is persuasive evidence of an arrangement; the service has been provided to the player; the collection of our fees is reasonably assured; and the amount of fees to be paid by the player is fixed or determinable. For purposes of determining when the service has been provided to the player, we have determined that an implied obligation exists to the paying player to continue displaying the purchased virtual items within the online game over their estimated life or until they are consumed. Accordingly, we categorize our virtual items as either consumable or durable. Consumable virtual items represent items that can be consumed by a specific player action. Common characteristics of consumable virtual items may include items that are no longer displayed on the player’s game board after a short period of time, do not provide the

player any continuing benefit following consumption, or often times enable a player to perform an in-game action immediately. For the sale of consumable virtual items, we recognize revenue as the items are consumed, which approximates one month. Durable virtual items represent items that are accessible to the player over an extended period of time. We recognize revenue from the sale of durable virtual items ratably over the estimated average playing period of payers for the applicable game, which represents our best estimate of the average life of the durable virtual item. If we do not have the ability to differentiate between revenue attributable to consumable virtual items from durable virtual items for a specific game, we recognize revenue ratably over the estimated average playing period of payers for the applicable game.

We have had sufficient data to separately account for consumable and durable virtual items for substantially all of our web games. However, for our standalone mobile games, we do not have the requisite data to separately account for consumable and durable virtual items and therefore recognize revenue ratably over the estimated average playing period of payers.

We expect that in future periods there will be changes in the mix of durable and consumable virtual items offered and sold, reduced virtual item sales in some existing games, changes in estimates of the average playing period of payers and/or changes in our ability to make such estimates. When such changes occur, and in particular if more of our revenue in any period is derived from durable virtual items or the estimated average playing period of payers increases on average, the amount of revenue that we recognize in a current or future period may be reduced, perhaps significantly. Conversely, if the estimated average playing period of payers decreases on average, the amount of revenue that we recognize in a current or future period may be accelerated, perhaps significantly.

On a quarterly basis, we determine the estimated average playing period of payers by game beginning at the time of a payer's first purchase in the respective game and ending on a date when that paying player is deemed to be no longer playing. To determine when paying players are no longer playing a given game, we analyze monthly cohorts of payers who made their first in-game payment between six and 18 months prior to the beginning of each quarter and determine whether each payer within the cohort is an active or inactive player as of the date of our analysis. To determine which payers are inactive, we analyze the dates that each payer last logged into that game. We determine a payer to be inactive once they have reached a period of inactivity for which it is probable that they will not return to a specific game. For the payers deemed inactive as of our analysis date, we analyze the dates they last logged into that game to determine the rate at which inactive payers stopped playing. Based on these dates, we then project a date at which all payers for each monthly cohort are expected to cease playing our games. We then average the time periods from first purchase date and the date the last payer is expected to cease playing the game for each of the monthly cohorts to determine the total playing period of payers for that game. To determine the estimated average playing period of payers, we then divide this total period by two. The use of this "average" approach is supported by our observations that payers typically become inactive at a relatively consistent rate for our games. If future data indicates payers do not become inactive at a relatively consistent rate, we will modify our calculations accordingly. When a new game is launched and only a limited period of payer data is available for our analysis, then we also consider other factors to determine the estimated average playing period of payers, such as the estimated average playing period of payers for other recently launched games with similar characteristics.

Advertising. We have contractual relationships with advertising networks, agencies, advertising brokers and directly with advertisers for advertisements within our games. We generally report our advertising revenue net of amounts retained by advertising networks, agencies, and brokers because we are not the principal for the advertisement transaction. However, certain advertisement placements that are directly between us and the end advertiser are recognized gross equal to the price paid to the Company by the end advertiser since we are the principal in the direct advertising arrangement.

We recognize advertising revenue for engagement advertisements and offers, mobile advertisements, branded virtual items and sponsorships and other advertisements as advertisements are delivered to customers as long as evidence of the arrangement exists, the price is fixed or determinable, and collectability as reasonably assured. Price is determined to be fixed or determinable when there is a fixed price included a master contract, insertion order, or a third party statement of advertising activity. For engagement advertisements and offers, mobile advertisements, and other advertisements, delivery occurs when the advertisement has been displayed or the offer has been completed by the customer, as evidenced by third party verification reports supporting the number of advertisements displayed or offers completed. Certain branded in-game sponsorships that involve virtual items are deferred and recognized over the estimated life of the branded virtual good or as consumed, similar to online game revenue. For these branded virtual items and sponsorships, we determine the delivery criteria has been met based on delivery reporting received from third parties.

Multiple-Element Arrangements. We allocate arrangement consideration in multiple-deliverable revenue arrangements at the inception of an arrangement to all deliverables based on the relative selling price method, generally based on our best estimate of selling price.

Taxes Collected from Customers. We present taxes collected from customers and remitted to governmental authorities on a net basis within our consolidated statement of operations.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand, money market funds, corporate debt and certificates of deposit and time deposits with maturities of 90 days or less from the date of purchase.

Restricted Cash

Restricted cash consists of funds held in escrow in accordance with the terms of our business acquisition agreements.

Short and Long-Term Investments

Short and long-term debt investments consist of money market funds, corporate debt securities, U.S. government and government agency debt securities and certificates of deposit and time deposits. Based on our intentions regarding our investments, all debt investments are classified as available-for-sale and are reported at fair value with unrealized gains and losses recorded as a separate component of other comprehensive income, net of income taxes.

We assess whether an other-than-temporary loss on our debt investments has occurred due to declines in fair value or other market conditions, which requires judgment regarding the amount and timing of recovery. Specifically, when evaluating our debt investments for other-than-temporary impairment, we review factors such as the length of time and extent to which fair value has been below its amortized cost basis, the financial condition of the issuer, our ability and intent to hold the security to maturity and whether it is more likely than not that we will be required to sell the investment before recovery of the amortized cost basis. When we determine that a decline in fair value is other-than-temporary, the amortized cost basis of the individual security is written down to the fair value with the amount of the write-down recorded as a realized loss within other income (expense), net. The new cost basis will not be adjusted for subsequent recoveries in fair value. No such impairments of our investments have been recorded in any of the periods presented.

Short-term equity investments consist of privately held mutual funds. All equity investments are reported at fair value, with unrealized gains and losses recorded within other income (expense), net in our consolidated statement of operations.

Realized gains and losses for all investments are determined using the specific-identification method and are reflected as a component of other income (expense), net in the consolidated statements of operations.

Fair Value of Financial Instruments

Our financial assets consist of cash, cash equivalents, short-term and long-term investments and accounts receivable, net. Cash equivalents, short-term investments and long-term investments are reported at fair value while accounts receivable, net are stated at the net realizable amount, which approximates fair value.

Our financial liabilities consist of accounts payable and accrued liabilities, contingent consideration obligations and debt. Accounts payable and accrued liabilities are stated at the invoiced or estimated payout amount, respectively, and approximate fair value. Contingent consideration obligations, which are the result of business acquisitions, are reported at fair value. Our debt is recorded at the net carrying amount, which does not approximate fair value. However, the fair value of the debt is disclosed at each reporting period – refer to Note 10 – “Debt” for further discussion.

We estimate fair value as the exit price, which represents the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between knowledgeable and willing market participants.

The valuation techniques used to measure the fair value of the Company’s financial instruments were valued based on quoted market prices, model driven valuations using significant inputs derived from or corroborated by observable market data or other directly and indirectly inputs observable in the marketplace. We use a three-tier value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

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

Level 2 — Includes inputs, other than Level 1 inputs, that are directly or indirectly observable in the marketplace.

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

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the original invoiced amount less an allowance for any potential uncollectible amounts. In evaluating our ability to collect outstanding receivable balances, we consider many factors, including the age of the balance, the

customer’s payment history and current creditworthiness and current economic conditions that may affect our customers’ ability to pay. Bad debts are written off after all collection efforts have been exhausted. We do not require collateral from our customers.

Property and Equipment, Net

Property and equipment are recorded at historical cost less accumulated depreciation. Depreciation is recorded using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful lives of the improvements or the lease term.

The estimated useful lives of our property and equipment are as follows:

Property and Equipment	Useful Life
Computer equipment	3 years
Software	2 to 3 years
Furniture and fixtures	2 years
Leasehold improvements	Shorter of useful life (generally up to 7 years) or remaining lease term

Business Combinations

In accounting for acquisitions through which a set of assets and activities are transferred to the Company, we perform an initial test to determine whether substantially all of the fair value of the gross assets transferred are concentrated in a single identifiable asset or a group of similar identifiable assets, such that the acquisition would not represent a business. If the initial test does not result in substantially all of the fair value concentrated in a single or group of similar assets, we then perform a second test to evaluate whether the assets and activities transferred include inputs and substantive processes that together, significantly contribute to the ability to create outputs, which would constitute a business. If the result of the second test indicates that the acquired assets and activities constitute a business, we account for the transaction as a business combination.

For our business combinations, we allocate the purchase consideration of the acquisition, which includes the estimated acquisition date fair value of contingent consideration (if applicable), to the tangible assets, liabilities and identifiable intangible assets acquired based on each of the estimated fair values at the acquisition date. The excess of the purchase consideration over the fair values is recorded as goodwill. Determining the fair value of such items requires judgment, including estimating future cash flows or the cost to recreate an acquired asset. If actual results are lower than initial estimates, we could be required to record impairment charges in the future. Acquired intangible assets with definite lives are amortized over their estimated useful lives generally on a straight-line basis, unless evidence indicates a more appropriate method. Intangible assets with indefinite lives are not amortized but rather tested for impairment annually, or more frequently if circumstances indicate an impairment may exist.

Acquisition-related expenses are expensed as incurred. During the one-year period beginning with the acquisition date, we may record certain purchase accounting adjustments related to the fair value of assets acquired and liabilities assumed against goodwill. After the final determination of the fair value of assets acquired or liabilities assumed, any subsequent adjustments are recorded to our consolidated statements of operations. The fair value of contingent consideration liabilities assumed from an acquisition are remeasured each reporting period after the acquisition date and the changes in the estimated fair value, if any, is recorded within operating expenses in our consolidated statement of operations each reporting period.

Software Development Costs

We review internal use software development costs associated with new games or updates to existing games on a quarterly basis to determine if the costs qualify for capitalization. Our studio teams follow an agile development process, whereas the preliminary project stage remains ongoing until just prior to worldwide launch, at which time final feature selection occurs. As such, the development costs are expensed as incurred to research and development in our consolidated statement of operations. We did not capitalize any software development costs in 2019, 2018 or 2017.

Goodwill and Indefinite-Lived Intangible Assets

Goodwill and indefinite-lived intangible assets are evaluated annually for impairment, or more frequently if circumstances exist that indicate that impairment may exist. When conducting our annual goodwill impairment assessment, we perform a quantitative evaluation by comparing the estimated fair value of our single reporting unit, determined using the Company’s market capitalization as of the testing date, to its carrying value. For our annual goodwill impairment analysis performed in the fourth quarter of 2019, the

result indicated that the estimated fair value of the reporting unit exceeded its carrying value. Accordingly, we concluded goodwill was not impaired.

At least annually, we test recoverability of indefinite-lived intangible assets using a qualitative approach that considers whether it is more likely than not that the fair value of the intangible asset exceeds its carrying value. If qualitative factors indicate that it is more likely than not that the indefinite-lived intangible asset is impaired, a quantitative analysis is performed and the amount of any impairment loss recorded, if any, is measured as the difference between the carrying value and the fair value of the impaired intangible asset. We concluded that indefinite-lived intangible assets were not impaired as of December 31, 2019.

Definite-Lived Intangible Assets

Definite-lived intangible assets consist of assets acquired from a prior business combination and are carried at historical cost less accumulated amortization. Amortization is generally recorded on a straight-lined basis, unless another method is deemed more appropriate, over the estimated useful lives of the assets, generally 12 to 84 months.

Impairment of Long-Lived Assets

Long-lived assets, including definite-lived intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable. If such circumstances are present, we assess the recoverability of the long-lived assets by comparing the carrying value to the undiscounted future cash flows associated with the related assets. If the future undiscounted cash flows are less than the carrying value of the assets, the assets are considered impaired and an expense, equal to the amount required to reduce the carrying value of the assets to the estimated fair value, is recorded as an impairment of intangible assets in the consolidated statements of operations. Significant judgment is required to estimate the amount and timing of future cash flows and the relative risk of achieving those cash flows.

Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy and our internal forecasts. For example, if our future operating results do not meet current forecasts, we may be required to record future impairment charges for acquired intangible assets. Impairment charges could materially decrease our future net income and result in lower asset values on our balance sheet. There were no impairment charges recorded during 2019, 2018 or 2017.

Licenses and Royalties

We obtain licenses from third parties for use of their brands, properties and other licensed content in our games (e.g., *Hit It Rich! Slots* or *Game of Thrones Slots Casino*). Our licensing agreements typically include minimum guarantee royalty payments, which are due over the term of the agreement and are recoupable against future royalty obligations that would otherwise become payable. These advance payments are capitalized as prepaid royalties when paid and amortized once the licensed product is launched in our game. Amortization is recorded as cost of revenue and is calculated as (i) the contractual royalty rate based on actual net product sales as defined in the licensing agreement or (ii) the straight-line method over the remaining estimated useful life of the licensed product, whichever is greater.

Each quarter, we evaluate the recoverability of our prepaid royalties as well as any contractual commitments not yet paid to determine amounts that we deem unlikely to be recovered through product sales. To evaluate the future recoverability of prepaid royalties and guarantees, we consider the terms of the agreement, game development plans, forecasted and actual financial performance of the game as well as other qualitative factors, such as the success of similar games and similar genres published by the Company. To the extent that this evaluation indicates that the remaining prepaid and guaranteed royalty payments are not recoverable, the Company records an impairment charge in the period that impairment is indicated. Any impairment losses determined before the launch of a product are recorded as research and development, while any impairment losses determined post-launch are recorded as cost of revenue in our consolidated statement of operations.

Stock-Based Compensation Expense

We recognize stock-based compensation expense for restricted stock units ("ZSUs") based on grant date fair value on a straight-line basis over the requisite service period for the entire award. For certain performance based ZSUs, we recognize the stock-based compensation expense based upon the grant date fair value on an accelerated attribution basis over the requisite service period of the award.

We estimate the fair value of stock options using the Black-Scholes option-pricing model. This model requires the use of the following assumptions: expected volatility of our Class A common stock, which is based on our own calculated historical rate; expected life of the option award, which we elected to calculate using the simplified method; expected dividend yield, which is 0%, as we have not paid and do not have any plans to pay dividends on our common stock; and the risk-free interest rate, which is based on the U.S. Treasury rate in effect at the time of grant with maturities commensurate to the stock option award's expected life. If any of

the assumptions used in the Black-Scholes model changes significantly, stock-based compensation expense for future awards may differ materially compared to awards granted previously. We record stock-based compensation expense for stock options based on the grant date fair value on a straight-line basis over the requisite service period of the award.

Stock-based compensation expense is recorded net of forfeitures as they are occur.

Income Taxes

We account for income taxes using an asset and liability approach, which requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our financial statements or tax returns. The measurement of current and deferred tax assets and liabilities is based on provisions of enacted tax laws at the end of the reporting period; the effect of future changes in tax laws or rates are not anticipated. If necessary, the measurement of deferred tax assets is reduced by the amount of any tax benefits that are not expected to be realized based on all available positive and negative evidence including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies and results of recent operations. In evaluating the objective evidence that the results of recent operations provide, we generally consider the trailing three years of cumulative operating income (loss). The assumptions about future taxable income require the use of significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses.

With respect to the Global Intangible Low-Taxed Income ("GILTI") provisions of the 2017 Tax Cuts and Jobs Act ("2017 Tax Act"), the Company elected to account for the GILTI provisions as a component of tax expense in the period in which the entity is subject to the rules. Refer to Note 9 — "Income Taxes" below for further discussion on the impact of the 2017 Tax Act.

We account for uncertain tax positions by reporting a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. We recognize interest and penalties, if any, related to unrecognized tax benefits in the provision for income tax.

Foreign Currency Transactions

Generally, the functional currency of our international subsidiaries is the local currency that the international subsidiary operates in or the U.S. dollar. We translate the financial statements of these subsidiaries to U.S. dollars using the prevailing balance sheet date exchange rate for assets and liabilities and average exchange rates during the period for revenue and costs and expenses. We record translation gains and losses in accumulated other comprehensive income (loss) as a component of stockholders' equity. We reflect foreign exchange transaction gains and losses resulting from the conversion of the transaction currency to the functional currency, which includes gains and losses from the remeasurement of assets and liabilities, as a component of other income (expense), net.

Concentration of Credit Risk and Significant Customers

Financial instruments, which potentially expose us to concentrations of credit risk, consist primarily of cash, cash equivalents, short and long-term investments and accounts receivable. Substantially all of our cash and cash equivalents and short and long-term investments are maintained with five financial institutions with high credit standings. We perform periodic evaluations of the relative credit standing of these institutions.

Accounts receivable are unsecured and represent amounts due to us based on contractual obligations where an executed contract or click-through agreement exists. In cases where we are aware of circumstances that may impair a specific customer's ability to meet its financial obligations, we record a specific allowance as a reduction to the accounts receivable balance to reduce the receivable to its net realizable value.

Google, Apple and Facebook are significant distribution, marketing, promotion and payment platforms for our games. A significant portion of our 2019, 2018 and 2017 revenue was generated from players who accessed our games through these platforms or were served advertisements in our games on behalf of advertisers. As of December 31, 2019 and December 31, 2018, 34% and 26% of our accounts receivable, net, respectively, were amounts owed to us by Apple, 33% and 27% of our accounts receivable, net, respectively, were amounts owed to us by Google and 13% and 15% of our accounts receivable, net, respectively, were amounts owed to us by Facebook.

Advertising Expense

Costs for marketing and advertising our games are primarily expensed as incurred and are included in sales and marketing expense in our consolidated statement of operations. Such costs, primarily consisting of player acquisition costs, totaled $377.2 million, $157.7 million and $147.2 million for 2019, 2018 and 2017 respectively.

Recent Accounting Pronouncements

Issued But Not Yet Adopted

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-13, *"Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments"*, which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost and replaces the existing incurred loss impairment model with an expected loss methodology, which will result in earlier recognition of credit losses. The ASU requires a cumulative-effect adjustment to retained earnings transition approach and is effective for interim and annual reporting periods beginning after December 15, 2019. The Company will adopt the standard on January 1, 2020 and the adoption will not have a material impact to our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, *"Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract"*, which aligns the accounting for implementation costs incurred with a cloud computing arrangement accounted for as a service arrangement with the guidance in *ASC Topic 350-40, Internal-Use Software* to determine which implementation costs should be capitalized. The ASU permits either a prospective or retrospective transition approach and is effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted. The Company will adopt the standard on January 1, 2020 using the prospective method. The adoption will not have a material impact to our consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, *"Simplifying the Accounting for Income Taxes"*, which simplifies certain aspects of the accounting for income taxes by removing certain exceptions to the general principles and also clarifying and amending existing guidance to improve consistent application. The ASU requires a retrospective, modified retrospective or prospective transition approach for individual aspects of the ASU and is effective for interim and annual periods beginning after December 15, 2020, with early adoption permitted. The Company is currently assessing this standards' impact on the consolidated financial statements.

Issued And Adopted

In February 2016, the FASB issued ASU 2016-02, *"Leases (Topic 842)"* ("ASC Topic 842") which requires a lessee to recognize assets and liabilities on the balance sheet for leases with lease terms greater than 12 months. For lessors, accounting for leases remains substantially the same as in prior periods. We adopted ASC Topic 842 on January 1, 2019 using the alternative transition approach provided in ASU 2018-11, *"Leases (Topic 842) – Targeted Improvements"*, which allows initial application of the new standard by recognizing a cumulative-effect adjustment on the adoption date.

Adoption Impact – Lessee Accounting

The adoption of ASC Topic 842 on January 1, 2019 resulted in the recognition of right-of-use assets of $9.1 million, which includes the elimination of our remaining prepaid rent and deferred rent balances, current operating lease liabilities of $7.6 million and non-current operating lease liabilities of $12.4 million. The adoption of ASC Topic 842 did not impact our consolidated statement of operations or consolidated statement of cash flows.

ASC Topic 842 also amends the provisions of ASC Topic 420 – *Exit or Disposal Obligations* to eliminate the concept of cease-use lease liabilities and instead, requires companies to evaluate leases for impairment in accordance *ASC 360 – Property, Plant, and Equipment*. Accordingly, upon adoption, we derecognized our $10.9 million restructuring cease-use liability related to our Q2 2015 restructuring plan and simultaneously recognized an operating lease liability for an equal amount, with no associated right-of-use asset.

As part of the adoption, the new standard allows a number of practical expedients and exemptions. At transition, we elected the following:

- The package of practical expedients, which allows us to carryforward our historical lease classification, assessment of whether a contract is or contains a lease and initial direct costs for any leases that exist prior to adoption of the new standard;
- The practical expedient to not separate non-lease components from the related lease components; and
- The exemption to not apply the balance sheet recognition requirements for leases with a lease term of 12 months or less and instead, expense those costs on a straight-line basis over the lease term, or in the period in which the obligation is incurred, if such costs are variable.

Adoption Impact – Lessor Accounting

There was no impact to our financial statements as a result of adopting ASC Topic 842. ASU 2018-11, *"Leases (Topic 842) – Targeted Improvements"* also provides lessors with a practical expedient to not separate nonlease components from the associated lease component, similar to the expedient provided for lessees. However, the lessor practical expedient is limited to circumstances in which the nonlease component or components otherwise would be accounted for under the new revenue guidance and both (i) the timing and pattern of transfer are the same for the nonlease component(s) and associated lease component and (ii) the lease component, if accounted for separately, would be classified as an operating lease. We have elected this practical expedient.

Refer to Note 6 – "Leases" for further details on our lease arrangements as a lessee and lessor.

2. Revenue from Contracts with Customers

Disaggregation of Revenue

The following table presents our revenue disaggregated by platform (in thousands):

	Year Ended December 31,		
	2019	2018	2017(1)
Online game:			
Mobile	$ 981,178	$ 590,436	$ 564,629
Other(2)	66,059	80,441	100,964
Online game total	$ 1,047,237	$ 670,877	$ 665,593
Advertising and other:			
Mobile	266,556	225,085	174,867
Other(2)	7,866	11,246	20,930
Advertising and other total	$ 274,422	$ 236,331	$ 195,797
Total revenue	$ 1,321,659	$ 907,208	$ 861,390

(1) Amounts have not been retrospectively adjusted to reflect the adoption of ASC Topic 606.
(2) Includes web revenue for online game and web advertising revenue and other revenue for advertising and other.

The following table presents our revenue disaggregated based on the geographic location of our payers (in thousands):

	Year Ended December 31,		
	2019	2018	2017(1)
United States	$ 826,556	$ 593,973	$ 567,315
All other countries(2)	495,103	313,235	294,075
Total revenue	$ 1,321,659	$ 907,208	$ 861,390

(1) Amounts have not been retrospectively adjusted to reflect the adoption of ASC Topic 606.
(2) No foreign country exceeded 10% of our total revenue for any periods presented.

Consumable virtual items accounted for 26%, 43% and 44% of online game revenue in the years ended December 31, 2019, 2018 and 2017, respectively. Durable virtual items accounted for 74%, 57% and 56% of online game revenue in the years ended December 31, 2019, 2018 and 2017, respectively. The estimated weighted average life of durable virtual items was nine months for both the years ended December 31, 2019 and 2018, and eight months during the year ended December 31, 2017.

During the year ended December 31, 2019, there was no significant impact from discontinued games or from changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods.

During the year ended December 31, 2018, we recognized $0.9 million of online game revenue and income from operations from games that have been discontinued as there is no further performance obligation, which did not impact our reported earnings per share. Further, there were no changes in our estimated average playing period of payers that required adjusting the recognition period of deferred revenue generated in prior periods for the year ended December 31, 2018.

During the year ended December 31, 2017, we recognized $1.3 million of online game revenue and income from operations from changes in our estimated average playing period of payers, which was the result of adjusting the remaining recognition period of deferred revenue generated in prior periods at the time of a change in estimate. This change in estimate did not impact our reported earnings per share. Further, there were no discontinued games that required adjusting the recognition period of deferred revenue generated in prior periods for the year ended December 31, 2017.

Contract Balances

We receive payments from our customers based on the payment terms established in our contracts. Payments for online game revenue are required at time of purchase, are non-refundable and relate to non-cancellable contracts that specify our performance obligations. Such payments are initially recorded to deferred revenue and are recognized into revenue as we satisfy our performance obligations. Further, payments made by our players are collected by payment processors and remitted to us generally within 30 days. Our right to the payments collected on our behalf are unconditional and therefore recorded as accounts receivable, net of the associated payment processing fees.

Payments for advertising arrangements are due based on the contractually stated payment terms. The contract terms generally require payment within 30 to 60 days subsequent to the end of the month. Our right to payment from the customer is unconditional and therefore recorded as accounts receivable.

During the year ended December 31, 2019, we recognized all of the revenue that was included in the $191.3 million current deferred revenue balance as of December 31, 2018.

The increase in accounts receivable, net during the year ended December 31, 2019 was primarily driven by sales on account during the period exceeding cash collections of current period and previously due amounts, which includes contribution from Small Giant Games Oy ("Small Giant"). The increase in deferred revenue during the year ended December 31, 2019 was primarily driven by the sale of virtual items during the period exceeding revenue recognized from the satisfaction of our performance obligations, which includes the contribution from Small Giant.

Unsatisfied Performance Obligations

Substantially all of our unsatisfied performance obligations relate to contracts with an original expected length of one year or less.

3. Marketable Debt Securities

The following tables summarize the amortized cost, gross unrealized gains and losses and fair value of our short-term and long-term debt securities as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
Short-term debt securities:				
Corporate debt securities	$ 814,817	$ 148	$ (19)	$ 814,946
U.S. government and government agency debt securities	25,000	—	—	25,000
Foreign certificates of deposit and time deposits	53,786	—	—	53,786
Total	$ 893,603	$ 148	$ (19)	$ 893,732
Long-term debt securities:				
Corporate debt securities	$ 108,171	$ 118	$ (1)	$ 108,288
U.S. government and government agency debt securities	66,979	33	—	67,012
Total	$ 175,150	$ 151	$ (1)	$ 175,300

	December 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
Short-term debt securities:				
Corporate debt securities	$ 36,230	$ 2	$ —	36,232
Total	$ 36,230	$ 2	$ —	$ 36,232

As of December 31, 2019, all of our short-term debt securities have contractual maturities of one year or less and all of our long-term debt securities have contractual maturities between one and two years.

As of December 31, 2019, we did not consider any of our short-term or long-term debt investments to be other-than-temporarily impaired. We do not intend to sell, nor do we believe it is more likely than not that we will be required to sell, any of the securities in an unrealized loss position.

4. Fair Value Measurements

As of December 31, 2019, our contingent consideration obligations represent the estimated fair value of the additional consideration payable in connection with our acquisitions of Gram Games in the second quarter of 2018 and Small Giant in the first quarter of 2019. Under the terms of each acquisition, contingent consideration may be payable based on the achievement of certain future performance targets during each annual period following the respective acquisition date for a total of three years, with no maximum limit as to the contingent consideration achievable. For both acquisitions, we estimated the acquisition date fair value and each subsequent measurement of the contingent consideration obligation using a Monte Carlo simulation. The significant unobservable inputs used in estimating these fair value measurements were each entity's projected performance, a risk-adjusted discount rate and performance volatility similar to industry peers. Changes in the projected performance of the acquired businesses could result in a higher or lower contingent consideration obligation in the future.

Specific to the Gram Games acquisition, the estimated fair value of the contingent consideration obligation increased from $49.0 million as of December 31, 2018 to $78.1 million as of December 31, 2019. The increase was primarily due to stronger than expected performance and the increased probability of achievement, partially offset by the $28.5 million payment to the former owners of Gram Games' for its performance during the first annual contingent consideration period. For the years ended December 31, 2019 and 2018, we recognized $57.6 million and $5.5 million, respectively, of expense within research and development expenses in our consolidated statement of operations.

Specific to the Small Giant acquisition, the estimated fair value of the contingent consideration obligation increased from $98.0 million at the acquisition date to $242.0 million as of December 31, 2019. The increase was primarily due to stronger than expected performance and the increased probability of achievement. For the year ended December 31, 2019, we recognized $144.0 million of expense within research and development expenses in our consolidated statement of operations.

The composition of our financial assets and liabilities as of December 31, 2019 and 2018 among the three levels of the fair value hierarchy are as follows (in thousands):

	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 625	$ —	$ —	$ 625
Corporate debt securities	—	151,770	—	151,770
Foreign certificates of deposit and time deposits	—	3,260	—	3,260
Short-term investments:				
Corporate debt securities	—	814,946	—	814,946
U.S. government and government agency debt securities	—	25,000	—	25,000
Foreign certificates of deposit and time deposits	—	53,786	—	53,786
Mutual funds	—	44,441	—	44,441
Long-term investments:				
Corporate debt securities	—	108,288	—	108,288
U.S. government and government agency debt securities	—	67,012	—	67,012
Total financial assets	$ 625	$ 1,268,503	$ —	$ 1,269,128
Liabilities:				
Contingent consideration	$ —	$ —	$ 320,100	$ 320,100
Total financial liabilities	$ —	$ —	$ 320,100	$ 320,100

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 565	$ —	$ —	$ 565
Corporate debt securities	—	4,987	—	4,987
Short-term investments:				
Corporate debt securities	—	36,232	—	36,232
Total financial assets	$ 565	$ 41,219	$ —	$ 41,784
Liabilities:				
Contingent consideration	$ —	$ —	$ 49,000	$ 49,000
Total financial liabilities	$ —	$ —	$ 49,000	$ 49,000

The following table presents the activity for the year ended December 31, 2019 related to our Level 3 liabilities (in thousands):

Level 3 Liabilities:	Total
Contingent consideration obligation – December 31, 2018	$ 49,000
Additions	98,000
Fair value adjustments	201,564
Payments	(28,464)
Contingent consideration obligation – December 31, 2019	$ 320,100

5. Property and Equipment, Net

On July 1, 2019, the Company sold its San Francisco headquarters (the "Building") and related land, including all preexisting leases between the Company and third-party tenants of the Building, to a third-party buyer for net proceeds of approximately $580.5 million (the "Building Sale"). In connection with the Building Sale, the Company de-recognized the related land, building and building improvements and all lessor related assets and liabilities, which resulted in a net gain of $314.2 million within other income (expense), net in our consolidated statement of operations.

Property and equipment, net consist of the following (in thousands):

	December 31, 2019	December 31, 2018
Computer equipment	$ 25,029	$ 20,624
Software	33,932	34,937
Land	—	89,130
Building and building improvements	—	203,873
Furniture and fixtures	11,567	10,321
Leasehold improvements	19,964	6,144
Total property and equipment, gross	$ 90,492	$ 365,029
Less accumulated depreciation	(64,666)	(98,472)
Total property and equipment, net	$ 25,826	$ 266,557

The following represents our property and equipment, net by location (in thousands):

	December 31, 2019	December 31, 2018
United States	$ 16,133	$ 262,844
India	5,255	967
United Kingdom	3,223	1,713
All other countries	1,215	1,033
Total property and equipment, net	$ 25,826	$ 266,557

6. Leases

Lessee Arrangements

We determine if an arrangement is a lease at contract inception. If there is an identified asset in the contract (either explicitly or implicitly) and we have control over its use, the contract is (or contains) a lease. In determining if there is an identified asset, we apply judgment in assessing whether the supplier has a substantive substitution right based on the supplier's practical ability to substitute the asset and the economic benefit to do so. If it is determined that a substantive substitution right exists, the contract is not a lease and is not accounted for under ASC Topic 842. With the respect to the servers utilized in certain of our hosting and data storage arrangements, the Company determined that a substantive substitution right existed given the location of the servers at the supplier's premises, a lack of contractual restrictions preventing the supplier from substituting the servers throughout the period of use and the economic incentive for the supplier to substitute the servers as needed in order to efficiently handle varying levels of demand from its various customers.

In connection with the Building Sale, the Company executed a leaseback of approximately 185,000 square feet of the Building over a 12-year term, where we expect to continue operating our headquarters. The agreement provides the Company two separate options to extend the lease for eight years each and a third option to extend the lease for six years (for a total of an additional 22 years). At lease inception, the Company determined it was not reasonably certain to exercise any of the options to extend. The net initial base rent will be approximately $10.7 million for the first year of the lease and may increase by an annual amount not to exceed 3.25% per year.

Our remaining operating leases are also primarily for office facilities. Certain leases include options to extend the lease for a set number of years or early terminate the lease prior to the contractually defined expiration date. We include such extension periods in the lease term only when it is reasonably certain that they will be exercised and include such periods beyond the early termination date when it is reasonably certain the early terminations will not be exercised. As of December 31, 2019, the weighted-average remaining lease term for all of our operating leases was 9.9 years.

We record right-of-use assets and current and non-current operating lease liabilities in our consolidated balance sheet for operating leases with lease terms greater than 12 months. We have elected not to apply the balance sheet recognition requirements to leases with lease terms of 12 months or less ("short-term leases"). Additionally, we do not separate lease components from non-lease components and therefore allocate the entire consideration to the lease component(s).

Right-of-use assets represent our right to use an underlying asset during the lease term and operating lease liabilities represent our obligation to make lease payments. Right-of-use assets and operating lease liabilities are recognized at the lease commencement date based on the present value of the total required fixed payments over the lease term, with the right-of-use assets further adjusted for any payments made prior to lease commencement, lease incentives received and/or initial direct costs incurred. Certain lease arrangements also include variable payments for costs such as common-area maintenance, utilities, taxes or other operating costs, which are based on a percentage of actual expenses incurred or a fluctuating rate which is unknown at the inception of the contract. These variable lease payments are excluded from the measurement of the right-of-use assets and lease liabilities.

In determining the present value of lease payments, we discount future lease payments using our incremental borrowing rate since the implicit rate in our various leases is unknown. The incremental borrowing rate is determined at lease commencement for each individual lease and is based on a number of factors, including relevant observable debt transactions, the current economic environment, lease term and currency in which the lease is denominated. As of December 31, 2019, the weighted-average incremental borrowing rate for our operating leases was 4.3%.

We recognize lease expense for operating leases and short-term leases on a straight-line basis over the lease term. Variable lease payments are recognized when the underlying uncertainty is resolved, which is generally when the obligation for those costs are incurred. These expenses are presented as operating expenses in the consolidated statement of operations. For the year ended December 31, 2019, the components of lease expense were as follows (in thousands):

	Year Ended December 31, 2019
Operating lease expense	$ 15,106
Variable lease expense	4,562
Total lease expense (1)	$ 19,668

(1) The expense associated with short-term leases with a lease term greater than one month was not material for the year ended December 31, 2019.

For the year ended December 31, 2019, supplemental cash and noncash information related to operating leases, excluding any transition adjustments, was as follows (in thousands):

	Year Ended December 31, 2019
Fixed operating lease payments	$ 16,681
Right-of-use assets obtained in exchange for operating lease liabilities (noncash)	138,905

As of December 31, 2019, future lease payments related to our operating leases were as follows (in thousands):

Year ending December 31:	Operating Leases
2020	$ 21,753
2021	20,908
2022	17,315
2023	16,591
2024	14,196
Thereafter	90,955
Total lease payments	181,718
Less: Imputed interest	(35,664)
Total lease liability balance	$ 146,054

We do not have any leases that have not yet commenced that create significant rights and obligations as of December 31, 2019.

During the third quarter of 2018, we executed an assignment of our Oxford office lease associated with our fourth quarter 2017 restructuring plan. The original lease term ends in November 2022. All terms under the original lease were assigned in full to the assignee, with the assignee becoming primarily liable to make rental payments directly to the landlord. Further, the assignee was required to provide the landlord a security deposit equal to twelve months rent to be used by the landlord in the event of the assignee's non-performance.

In connection with the assignment, the Company became secondarily liable in the event the assignee is unable to perform under the lease. Based on the current rent and related payments, the maximum exposure to the Company is estimated to be $1.7 million as of December 31, 2019. However, the lease is subject to periodic rate reviews which allow the landlord to make market adjustments to the rent and other related payments and accordingly, the maximum exposure may be greater than this amount. As of December 31, 2019, the estimated fair value of this guarantee is not material.

Lessor Arrangements

As noted previously, prior to July 1, 2019, we owned the land and building where our San Francisco headquarters is located and had operating lease arrangements with various third-party tenants for the remaining available office space. However, in connection the Building Sale, effective July 1, 2019, the Company sold all preexisting leases between the Company and its tenants to the buyer. As a result, all lessor related assets and liabilities were de-recognized upon closing.

We do not separate lease components from non-lease components and therefore allocate the entire consideration in our contracts to the lease components. All of the lease and non-lease components qualify for accounting under ASC Topic 842.

For the year ended December 31, 2019 the components of lease income were as follows (in thousands), all of which was recognized prior to the Building Sale and was recorded within other income (expense), net in our consolidated statement of operations:

	Year Ended December 31, 2019
Operating lease income	$ 10,563
Variable lease income	1,103
Total lease income	$ 11,666

7. Acquisitions

Small Giant Games Acquisition

On January 2, 2019, we acquired 80% of all issued and outstanding share capital (including all rights to acquire share capital) of Small Giant Games ("Small Giant"), a Finnish Company, to expand our live service portfolio and new game pipeline, for total purchase consideration of $717.9 million. The remaining 20% will be acquired ratably for potential additional cash consideration payable annually based upon the achievement of specified profitability metrics by Small Giant during each of the three years following the acquisition date. The equity rights and privileges of the remaining Small Giant shareholders lack the traditional rights and privileges associated with equity ownership and accordingly, the transaction is accounted for as if the Company acquired 100% of Small Giant on the acquisition date. Any future payments associated with Zynga's required acquisition of the remaining 20% represent a contingent consideration obligation.

The total purchase consideration included $336.0 million in cash, $30.0 million of cash that was deposited into an escrow account for a period of 18 months as security for general representations and warranties, 63,794,746 shares of our Class A common stock valued at $253.9 million at the acquisition date and contingent consideration of $98.0 million at the acquisition date. The Company records changes in the fair value of the contingent consideration within our consolidated statement of operations in each subsequent reporting period after the acquisition date as they occur (see Note 4 – "Fair Value Measurements" for further discussion on this estimate).

Additionally, in connection with the transaction, the Company executed noncompetition agreements with the management of Small Giant for a term of three years following the acquisition date. However, the acquisition date estimated fair value of the noncompetition agreements was not material.

The following table summarizes the acquisition date fair value of the tangible assets, intangible assets, assumed liabilities, contingent consideration payable and related goodwill acquired from Small Giant (in thousands):

	Total
Cash	$ 34,193
Accounts receivable, net	22,974
Prepaid expenses	2,561
Intangible assets, net:	
Developed technology, useful life of 5 years	155,000
Trade names, useful life of 7 years	32,000
Goodwill	531,187
Property and equipment, net	180
Right-of-use assets	883
Other non-current assets	120
Total assets acquired	779,098
Accounts payable	(1,716)
Income tax payable	(5,623)
Operating lease liabilities	(380)
Other current liabilities	(15,565)
Deferred tax liabilities, net	(37,400)
Non-current operating lease liabilities	(503)
Total liabilities	(61,187)
Total purchase consideration	$ 717,911
Fair value of Zynga Stock Consideration issued(1)	(253,903)
Non-current contingent consideration payable	(98,000)
Total cash consideration, including cash held in escrow	$ 366,008

(1) The fair value of the Zynga Stock Consideration above is estimated based on the total shares issued of 63,794,746 and the closing stock price of Zynga's Common A stock on January 2, 2019 of $3.98 per share.

The fair value of the identified intangible assets, net was determined using a risk-adjusted, discounted cash flow model.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase consideration over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition. The weighted-average amortization period of the acquired intangible assets was 5.3 years at acquisition.

The results of operations from Small Giant have been included in our consolidated statement of operations since the date of acquisition. During the year ended December 31, 2019, Small Giant represented $195.9 million of our total revenue and reduced our consolidated net income with $68.3 million of net losses. Transaction costs incurred by the Company in connection with the Small Giant acquisition, including transfer taxes and professional fees, were $7.6 million for the year ended December 31, 2019 and were recorded within general and administrative expenses in our consolidated statements of operations.

The following table summarizes the pro forma consolidated information of the Company assuming the acquisition of Small Giant had occurred as of January 1, 2018. The pro forma information for all periods presented includes the business combination accounting effects resulting from the acquisition, including amortization for intangible assets acquired, depreciation expense for tangible assets acquired, and recognition of tax benefits primarily related to the amortization of the intangible asset deferred tax liability. The pro forma financial information as presented below is for informational purposes only and is not necessarily indicative of the results of operations that would have been achieved if the acquisition had taken place at the beginning of 2018.

	Year Ended December 31,	
	2019	2018
	(in thousands)	
Total revenue	$ 1,321,659	$ 1,018,177
Net income (loss)	34,729	(58,829)
Basic and diluted net income (loss) per share	0.04	(0.06)

The significant nonrecurring adjustments reflected in the pro forma consolidated information above include the reclassification of the transactions costs and the related income tax impacts incurred after the acquisition to the earliest period presented. Further, the pro forma consolidated net income for the year ended December 31, 2019 includes the $144.0 million of expense recorded to Zynga's consolidated statement of operations related to the increase in the estimated fair value of the Small Giant contingent consideration obligation.

Gram Games Acquisition

On May 25, 2018, we acquired a 100% equity interest in Gram Games, a mobile game developer, to expand our hyper-casual and puzzle games portfolio, for total purchase consideration of $299.4 million. Of the total purchase consideration, $230.9 million was paid in cash and $25.0 million is retained in escrow for a period of 18 months for general representations and warranties for total cash consideration of $255.9 million. The remaining purchase consideration relates to contingent consideration valued at $43.5 million as of the acquisition date. The contingent consideration may be payable based on the achievement of certain future performance targets during each annual period following the acquisition date for a total of three years. The Company records changes in the fair value of the contingent consideration obligation within our consolidated statement of operations in each subsequent reporting period after the acquisition date as they occur (see Note 4 – "Fair Value Measurements" for further discussion).

Additionally, in connection with the transaction, the Company executed noncompetition agreements with the prior management owners of Gram Games for a term of three years following the acquisition date. However, the acquisition date estimated fair value of the noncompetition agreements was not material.

The following table summarizes the acquisition date fair value of the tangible assets, assumed liabilities, intangible assets, contingent consideration and related goodwill acquired from Gram Games (in thousands):

	Total
Cash	$ 8,474
Accounts receivable, net	10,747
Prepaid expenses	279
Other current assets	937
Intangible assets, net:	
Developed technology, useful life of 5 years	43,000
Developed technology, useful life of 3 years	26,000
Trade names, useful life of 7 years	14,000
Trade names, useful life of 3 years	500
Goodwill	224,289
Property and equipment, net	898
Other non-current assets	329
Total assets acquired	329,453
Accounts payable	(8,874)
Income tax payable	(502)
Other current liabilities	(5,164)
Deferred tax liabilities, net	(15,499)
Total liabilities assumed	(30,039)
Total purchase consideration	$ 299,414
Non-current contingent consideration payable	(43,500)
Total cash consideration, including cash held in escrow	$ 255,914

The fair value of the identified intangible assets, net was determined using a risk-adjusted, discounted cash flow model.

Goodwill, which is non-deductible for tax purposes, represents the excess of the purchase consideration over the fair value of the net tangible and intangible assets acquired and is primarily attributable to the assembled workforce of the acquired business and expected synergies at the time of the acquisition. The weighted average amortization period of the acquired intangible assets was 4.7 years at acquisition.

Transaction costs incurred by the Company in connection with the Gram Games acquisition, including professional fees, were $1.7 million for the year ended December 31, 2018 and were recorded within general and administrative expenses in our consolidated statements of operations.

The results of operations from Gram Games have been included in our consolidated statement of operations since the date of acquisition. Pro forma results of operations have not been presented as they are not material to our consolidated statements of operations for the year ended December 31, 2018.

8. Goodwill and Intangible Assets, Net

The following table presents the changes to goodwill from December 31, 2017 to December 31, 2019 (in thousands):

Goodwill(1) – December 31, 2017	$ 730,464
Additions	224,289
Foreign currency translation adjustments(2)	(20,566)
Goodwill(1) – December 31, 2018	$ 934,187
Additions	531,187
Foreign currency translation adjustments(2)	(4,441)
Goodwill(1) – December 31, 2019	$ 1,460,933

(1) There are no accumulated impairment losses at the beginning or end of any period presented.
(2) The change is primarily related to translation adjustments on goodwill associated with the acquisitions of NaturalMotion and Small Giant (2019 activity only), which have functional currencies denominated in British Pounds and Euros, respectively.

The details of our acquisition-related intangible assets as of December 31, 2019 and 2018 are as follows (in thousands):

	December 31, 2019		
	Gross Carrying Value	Accumulated Amortization	Net Book Value
Developed technology	$ 415,466	$ (228,008)	$ 187,458
Trademarks, branding and domain names	63,800	(18,587)	45,213
Noncompetition agreements	8,390	(8,056)	334
Total	$ 487,656	$ (254,651)	$ 233,005

	December 31, 2018		
	Gross Carrying Value	Accumulated Amortization	Net Book Value
Developed technology	$ 263,720	$ (167,664)	$ 96,056
Trademarks, branding and domain names	32,772	(11,702)	21,070
Noncompetition agreements	8,390	(7,107)	1,283
Acquired lease intangibles	5,708	(5,517)	191
Total	$ 310,590	$ (191,990)	$ 118,600

Our trademarks, branding and domain names intangible assets include $6.1 million of indefinite-lived intangible assets as of December 31, 2019 and December 31, 2018. The remaining assets were, and continue to be, amortized on a straight-line basis. Amortization expense related to other intangible assets for 2019, 2018 and 2017 was $67.0 million, $29.0 million and $16.2 million, respectively.

As of December 31, 2019, the weighted-average remaining useful lives of our acquired intangible assets are 3.5 years for developed technology, 5.8 years for trademarks, branding, and domain names, 1.0 years for noncompetition agreements, and 3.9 years for all acquired intangible assets.

As of December 31, 2019, future amortization expense related to our intangible assets is as follows (in thousands):

Year ending December 31:	
2020	$ 65,606
2021	58,078
2022	50,858
2023	40,359
2024	6,718
Thereafter	5,266
Total	$ 226,885

9. Income Taxes

On December 22, 2017, the 2017 Tax Act was enacted into law. Beginning January 1, 2018, the 2017 Tax Act reduced the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax-deferred, created new taxes on certain foreign sourced earnings, repealed the Alternative Minimum Tax (“AMT”), and expanded the number of individuals whose compensation is subject to a $1.0 million cap on deductibility, amongst other minor changes.

In January 2018, the SEC staff issued *Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act* (“SAB 118”) which allowed companies to report provisional amounts as it related to the 2017 Tax Act based on reasonable estimates for items for which the accounting was incomplete during a measurement period that lapsed in the fourth quarter of 2018. During the year ended December 31, 2017, we recorded a provisional tax benefit of $2.4 million related to the remeasurement of our deferred tax assets and liabilities, net of valuation allowance, to reflect the reduction in the corporate tax rate and $2.6 million related to refundable AMT credits generated by the Company in previous years. During the year ended December 31, 2018, there was no net impact to the provision for income taxes based on adjustments made to the provisional amounts recorded during the previous year. However, the Company did record a provision for income tax expense of $3.9 million during the year ended December 31, 2018 related to the Base Erosion and Anti-Abuse Tax (“BEAT”) as a result of proposed regulations issued by the United States Treasury Department. The Company completed its accounting for the income tax effects of the 2017 Tax Act during 2018.

Income (loss) before income taxes consists of the following for the periods shown below (in thousands):

	Year Ended December 31,		
	2019	2018	2017
United States	$ 155,887	$ 29,941	$ (6,081)
International	(108,552)	(3,478)	43,664
Total	$ 47,335	$ 26,463	$ 37,583

The provision for (benefit from) income taxes consists of the following for the periods shown below (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Current tax expense (benefit):			
Federal	$ 11,552	$ 3,918	$ (2,132)
State	5,387	205	142
Foreign	7,722	11,967	13,562
Total current tax expense (benefit)	$ 24,661	$ 16,090	$ 11,572
Deferred tax (benefit) expense:			
Federal	$ 90	$ 1,350	$ (1,231)
State	560	444	300
Foreign	(19,901)	(6,878)	303
Total deferred tax (benefit) expense	$ (19,251)	$ (5,084)	$ (628)
Provision for (benefit from) income taxes	$ 5,410	$ 11,006	$ 10,944

The reconciliation of federal statutory income tax provision (benefit) to our effective income tax provision is as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Expected provision for (benefit from) income taxes at U.S. federal statutory rate(1)	$ 9,940	$ 5,557	$ 13,154
State income taxes, net of federal benefit	4,743	205	142
BEAT obligation	—	3,918	—
Income (loss) taxed at foreign rates	10,292	4,447	(3,643)
Stock-based compensation	(15,683)	(3,457)	(2,898)
Tax reserve for uncertain tax positions	3,174	1,676	3,101
Change in valuation allowance	(56,194)	(5,610)	(51,976)
Impact of 2017 Tax Act	—	—	48,237
Acquisition costs	1,166	536	—
Contingent consideration	42,328	1,155	(252)
Officer's compensation limitation	5,165	2,340	2,582
Investment in subsidiaries	—	—	1,676
Other	479	239	821
Actual provision for (benefit from) income taxes	$ 5,410	$ 11,006	$ 10,944

(1) For the purpose of the reconciliation above, the U.S. federal statutory rate was 21% for both the years ended December 31, 2019 and 2018 and 35% for the year ended December 31, 2017.

Our analysis of the one-time transition tax liability for our foreign subsidiaries enacted by the 2017 Tax Act did not result in additional taxes being owed, considering our accumulated deficit position at December 31, 2017. Additionally, no other income taxes (state or foreign) have been provided for any remaining undistributed foreign earnings not subject to the transition tax, or any additional outside basis difference inherent in our foreign subsidiaries, as these amounts continue to be indefinitely reinvested in foreign operations. As of December 31, 2019 and 2018, the cumulative amount of earnings upon which income taxes have not been provided is approximately $87.1 million and $73.0 million, respectively.

Deferred tax assets and liabilities are recognized for the future tax consequences of differences between the carrying amounts of assets and liabilities and their respective tax basis using enacted tax rates in effect for the year in which the differences are expected to be reversed. Our deferred tax assets and liabilities are as follows (in thousands):

	December 31, 2019	December 31, 2018
Deferred tax assets:		
Net operating loss carryforwards	$ 35,546	$ 60,737
Tax credit carryforwards	76,354	103,740
Operating lease liabilities	34,382	—
Acquired intangible assets	29,982	28,957
Stock-based compensation	9,251	10,150
Accrued expenses	4,899	3,718
Other accrued compensation	7,297	6,524
Charitable contributions	67	2,533
State taxes	1,547	351
Other	71	—
Total deferred tax assets	$ 199,396	$ 216,710
Less: Valuation allowance	(141,577)	(205,989)
Deferred tax assets, net of valuation allowance	$ 57,819	$ 10,721
Deferred tax liabilities:		
Acquired intangible assets	$ (37,600)	$ (11,637)
Right-of-use assets	(34,021)	—
Goodwill	(7,131)	(5,000)
Deferred rent	—	(2,334)
Depreciation	—	(4,694)
Convertible debt	(9,621)	—
Other	(2,275)	(2,547)
Total deferred tax liabilities	$ (90,648)	$ (26,212)
Net deferred taxes	$ (32,829)	$ (15,491)

Due to our history of net operating losses, we believe it is more likely than not that certain federal, state and foreign deferred tax assets will not be realized in future periods as of December 31, 2019. The decrease in the valuation allowance during the year ended December 31, 2019 is primarily related to the use of net operating losses to offset taxable income in 2019, mainly associated with the Building Sale.

Net operating loss and tax credit carryforwards as of December 31, 2019 are as follows (in thousands):

	Amount	Expiration years
Net operating losses, federal	$ 5,991	2030 - 2036
Net operating losses, state	17,384	2020 - 2036
Net operating losses, foreign	13,507	2029 - indefinite
Tax credits, federal	100,462	2027 - 2039
Tax credits, state	93,056	2021 - indefinite

The federal and state net operating loss carryforwards are subject to various annual limitations under Section 382 of the Internal Revenue Code and similar state provisions.

The following table reflects changes in the gross unrecognized tax benefits (in thousands):

December 31, 2016	$ 151,100
Additions based on tax positions related to 2017	8,598
Additions for tax positions of prior years	427
Decreases related to expiration of prior year tax positions	(31)
Decreases related to settlements of prior year tax positions	(54)
December 31, 2017	$ 160,040
Additions based on tax positions related to 2018	4,355
Additions for tax positions of prior years	815
Decreases related to expiration of prior year tax positions	(1,230)
December 31, 2018	$ 163,980
Additions based on tax positions related to 2019	5,879
Additions for tax positions of prior years	1,888
Decreases related to expiration of prior year tax positions	(322)
December 31, 2019	$ 171,425

We classify uncertain tax positions as non-current unrecognized tax liabilities unless expected to be paid within one year or otherwise directly related to an existing deferred tax asset, in which case the uncertain tax position is recorded as an offset to the asset on the consolidated balance sheet. As of December 31, 2019, $156.6 million of our gross unrecognized tax benefits were recorded as a reduction of the related deferred tax assets and the remaining $14.8 million of our gross unrecognized tax benefits were recorded as non-current liabilities in our consolidated balance sheets.

If the balance of gross unrecognized tax benefits of $171.4 million as of December 31, 2019 was realized, this would have resulted in a tax benefit of $14.8 million within our provision for income taxes at such time. If the balance of gross unrecognized tax benefits of $164.0 million as of December 31, 2018 was realized, this would have resulted in a tax benefit of $9.2 million within our provision of income taxes at such time.

During all years presented, we recognized interest and penalties related to unrecognized tax benefits within the provision for income taxes on the consolidated statements of operations. The amount of interest and penalties recorded to the consolidated statements of operations during 2019, 2018 and 2017, was $0.2 million, $0.2 million and $0.3 million, respectively, and the amount of interest and penalties accrued as of December 31, 2019 and 2018 was $1.1 million and $0.9 million, respectively.

We file income tax returns in the U.S. federal jurisdiction as well as many U.S. states and certain foreign jurisdictions. The material jurisdictions in which we are subject to potential examination include the U.S., United Kingdom, Ireland and Finland. We are subject to examination in these jurisdictions for all years since our inception in 2007. Fiscal years outside the normal statute of limitation remain open to audit by tax authorities due to tax attributes generated in those early years which have been carried forward and may be audited in subsequent years when utilized. We do not expect any material changes to our unrecognized tax benefits within the next twelve months.

On June 7, 2019 the U.S. Court of Appeals for the Ninth Circuit (“Ninth Circuit”), issued an opinion in *Altera Corp v. Commissioner* reversing a 2015 U.S. Tax Court decision. The Ninth Circuit ruled in favor of the Commissioner, validating U.S. Treasury regulations that require parties to a qualified cost-sharing arrangement to include stock-based compensation in the cost pool. Altera Corp subsequently petitioned the Ninth Circuit for a rehearing en banc, and, on November 12, 2019, the Ninth Circuit denied such petition. On February 10, 2020, Altera Corp requested the U.S. Supreme Court to review the Ninth Circuit’s decision. It is unclear whether the U.S. Supreme Court will review the case or when a determination will be made. As a result, the final outcome of the case is uncertain. Due to the uncertainty surrounding the status of the current regulations, questions related to the scope of potential benefits or obligations, and the possibility of the Ninth Circuit’s decision being overturned upon appeal, we have not recorded a liability related to an unrecognized tax position as of December 31, 2019. We will continue to monitor future developments and their potential effects on our consolidated financial statements.

10. Debt

Convertible Senior Notes

On June 14, 2019, we issued $690.0 million aggregate principal amount of 0.25% Convertible Senior Notes due 2024 (the “Notes”), including the initial purchasers’ exercise in full of their option to purchase an additional $90.0 million principal amount of the Notes, in a private placement to qualified institutional buyers in an offering exempt from registration under the Securities Act. The net proceeds from the issuance of the Notes was $672.2 million after deducting transaction costs.

The Notes are governed by an indenture (the "Indenture") between us, as the issuer, and Wells Fargo Bank, National Association, as trustee. The Notes are senior unsecured obligations and rank senior in right of payment to all of our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to all of our existing and future liabilities that are not so subordinated; effectively junior to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities of our current or future subsidiaries (including trade payables). The Indenture does not contain any financial covenants. The Notes mature on June 1, 2024 unless earlier converted, redeemed or repurchased in accordance with their term prior to the maturity date. Interest is payable semiannually in arrears on June 1 and December 1 of each year, beginning on December 1, 2019.

The Notes have an initial conversion rate of 120.3695 shares of our Class A common stock per $1,000 principal amount of Notes, which is equal to an initial conversion price of approximately $8.31 per share of our Class A common stock and is subject to adjustment in certain events. Following certain corporate events that occur prior to the maturity date or following our issuance of a notice of redemption, we will increase the conversion rate for a holder who elects to convert its Notes in connection with such corporate event or during the related redemption period in certain circumstances. Additionally, upon the occurrence of a corporate event that constitutes a "fundamental change" per the Indenture, holders of the Notes may require us to repurchase for cash all or a portion of their Notes at a purchase price equal to 100% of the principal amount of the Notes plus accrued and unpaid interest.

Prior to the close of business on the business day immediately preceding March 1, 2024, the Notes will be convertible only under the following circumstances:

- during any calendar quarter, if the last reported sale price of our Class A common stock for at least 20 trading days in a period of 30 consecutive trading days ending on the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business-day period after any five consecutive trading-day period in which the trading price per $1,000 principal amount of Notes for such trading day was less than 98% of the product of the last reported sale price of our Class A common stock and the conversion rate on each such trading day;
- if we call the Notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or
- upon the occurrence of specified corporate events described in the Indenture.

On or after March 1, 2024, holders of the Notes may convert all or any portion of their Notes regardless of the foregoing conditions. Upon any conversion, holders will receive cash, shares of our Class A common stock or a combination of cash and shares of our Class A common stock, at our election.

The Company may not redeem the Notes prior to June 5, 2022. On or after June 5, 2022, the Company may redeem for cash all or any portion of the Notes, at its option, if the last reported sale price of our Class A common stock has been at least 130% of the conversion price for at least 20 trading days during any 30 consecutive trading-day period ending on the immediately preceding date when the Company provides a notice of redemption. The redemption price is equal to 100% of the principal amount of the Notes to be redeemed, plus any accrued and unpaid interest.

As of December 31, 2019, the conditions allowing holders of the Notes to convert have not been met and therefore the Notes are not yet convertible.

We separately accounted for the liability and equity components of the Notes. We determined the initial carrying amount of the $572.0 million liability component by calculating the present value of the cash flows using an effective interest rate of 4.1%. The interest rate was determined based on non-convertible debt offerings of similar sizes and terms by companies with similar credit ratings (Level 2 inputs). The carrying amount of the equity component, representing the conversion option, was $118.0 million and was calculated by deducting the initial carrying value of the liability component from the principal amount of the Notes as a whole. This difference represents a debt discount that is amortized to interest expense over the 5-year contractual term of the Notes using the effective interest rate method. The equity component is not remeasured as long as it continues to meet the conditions for equity classification.

We allocated transaction costs related to the issuance of the Notes to the liability and equity components using the same proportions as the initial carrying value of the Notes. Transaction costs initially attributable to the liability component were $14.8 million and are being amortized to interest expense using the effective interest method over the term of the Notes. Transaction costs attributable to the equity component were $3.1 million and are accounted for consistently with the equity component of the debt.

The net carrying amount of the liability and equity components of the Notes was as follows (in thousands):

	December 31, 2019
Liability component:	
Principal	$ 690,000
Unamortized debt discount	(106,224)
Unamortized transaction costs	(13,320)
Net carrying amount	$ 570,456
Equity component, net of transaction costs	$ 114,938

Interest expense recognized related to the Notes was as follows (in thousands):

	Year Ended December 31, 2019
Contractual interest expense	$ 944
Amortization of debt discount	11,766
Amortization of transaction costs	1,475
Total	$ 14,185

As of December 31, 2019, the estimated fair value of the Notes was $706.5 million. We estimated the fair value based on the quoted market prices in an inactive market on the last trading day of the reporting period, which are considered Level 2 inputs.

Capped Call Transactions

In connection with the offering of the Notes, the Company entered into privately negotiated capped call transactions with certain counterparties (collectively, the “Capped Calls”). The Capped Calls have an initial strike price of approximately $8.31 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The Capped Calls have an initial cap price of $12.54 per share, subject to certain adjustments. The Capped Calls are generally intended to reduce or offset the potential economic dilution of approximately 83.1 million shares to our Class A common stock upon any conversion of the Notes with such reduction or offset, as the case may be, subject to a cap based on the cap price. As the Capped Calls are considered indexed to our own stock and are equity classified, they are recorded in stockholders’ equity and are not accounted for as derivatives. The cost of $73.8 million incurred in connection with the Capped Calls was recorded as a reduction to additional paid-in capital.

Convertible Senior Notes and Capped Call Transactions – Impact on Earnings per Share

The 83.1 million shares underlying the conversion option of the Notes will not have an impact on our diluted earnings per share until the average market price of our Class A common stock exceeds the conversion price of $8.31 per share, as we intend and have the ability to settle the principal amount of the Notes in cash upon conversion. The Company computes the potentially dilutive impact of the shares of Class A common stock related to the Notes using the treasury stock method. Capped Calls are excluded from the calculation of diluted earnings per share, as they would be antidilutive under the treasury stock method.

Credit Facility

In December 2018, the Company entered into a credit agreement (the “Credit Agreement”) with Bank of America, N.A. that provides for a three-year revolving credit facility (the “Credit Facility”) in an initial aggregate principal amount of up to $200.0 million and is secured by a blanket lien on the Company’s assets. In connection with the Building Sale and consistent with the terms of the Credit Facility, the borrowing capacity was reduced to $150.0 million on July 1, 2019. The Company may borrow, repay and re-borrow funds under the Credit Agreement until the third anniversary of the closing date, at which time the Credit Facility will terminate, and all outstanding revolving loans, together with all accrued and unpaid interest, must be repaid. Finally, the Company may use the proceeds of future borrowings under the Credit Facility for general corporate purposes.

At the Company's option, revolving loans accrue interest at a per annum rate based on either (i) the base rate plus a margin ranging from 0.50% to 1.00%, determined based on the Company's consolidated leverage ratio for the four most recent fiscal quarters (the "Consolidated Leverage Ratio") or (ii) the LIBOR rate (for interest periods of one, two, three or six months) plus a margin ranging from 1.50% to 2.00%, determined based on the Company's Consolidated Leverage Ratio ("LIBOR Loan"). The base rate is defined as the highest of (i) the federal funds rate, plus 0.50%, (ii) Bank of America, N.A.'s prime rate and (iii) the LIBOR rate for a one-month interest period plus 1.00%. The Company is also obligated to pay an ongoing commitment fee on undrawn amounts at a rate ranging from 0.25% to 0.35%, determined based on the Company's Consolidated Leverage Ratio.

As of December 31, 2019, we had no amounts outstanding under the Credit Facility.

Debt issuance costs associated with the Credit Facility were capitalized and are amortized on a straight-line basis over the three-year term of the Credit Agreement, with the expense recorded to interest expense in our consolidated statement of operations.

11. Other Current and Non-Current Liabilities

Other current liabilities consist of the following (in thousands):

	December 31, 2019	December 31, 2018
Accrued accounts payable	$ 41,443	$ 22,669
Accrued compensation liability	52,495	41,554
Accrued restructuring liability	—	3,449
Contingent consideration payable	180,000	17,300
Accrued payable from acquisitions	30,000	35,000
Accrued lease incentive obligation	—	24,895
Value-added taxes payable	2,857	2,624
Other current liabilities	8,010	9,338
Total other current liabilities	$ 314,805	$ 156,829

Our accrued compensation liability represents employee bonus and other payroll withholding expenses, while other current liabilities include various expenses that we accrue for transaction taxes, customer deposits and accrued vendor expenses.

Other non-current liabilities consist of the following (in thousands):

	December 31, 2019	December 31, 2018
Contingent consideration payable	$ 140,100	$ 31,700
Accrued restructuring liability	—	7,613
Uncertain tax positions liability, including interest and penalties	15,851	10,065
Other non-current liabilities	2,462	3,208
Total other non-current liabilities	$ 158,413	$ 52,586

12. Stockholders' Equity and Other Employee Benefits

Common Stock

Our three classes of common stock are Class A, Class B and Class C common stock. On May 2, 2018, our founder, Mark Pincus, elected to convert certain outstanding shares of Class B common stock and all outstanding shares of Class C common stock controlled by Mr. Pincus and an affiliated investment entity into an equivalent number of shares of Class A common stock. As a result of Mr. Pincus' conversion, the remaining shares of Class B common stock represented less than 10% of the total voting power of all Zynga stockholders and, accordingly, each remaining outstanding share of Class B common stock automatically converted into one share of Class A common stock. Each Zynga stockholder now has one vote per share on all matters subject to stockholder vote. Following the conversion, no shares of Class B or Class C common stock are outstanding.

The following are the rights and privileges of our classes of common stock:

Dividends. The holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available at the times and in the amounts which our Board of Directors may determine.

Voting Rights. Holders of our Class A common stock are entitled to one vote per share.

Liquidation. Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our Class A common stock.

Preemptive or Similar Rights. None of our common stock is entitled to preemptive rights or subject to redemption.

Conversion. Our Class A common stock is not convertible into any other shares of our capital stock. The Class B and Class C common stock converted into Class A common stock may not be reissued.

Stock Repurchases

In April 2018, a share repurchase program was authorized for up to $200.0 million of our outstanding Class A common stock ("2018 Share Repurchase Program"). The timing and amount of any stock repurchase will be determined based on market conditions, share price and other factors. The program does not require us to repurchase any specific number of shares of our Class A common stock and may be modified, suspended or terminated at any time without notice. The 2018 Share Repurchase Program will be funded from existing cash on hand or other sources of funding as the Company may determine to be appropriate. Share repurchases under these authorizations may be made through a variety of methods, which may include open market purchases, privately negotiated transactions, block trades, accelerated share repurchase transactions, purchases through 10b5-1 plans or by any combination of such methods.

During the year ended December 31, 2018, we repurchased 7.1 million shares for our Class A common stock under the 2018 Share Repurchase Program at a weighted average price of $3.71 per share for a total of $26.2 million. During the year ended December 31, 2019, no share repurchases were made. As of December 31, 2019, we had $173.8 million remaining under the 2018 Share Repurchase Program. The 2018 Share Repurchase Program will expire in April 2022.

All of our stock repurchases were made through open market purchases under Rule 10b5-1 plans and subsequently retired.

Equity Incentive Plans and Stock-Based Compensation Expense

In 2007, we adopted the 2007 Equity Incentive Plan (the "2007 Plan") for the purpose of granting stock options and ZSUs to employees, directors and non-employees. Concurrent with the effectiveness of our initial public offering on December 15, 2011, we adopted the 2011 Equity Incentive Plan (the "2011 Plan"), and all remaining common shares reserved for future grant or issuance under the 2007 Plan were added to the 2011 Plan. The 2011 Plan was adopted for purposes of granting stock options and ZSUs to employees, directors and non-employees. The number of shares of our Class A common stock reserved for future issuance under our 2011 Plan will automatically increase on January 1 of each year, beginning on January 1, 2012, and continuing through and including January 1, 2021, by 4% of the total number of shares of our capital stock outstanding as of December 31 of the preceding calendar year or such lesser number of shares that may be determined by the Company's Board of Directors.

We recorded stock-based compensation expense related to grants of employee stock options, ZSUs and performance-based awards in our consolidated statements of operations as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Cost of revenue	$ 1,471	$ 1,584	$ 1,838
Research and development	47,049	42,151	42,176
Sales and marketing	11,277	8,495	7,281
General and administrative	21,685	16,009	13,220
Total stock-based compensation expense	$ 81,482	$ 68,239	$ 64,515

Stock Option Activity

All stock options granted under the 2011 Plan generally vest over four to five years, with 25% to 20% vesting after one year and the remainder vesting monthly thereafter over 36 to 48 months, respectively. The stock options have a contract term of 10 years and the related expense is determined using the Black-Scholes option pricing model on the date of grant.

The following table shows stock option activity for the year ended December 31, 2019 (in thousands, except weighted-average exercise price and weighted-average contractual term):

	Outstanding Options			
	Stock Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value of Stock Options Outstanding	Weighted-Average Contractual Term (in years)
Balance as of December 31, 2018	36,185	$ 2.35	$ 57,510	6.23
Granted	4,647	5.37		
Forfeited, expired and cancelled	(42)	2.85		
Exercised	(9,586)	0.90		
Balance as of December 31, 2019	31,204	$ 3.24	$ 89,786	7.19
As of December 31, 2019				
Exercisable options	15,666	$ 2.78	$ 52,363	6.59
Vested and expected to vest	31,204	$ 3.24	$ 89,786	7.19

The following table presents the weighted-average grant date fair value and related assumptions used to estimate the fair value of our stock options:

	Year Ended December 31,		
	2019	2018	2017
Expected term, in years	6	6	6
Risk-free interest rates	2.53%	2.14%	2.12%
Expected volatility	43%	47%	46%
Dividend yield	—	—	—
Weighted-average estimated fair value of stock options granted during the year	$ 2.41	$ 1.61	$ 1.75

The aggregate intrinsic value of stock options exercised during 2019, 2018 and 2017 was $44.9 million, $6.3 million and $4.9 million, respectively. The total grant date fair value of options that vested during December 31, 2019, 2018 and 2017 was $9.5 million, $6.0 million and $8.0 million, respectively.

As of December 31, 2019, total unrecognized stock-based compensation expense of $23.5 million related to unvested stock options is expected to be recognized over a weighted-average recognition period of approximately 2.1 years.

ZSU Activity

ZSUs are granted to eligible employees under the 2011 Plan. In general, ZSU awards vest in annual or quarterly installments over a period of four years, are subject to the employee's continuing service to us and do not have an expiration date. The cost of ZSUs is determined using the fair value of our common stock on the date of grant.

The following table shows a summary of ZSU activity for the year ended December 31, 2019 (in thousands, except weighted-average grant date fair value):

	Outstanding ZSUs		
	Shares	Weighted-Average Grant Date Fair Value (per share)	Aggregate Intrinsic Value of Unvested ZSUs
Unvested as of December 31, 2018	52,482	$ 3.49	$ 206,254
Granted	14,086	5.61	
Vested	(21,650)	3.43	
Forfeited	(4,730)	3.81	
Unvested as of December 31, 2019	40,188	$ 4.23	$ 245,951

As of December 31, 2019, total unamortized stock-based compensation expense relating to ZSUs amounted to $152.7 million over a weighted-average recognition period of approximately 2.4 years.

Performance-Based Awards

Certain employees are eligible to receive performance-based ZSUs, which are subject to performance and time-based vesting requirements. The target number of shares of the performance-based awards are adjusted based on our business performance measured against the performance goals approved by the Compensation Committee at the date of employment with the Company. Generally, if the performance criteria are satisfied, 25% of the award will vest immediately or soon after with the remaining vesting ratably for each quarter or six month periods thereafter. Stock-based compensation expense for performance-based ZSUs granted to these employees is recorded based on the probability of achievement of the performance milestones. During the years ended December 31, 2019, 2018 and 2017, we recorded $1.2 million, $1.8 million and $2.4 million, respectively, of stock-based compensation expense related to these performance-based ZSUs.

2011 Employee Stock Purchase Plan

Our 2011 Employee Stock Purchase Plan ("2011 ESPP"), was approved by our Board of Directors in September 2011 and by our stockholders in November 2011 and amended in August 2012. The number of shares of our Class A common stock reserved for future issuance under our 2011 ESPP will automatically increase on January 1 of each year, beginning on January 1, 2012, and continuing through and including January 1, 2021, by the lesser of 2% of the total number of shares of our capital stock outstanding as of December 31 of the preceding calendar year, 25,000,000 shares or the number of shares that may be determined by the Company's Board of Directors.

Our 2011 ESPP permits participants to purchase shares of our Class A common stock through payroll deductions up to 15% of their earnings, subject to a maximum of 5,000 shares available for purchase on any purchase date. Unless otherwise determined by the administrator, the purchase price of the shares will be 85% of the lower of the fair market value of our Class A common stock on the first day of an offering or on the date of purchase. The ESPP offers two purchase dates within each annual period, resulting in a six-month and twelve-month look-back. Additionally, the ESPP contains an automatic reset feature after the first six months of each annual period, such that if the fair market value of our Class A common stock has decreased from the original offering date, the offering will automatically terminate and all participants will be re-enrolled in the new, lower-priced offering for the remaining six months. Participants may end their participation at any time during an offering and will be refunded their accrued contributions that have not yet been used to purchase shares. Participation ends automatically upon termination of employment.

As of December 31, 2019, there were $3.4 million of employee contributions withheld by the Company. During the year ended December 31, 2019, the Company recognized $3.4 million of stock-based compensation expense related to the 2011 ESPP.

Employee Savings Plan

We have a defined contribution plan, which is qualified under Section 401(k) of the Internal Revenue Code. Participating employees may contribute up to 90% of their eligible compensation, or the statutory limit, whichever is lower. In 2019, 2018 and 2017, we contributed one dollar for each dollar a participant contributed, with a maximum contribution of 3% of each employee's eligible compensation, subject to a maximum total contribution mandated by the IRS. The total expense for this savings plan was $5.8 million, $4.7 million and $4.5 million in 2019, 2018 and 2017, respectively.

Common Stock Reserved for Future Issuance

As of December 31, 2019, we had reserved shares of common stock for future issuance as follows (in thousands):

	December 31, 2019
Stock options outstanding	31,204
ZSUs outstanding	40,188
2011 Equity Incentive Plan	152,769
2011 Employee Stock Purchase Plan	122,380
Total	346,541

13. Accumulated Other Comprehensive Income (Loss)

The following table shows a summary of changes in accumulated other comprehensive income (loss) by component from December 31, 2017 to December 31, 2019 (in thousands):

	Foreign Currency Translation	Unrealized Gains (Losses) on Available-for-Sale Marketable Debt Securities	Total
Balance as of December 31, 2017	$ (93,319)	$ (178)	$ (93,497)
Other comprehensive income (loss) before reclassifications	(25,122)	180	(24,942)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—
Net other comprehensive income (loss), net of tax	(25,122)	180	(24,942)
Balance as of December 31, 2018	$ (118,441)	$ 2	$ (118,439)
Other comprehensive income (loss) before reclassifications	(7,773)	277	(7,496)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—
Net other comprehensive income (loss), net of tax	(7,773)	277	(7,496)
Balance as of December 31, 2019	$ (126,214)	$ 279	$ (125,935)

14. Net Income (Loss) Per Share of Common Stock

As noted previously, our founder, Mark Pincus, elected to convert certain outstanding shares of Class B common stock and all outstanding shares of Class C common stock controlled by Mr. Pincus and an affiliated investment entity into an equivalent number of shares of Class A common stock in May 2018. Following the conversion, no shares of Class B or Class C common stock are outstanding and accordingly, the Company calculated basic and dilutive net income (loss) per share under a single-class method for 2019 and 2018.

Prior to the conversion noted above, we computed net income (loss) per share of common stock using the two-class method required for participating securities and multiple classes of common stock. Prior to the date of the initial public offering, we considered all series of our convertible preferred stock to be participating securities due to their non-cumulative dividend rights. Additionally, we considered shares issued upon the early exercise of options subject to repurchase and unvested restricted shares to be participating securities, because the holders of such shares have non-forfeitable dividend rights in the event we declare a dividend for common shares. In accordance with the two-class method, net income allocated to these participating securities, which include participation rights in undistributed net income, is subtracted from net income (loss) to determine total net income (loss) to be allocated to common stockholders.

Basic net income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding, including potential dilutive securities. In computing diluted net income (loss) per share, net income (loss) attributable to common shareholders is re-allocated to reflect the potential impact of dilutive securities, including stock options, unvested ZSUs, unvested performance-based ZSUs and ESPP withholdings. For periods in which we have generated a net loss or there is no income attributable to common stockholders, we do not include dilutive securities in our calculation of diluted net income (loss) per share, as the impact of these awards is anti-dilutive.

The following tables set forth the computation of basic and diluted net income (loss) per share of common stock (in thousands, except per share data):

	Year Ended December 31,	
	2019	2018
	Class A	Class A (1)
Basic		
Net income (loss) attributable to common stockholders	$ 41,925	$ 15,457
Weighted-average common shares outstanding	938,709	862,460
Net income (loss) per share attributable to common stockholders	$ 0.04	$ 0.02
Diluted		
Net income (loss) attributable to common stockholders – basic	$ 41,925	$ 15,457
Weighted-average common shares outstanding – basic	938,709	862,460
Weighted-average effect of dilutive securities:		
Stock options and employee stock purchase plan	12,960	10,958
ZSUs	22,351	15,212
Performance-based ZSUs	—	954
Weighted-average common shares outstanding – diluted	974,020	889,584
Net income (loss) per share attributable to common stockholders – diluted	$ 0.04	$ 0.02

(1) The net income (loss) per share calculation for the year ended December 31, 2018 is presented as if the one-for-one class conversion occurred as of the beginning of the period.

	Year Ended December 31, 2017		
	Class A	Class B	Class C
Basic			
Net income (loss) attributable to common stockholders	$ 23,795	$ 2,204	$ 629
Weighted-average common shares outstanding	776,625	71,925	20,517
Net income (loss) per share attributable to common stockholders	$ 0.03	$ 0.03	$ 0.03
Diluted			
Net income (loss) attributable to common stockholders – basic	$ 23,795	$ 2,204	$ 629
Reallocation of net income (loss) as a result of conversion of Class C shares to Class A shares	629	—	—
Reallocation of net income (loss) as a result of conversion of Class B shares to Class A shares	2,204	—	—
Reallocation of net income (loss) to Class B and Class C shares	—	180	(20)
Net income (loss) attributable to common stockholders – diluted	$ 26,628	$ 2,384	$ 609
Weighted-average common shares outstanding – basic	776,625	71,925	20,517
Conversion of Class C to Class A common shares outstanding	20,517	—	—
Conversion of Class B to Class A common shares outstanding	71,925	—	—
Weighted-average effect of dilutive securities:			
Stock options and employee stock purchase plan	9,879	8,390	—
ZSUs	16,935	—	—
Performance-based ZSUs	1,284	—	—
Weighted-average common shares outstanding – diluted	897,165	80,315	20,517
Net income (loss) per share attributable to common stockholders – diluted	$ 0.03	$ 0.03	$ 0.03

The following weighted-average employee equity awards were excluded from the calculation of diluted net income (loss) per share because their effect would have been anti-dilutive for the periods presented (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Stock options and employee stock purchase plan	3,718	6,193	17,331
Restricted shares	—	—	349
ZSUs	580	8,071	5,087
Total	4,298	14,264	22,767

15. Commitments and Contingencies

The amounts represented in the tables below reflect our minimum cash obligations for the respective calendar years based on contractual terms, but not necessarily the periods in which these costs will be expensed in the Company's consolidated statement of operations.

Licensor and Marketing Commitments

We have entered into several contracts with licensors that contain minimum contractual and marketing commitments that may not be dependent on any deliverables. As of December 31, 2019, future minimum contractual royalty payments due to licensors and marketing commitments for the licensed products are as follows (in thousands):

Year ending December 31:	
2020	$ 20,250
2021	9,782
2022	—
2023	10,000
Thereafter	—
Total	$ 40,032

Other Purchase Commitments

We have entered into several contracts primarily for hosting of data systems and other services. As of December 31, 2019, future minimum purchase commitments that have initial or remaining non-cancelable terms are as follows (in thousands):

Year ending December 31:	
2020	$ 30,380
2021	12,813
2022	1,111
Thereafter	—
Total	$ 44,304

Excluded from tables above is our uncertain income tax position liability of $15.9 million, which includes interest and penalties, as the Company cannot make a reasonably reliable estimate of the period of cash settlement.

Legal Matters

The Company is involved in legal and regulatory proceedings on an ongoing basis. Some of these proceedings are in early stages and may seek an indeterminate amount of damages. If the Company believes that a loss arising from such matters is probable and can be reasonably estimated, the Company accrues the estimated liability in its financial statements. If only a range of estimated losses can be determined, the Company accrues an amount within the range that, in its judgment, reflects the most likely outcome; if none of the estimates within that range is a better estimate than any other amount, the Company accrues the low end of the range. For proceedings in which an unfavorable outcome is reasonably possible but not probable and an estimate of the loss or range of losses arising from the proceeding can be made, the Company discloses such an estimate, if material. If such a loss or range of losses is not reasonably estimable, the Company discloses that fact. In assessing the materiality of a proceeding, the Company evaluates, among other factors, the amount of monetary damages claimed, as well as the potential impact of non-monetary remedies sought by plaintiffs that may require changes to business practices in a manner that could have a material adverse impact on the Company's business. Legal expenses are recognized as incurred.

On September 12, 2019, we announced that an incident had occurred that may have involved player data (the "Data Incident"). Upon our discovery of the Data Incident, an investigation immediately commenced and advisors and third-party forensics firms were retained to assist. Our current belief is that, during the third quarter of 2019, outside hackers may have illegally accessed certain player account information and other Zynga information, and that no financial information was accessed. We have provided notifications to players, investors, regulators and other third parties, where we believe notice was required or appropriate. At this time, we are unable to estimate the loss or range of loss, if any, arising from this matter.

The Company is, at various times, also party to various other legal proceedings and claims not previously discussed which arise in the ordinary course of business. In addition, the Company may receive notifications alleging infringement of patent or other intellectual property rights. Adverse results in any such litigation, legal proceedings or claims may include awards of substantial monetary damages, expensive legal fees, costly royalty or licensing agreements, or orders preventing us from offering certain games, features, or services, and may also result in changes in the Company's business practices, which could result in additional costs or a loss of revenue and could otherwise harm the Company's business. Although the results of such litigation cannot be predicted with certainty, the Company believes that the amount or range of reasonably possible losses related to such pending or threatened litigation will not have a material adverse effect on its business, operating results, cash flows, or financial condition should such litigation be resolved unfavorably.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of 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 as of the end of the period covered by this Annual Report on Form 10-K. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) of the Exchange Act. Our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2019. Management reviewed the results of its assessment with our Audit Committee. The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report which is included in Item 8 under the caption "Report of Independent Registered Public Accounting Firm" which is incorporated herein by reference.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act during the quarter ended December 31, 2019 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

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 judgment in evaluating the benefits of possible controls and procedures relative to their costs.

ITEM 9B. OTHER INFORMATION

On February 27, 2020, our Board of Directors amended and restated the Company's bylaws (the "Fourth Amended and Restated Bylaws") in order to:

- consistent with our historical practice, provide that stockholders holding at least 30 percent of the Company's common stock in the aggregate are permitted to request the call of a special meeting of stockholders;
- revise and update the advance notice provisions for director nominations and stockholder proposals; and
- make certain other non-substantive technical edits and updates.

The foregoing description of the Fourth Amended and Restated Bylaws does not purport to be complete and is qualified in its entirety by reference to the full text of the Fourth Amended and Restated Bylaws, which is filed as Exhibit 3.2 to this Annual Report on Form 10-K and is incorporated herein by reference.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference to Zynga's Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019.

Our Board of Directors has adopted a Code of Business Conduct and Ethics applicable to all officers, directors and employees, which is available on our website (www.zynga.com) under "Corporate Governance." We will provide a copy of these documents to any person, without charge, upon request, by writing to us at Zynga Inc., Investor Relations Department, 699 Eighth Street, San Francisco, California 94103. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics by posting such information on our website at the address and the location specified above.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference to Zynga's Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated by reference to Zynga's Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated by reference to Zynga's Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference to Zynga's Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this report:

1. Consolidated Financial Statements: See Index to Consolidated Financial Statements under Item 8 on page 50 of this Annual Report on Form 10-K.

2. Financial Statements Schedule:

Schedule II: Valuation and Qualifying Accounts (in thousands)

Allowance for Doubtful Accounts and Reserve for Uncollectible Advances	Balance at Beginning of Year	Charges to Expense	Write-Offs, Net of Recoveries	Balance at End of Year
Year Ended December 31, 2019	$ 2,653	$ 148	$ (2,801)	$ —
Year Ended December 31, 2018	—	3,215	(562)	2,653
Year Ended December 31, 2017	—	—	—	—

All other schedules have been omitted because they are not required, not applicable, or the required information is otherwise included.

3. Exhibits:

		Incorporated by Reference				Filed Herewith
Exhibit No.	Description of Exhibit	Form	File No.	Exhibit	Filing Date	
2.1†	Share Sale and Purchase Agreement relating to the sale and purchase of all issued and outstanding shares and other equity securities of Small Giant Games Oy between those persons listed in Schedule 1 as Sellers and Zynga Inc. as Purchaser	8-K	001-35375	2.1	12/20/2018	
2.2†	Share Sale and Purchase Agreement relating to the sale and purchase of the entire issued share capital of Gram Games Teknoloji A.S. between those persons listed in Schedule 1 as Sellers and Zynga Inc. as Purchaser	8-K	001-35375	2.1	5/30/2018	
3.1	Seventeenth Amended and Restated Certificate of Incorporation of Zynga Inc.	8-K	001-35375	3.1	06/11/2014	
3.2	Fourth Amended and Restated Bylaws of Zynga Inc.					X
4.1	Form of Zynga Inc. Class A Common Stock Certificate	S-1/A	333-175298	4.1	11/4/2011	
4.2	Indenture, dated June 14, 2019, between Zynga Inc. and Wells Fargo Bank, National Association	8-K	001-35375	4.1	6/14/2019	
4.3	Form of 0.25% Convertible Senior Note due 2024 (included in Exhibit 4.2)	8-K	001-35375	4.1	6/14/2019	
4.4	Description of Securities					X
10.2+	Zynga Inc. 2007 Equity Incentive Plan, as Amended and Restated on August 21, 2018	8-K	001-35375	10.2	8/27/2018	
10.3+	Forms of Stock Option Agreement and Stock Option Exercise Agreement under 2007 Equity Incentive Plan	S-1/A	333-175298	10.3	11/17/2011	
10.4+	Forms of Notice of Restricted Stock Unit Award and Restricted Stock Unit Agreement under 2007 Equity Incentive Plan	S-1/A	333-175298	10.26	11/17/2011	
10.5+	Zynga Inc. 2011 Equity Incentive Plan, as Amended and Restated on August 21, 2018	8-K	001-35375	10.3	8/27/2018	

10.6+	Forms of Stock Option Grant Notice and Option Agreement under 2011 Equity Incentive Plan	S-1/A	333-175298	10.5	11/17/2011	
10.7+	Forms of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement under 2011 Equity Incentive Plan	10-Q	001-35375	10.3	5/8/2012	
10.8+	Form of 2011 Equity Incentive Plan Performance Cash Award Agreement	8-K	001-35375	10.1	4/4/2013	
10.9+	Zynga Inc. 2011 Employee Stock Purchase Plan, as amended on August 15, 2012	S-8	333-206185	4.6	8/7/2015	
10.10+	Form of Indemnification Agreement made by and between Zynga Inc. and each of its directors and executive officers	S-1/A	333-175298	10.6	11/17/2011	
10.11+	Zynga Inc. Non-Employee Director Compensation Policy					X
10.12+	Zynga Inc. Change in Control Severance Benefit Plan, as Amended and Restated on August 21, 2018	8-K	001-35375	10.1	8/27/2018	
10.13+	Offer Letter, between Zynga Inc. and Frank Gibeau, as Amended and Restated effective as of August 23, 2018	8-K	001-35375	10.4	8/27/2018	
10.14+	Offer Letter, between Zynga Inc. and Matthew Bromberg	10-Q	001-35375	101	8/5/2016	
10.15+	Offer Letter between Zynga Inc. and Bernard Kim	10-Q	001-35375	10.2	8/5/2016	
10.16+	Offer letter between Zynga Inc. and Gerard Griffin	8-K	001-35375	10.1	9/30/2016	
10.17+	Promotion letter between Zynga Inc. and Jeffrey Buckley	10-Q	001-35375	10.2	5/5/2017	
10.18+	Offer letter between Zynga Inc. and Phuong Phillips	10-Q	001-35375	10.1	11/8/2017	
10.19+	Offer letter between Zynga Inc. and Jeffrey Ryan	10-K	001-35375	10.19	2/28/2019	
10.20+	Director Nomination Letter	8-K	001-35375	10.1	5/2/2018	
10.21+	Consulting Services Agreement between Zynga Inc. and William B. Gordon, dated as of May 11, 2018	10-Q	001-35375	10.2	8/3/2018	
10.22†	Agreement of Purchase and Sale, dated as of May 24, 2019, by and between Big Dog Holdings LLC, a subsidiary of the registrant, and BCP-CG 650 Property LLC	8-K	001-35375	10.1	5/28/2019	
10.23†	Form of Office Lease, by and between Zynga Inc., as tenant, and BCP-CG 650 Property LLC, as landlord	8-K	001-35375	10.1	5/28/2019	
10.24	Purchase Agreement, dated June 11, 2019, by and among Zynga Inc. and Morgan Stanley & Co. LLC and BofA Securities, Inc., as representatives of the several initial purchasers named in Schedule I thereto	8-K	001-35375	10.1	6/14/2019	
10.25	Form of Capped Call Confirmation	8-K	001-35375	10.2	6/14/2019	
10.26	First Amendment to Credit Agreement, dated as of June 11, 2019, among Zynga Inc., as borrower, certain subsidiaries of Zynga Inc., as guarantor subsidiaries, and Bank of America, N.A., as lender	8-K	001-35375	10.3	6/14/2019	
10.27+	Educational Cost and Retention Agreement with Zynga Inc. and Jeff Buckley	10-Q	001-35375	10.2	10/31/2019	

21.1	List of subsidiaries	X
23.1	Consent of Independent Registered Public Accounting Firm	X
24.1	Power of Attorney (included in signature page)	X
31.1	Certification of the Chief Executive Officer of Zynga Inc. pursuant to rule 13a-14 under the Securities Exchange Act of 1934	X
31.2	Certification of the Chief Financial Officer of Zynga Inc. pursuant to rule 13a-14 under the Securities Exchange Act of 1934	X
32.1•	Certification of the Chief Executive Officer and Chief Financial Officer of Zynga Inc. pursuant to18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the interactive data file because its XBRL tags are embedded within the Inline XBRL document	
101.SCH	Inline XBRL Taxonomy Extension Schema Document	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)	

+ Indicates management contract or compensatory plan.

† Confidential treatment has been granted for certain information contained in this exhibit. Such information has been omitted and was filed separately with the Securities and Exchange Commission. Schedules and similar attachments have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The registrant hereby undertakes to provide further information regarding such omitted materials to the Commission upon request.

• The certifications attached as Exhibit 32.1 accompany this Annual Report on Form 10-K pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed “filed” by the Registrant for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized on February 28, 2020.

ZYNGA INC.

By: /s/ Frank Gibeau
Frank Gibeau
Chief Executive Officer
(On behalf of Registrant)

By: /s/ Gerard Griffin
Gerard Griffin
Chief Financial Officer
(On behalf of Registrant)

By: /s/ Jeffrey Buckley
Jeffrey Buckley
Chief Accounting Officer
(On behalf of Registrant)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Gerard Griffin and Phuong Y. Phillips, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Mark Pincus Mark Pincus	Chairman of the Board	February 28, 2020
/s/ Frank Gibeau Frank Gibeau	Chief Executive Officer and Director *(Principal Executive Officer)*	February 28, 2020
/s/ Gerard Griffin Gerard Griffin	Chief Financial Officer *(Principal Financial Officer)*	February 28, 2020
/s/ Jeffrey Buckley Jeffrey Buckley	Chief Accounting Officer *(Principal Accounting Officer)*	February 28, 2020
/s/ Regina E. Dugan Regina E. Dugan	Director	February 28, 2020
/s/ William “Bing” Gordon William “Bing” Gordon	Director	February 28, 2020
/s/ Louis J. Lavigne, Jr. Louis J. Lavigne, Jr.	Director	February 28, 2020
/s/ Carol G. Mills Carol G. Mills	Director	February 28, 2020
/s/ Janice M. Roberts Janice M. Roberts	Director	February 28, 2020
/s/ Ellen F. Siminoff Ellen F. Siminoff	Director	February 28, 2020

Exhibit 3.2

FOURTH AMENDED AND RESTATED BYLAWS
OF
ZYNGA INC.
(A DELAWARE CORPORATION)

Effective February 27, 2020

ARTICLE I
OFFICES

Section 1. Registered Office. The registered office of the corporation in the State of Delaware shall be fixed in the corporation's certificate of incorporation.

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II

CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may provide for a corporate seal. The corporate seal shall consist of a die bearing the name of the corporation and the inscription, "Corporate Seal-Delaware." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III

STOCKHOLDERS' MEETINGS

Section 4. Place Of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("***DGCL***").

Section 5. Annual Meetings.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may properly come before it, shall be held on such date, at such time, and at such place, if any, as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders (with respect to business other than nominations); (ii) brought specifically by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who (A) was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) below, on the record date for the determination of stockholders entitled to notice of the annual meeting, on the record date for the determination of stockholders entitled to vote at the annual meeting and at the time of the annual meeting; and (B) complied with the notice procedures set forth in this Section 5. For the

avoidance of doubt, clause (iii) above shall be the exclusive means for a stockholder to make nominations and submit other business (other than matters properly included in the corporation's notice of meeting of stockholders and proxy statement under Rule 14a-8 under the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the "***1934 Act***")) before an annual meeting of stockholders.

(b) At an annual meeting of the stockholders, only such business shall be conducted as is a proper matter for stockholder action under Delaware law and as shall have been properly brought before the meeting in accordance with the procedures below.

(i) For nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii) and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each nominee that such stockholder proposes to nominate at the meeting: (1) the name, age, business address and residence address of such nominee; (2) the principal occupation or employment of such nominee; (3) the class and number of shares of each class of capital stock of the corporation that are owned of record and beneficially by such nominee; (4) the date or dates on which such shares were acquired and the investment intent of such acquisition; (5) a written statement executed by the nominee acknowledging that the nominee intends to serve a full term as a director of the corporation, if elected; (6) a reasonably detailed description of any agreement, arrangement or understanding (whether oral or in writing), including any direct or indirect compensatory, payment, indemnification or other financial agreement, arrangement or understanding, that such nominee has, or has had within the past three years, with any person or entity (naming such person or entity) other than the corporation (including the amount of any payment or payments received or receivable thereunder), in each case in connection with candidacy or service as a director of the corporation (including pursuant to which such nominee has given any commitment or assurance to any person or entity as to how such nominee, if elected as a director of the corporation, will act or vote on any issue or question); (7) a completed written questionnaire with respect to the background and qualifications of such nominee (which questionnaire shall be provided by the Secretary promptly upon written request); and (8) such other information concerning such nominee as would be required to be disclosed in a proxy statement soliciting proxies for the election of such nominee as a director in an election contest (even if an election contest is not involved), or that is otherwise required to be disclosed pursuant to Section 14 of the 1934 Act (including such person's written consent to being named as a nominee and to serving as a director if elected); and (B) the information required by Section 5(b)(iv). The corporation may require any proposed nominee to furnish such other information relating to the proposed nominee's qualifications and independence as it may reasonably require, including to determine the eligibility of such proposed nominee to serve as an independent director of the corporation or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such proposed nominee. Any such information reasonably requested by the corporation must be received by the Secretary at the principal executive offices of the corporation no later than five (5) business days after the request by the corporation for such subsequent information has been made, and the failure to timely provide any such information shall render the proposed nominee ineligible for election.

(ii) For business other than nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii), and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each matter such stockholder proposes to bring before the meeting, (1) a brief description of the business desired to be brought before the meeting, (2) the text of the proposed business (including the text of any resolutions proposed for consideration and, if applicable, the text of any proposed amendment to these Bylaws), (3) the reasons for conducting such business at the meeting and (4) any material interest (including any anticipated benefit of such business to any Proponent (as defined below) other than solely as a result of its ownership of the corporation's capital stock that is material to any Proponent individually or to the Proponents in the aggregate) of any Proponent in such business; and (B) the information required by Section 5(b)(iv).

(iii) To be timely, the written notice required by Section 5(b)(i) or 5(b)(ii) must be received by the Secretary at the principal executive offices of the corporation not later than 5:00 p.m., Pacific time, on the ninetieth (90th) day nor earlier than 5:00 p.m., Pacific time, on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting as first specified in the corporation's notice of meeting (without regard to any postponements or adjournments of such meeting after such notice was first sent); *provided, however*, that, subject to the last sentence of this Section 5(b)(iii), in the event that the annual meeting is called for a date that is not within twenty-five (25) days before or after such anniversary date, notice by the stockholder to be timely must be so received not later than 5:00 p.m., Pacific time, on the tenth (10th) day following the day on which public announcement of the date of such annual meeting is first made. In no event shall an adjournment or a postponement of an annual meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.

(iv) The written notice required by Section 5(b)(i) or 5(b)(ii) shall also set forth, as of the date of the notice and as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (each, a "***Proponent***" and collectively, the "***Proponents***"): (A) the name and address of each Proponent, as they appear on the corporation's books; (B) the class, series and number of shares of the corporation that are owned beneficially and of record by each Proponent; (C) a reasonably detailed description of any agreement, arrangement or understanding (whether oral or in writing), including any direct or indirect compensatory, payment, indemnification or other financial agreements, arrangements or understandings, between any Proponent and its affiliates or associates, on the one hand, and any person or entity (naming such person or entity), on the other hand, in connection with such nomination or proposal; (D) a representation and undertaking that the Proponents are holders of record or beneficial owners, as the case may be, of shares of the corporation entitled to vote at the meeting, will continue to be holders of record of stock of the corporation entitled to vote at the meeting through the date of the meeting, and intend to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice (with respect to a notice under Section 5(b)(i)) or to propose the business that is specified in the notice (with respect to a notice under Section 5(b)(ii)); (E) a representation as to whether the Proponents intend to deliver a proxy statement and form of proxy to holders of a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (with respect to a notice under

Section 5(b)(i)) or to carry such proposal (with respect to a notice under Section 5(b)(ii)); (F) to the extent known by any Proponent, the name and address of any other stockholder supporting the proposal on the date of such stockholder's notice; (G) a description of all Derivative Transactions (as defined below) by each Proponent during the previous twelve (12) month period, including the date of the transactions and the class, series and number of securities involved in, and the material economic terms of, such Derivative Transactions; (H) a description of any significant equity interests or any Derivative Transactions in any principal competitor of the corporation held by each Proponent; (I) a description of any direct or indirect interest of each Proponent in any contract with the corporation, any affiliate of the corporation or any principal competitor of the corporation (including, in any such case, any employment agreement, collective bargaining agreement or consulting agreement); (J) a completed written questionnaire with respect to the background of each Proponent (which questionnaire shall be provided by the Secretary promptly upon written request); and (K) any other information relating to any Proponent or its affiliates or associates or others acting in concert with them, or director nominee or proposed business, that, in each case, would be required to be disclosed in a proxy statement or other filing required to be made in connection with the solicitation of proxies in support of such nominee (in a contested election of directors) or proposal pursuant to Section 14 of the 1934 Act. The corporation may require any Proponent to furnish such other information relating to the Proponent and the nomination or proposed item of business as the corporation may reasonably require, including to determine whether such proposed item of business is a proper matter for stockholder action. Any such information reasonably requested by the corporation must be received by the Secretary at the principal executive offices of the corporation no later than five (5) business days after the request by the corporation for such subsequent information has been made, and the failure to timely provide any such information shall render the proposed business ineligible for consideration at the meeting.

For purposes of Sections 5 and 6, a "Derivative Transaction" means any agreement, arrangement, interest or understanding entered into by, or on behalf or for the benefit of, any Proponent or any of its affiliates or associates, whether record or beneficial:

(w) the value of which is derived in whole or in part from the value of any class or series of shares or other securities of the corporation,

(x) that otherwise provides any direct or indirect opportunity to gain or share in any gain derived from a change in the value of securities of the corporation,

(y) the effect or intent of which is to mitigate loss, manage risk or benefit of security value or price changes, or

(z) that provides the right to vote or increase or decrease the voting power of such Proponent, or any of its affiliates or associates, with respect to any securities of the corporation,

which agreement, arrangement, interest or understanding may include, without limitation, any option, warrant, debt position, note, bond, convertible security, swap, stock appreciation right, short position, profit interest, hedge, right to dividends, voting agreement, performance-related fee or arrangement to borrow or lend shares (whether or not subject to payment, settlement, exercise or conversion in any such class or series), any proportionate interest of such Proponent in the securities of the corporation held by any general or limited partnership, or any limited liability company, of which such Proponent is, directly or indirectly, a general partner or

managing member, and any performance-related fees (other than an asset-based fee) that any Proponent is entitled to based on any increase or decrease in the value of shares of the corporation or any Derivative Transaction.

(c) A stockholder providing written notice required by Section 5(b)(i) or (ii) shall update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for the meeting and (ii) the date that is five (5) business days prior to the meeting and, in the event of any adjournment or postponement thereof, five (5) business days prior to such adjourned or postponed meeting. In the case of an update and supplement pursuant to clause (i) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than five (5) business days after the record date for the meeting. In the case of an update and supplement pursuant to clause (ii) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than two (2) business days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two (2) business days prior to such adjourned or postponed meeting.

(d) Notwithstanding anything in Section 5(b)(iii) to the contrary, in the event that the number of directors of the Board of Directors is increased and there is no public announcement of the appointment of a director, or, if no appointment was made, of the vacancy, made by the corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination in accordance with Section 5(b)(iii), a stockholder's notice required by this Section 5 and that complies with the requirements in Section 5(b)(i), other than the timing requirements in Section 5(b)(iii), shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be received by the Secretary at the principal executive offices of the corporation not later than 5:00 p.m., Pacific time, on the tenth (10th) day following the day on which such public announcement is first made by the corporation.

(e) A person shall not be eligible for election as a director at an annual meeting unless the person is nominated either in accordance with clause (ii) of Section 5(a) or clause (iii) of Section 5(a). Except as otherwise required by law, the chairperson of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws, and if any proposed nomination or business is not in compliance with these Bylaws, or the Proponent does not act in accordance with the representations in Sections 5(b)(iv)(D) and 5(b)(iv)(E), to declare that such proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded, notwithstanding that proxies in respect of such nominations or such business may have been solicited or received.

(f) Notwithstanding the foregoing provisions of this Section 5, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided*, *however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall

not limit the requirements applicable to proposals to be considered pursuant to Section 5(a)(iii) of these Bylaws.

(g) For purposes of Sections 5 and 6:

(i) "***public announcement***" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act; and

(ii) "***affiliates***" and "***associates***" shall have the meanings set forth in Rule 405 under the Securities Act of 1933, as amended (the "***1933 Act***").

Section 6. Special Meetings.

(a) General. Special meetings of the stockholders of the corporation may be called, for any purpose as is a proper matter for stockholder action under Delaware law, by (i) the Chairperson of the Board of Directors, (ii) the Chief Executive Officer, (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time that any such resolution is presented to the Board of Directors for adoption) or (iv) the Chairperson of the Board of Directors or the Chief Executive Officer at the written request of one or more stockholders of record who have (or who are acting on behalf of beneficial owners who have) an aggregate net long position (as determined below) of not less than 30% of the outstanding shares of capital stock of the corporation as of the Ownership Record Date (as defined below), it being understood that each such stockholder of record (or beneficial owner directing such stockholder of record) must have held such individual's net long position included in such aggregate amount continuously for the one-year period ending on the Ownership Record Date and must continue to hold such net long position through the date of the conclusion of the special meeting (such aggregate net long position held for the requisite period, the "***Required Percentage***").

For purposes of this Section 6 and for determining the Required Percentage, net long position shall be determined in accordance with Rule 14e-4 under the 1934 Act with respect to each stockholder requesting a special meeting and each beneficial owner who is directing a stockholder to act on such owner's behalf (each stockholder and beneficial owner, a "***party***"), provided that (x) for purposes of such definition, in determining such party's "short position," the reference in Rule 14e-4 to "the date that a tender offer is first publicly announced or otherwise made known by the bidder to holders of the security to be acquired" shall be the Ownership Record Date (as defined below), and the reference to the "highest tender offer price or stated amount of the consideration offered for the subject security" shall refer to the closing sales price of the corporation's common stock on the Nasdaq Global Select Market (or such other securities exchange designated by the Board of Directors if the common stock is not listed for trading on the Nasdaq Global Select Market) on such record date (or, if such date is not a trading day, the next succeeding trading day) and (y) the net long position of such party shall be reduced by the number of shares of the corporation's common stock as to which the Board of Directors determines that such party does not, or will not, have the right to vote or direct the voting of at the special meeting or as to which the Board of Directors determines that such party has entered into any derivative or other agreement, arrangement or understanding that hedges or transfers, in whole or in part, directly or indirectly, any of the economic consequences of ownership of such shares.

(b) Written Requests to Call a Special Meeting.

(i) General. Each written request to call a special meeting shall be delivered to the Secretary of the corporation and shall include the following: (1) the signature of the stockholder of record submitting such request and the date that such request was signed; (2) the text of each business proposal desired to be submitted for stockholder approval at the special meeting (including the text of any resolutions proposed for consideration and, if applicable, the text of any proposed amendment to these Bylaws); and (3) as to the beneficial owner, if any, directing such record stockholder to sign the written request to call a special meeting and as to such record stockholder (unless such record stockholder is acting solely as a nominee for a beneficial owner) (each such beneficial owner and each record stockholder who is not acting solely as a nominee, a "***Disclosing Party***"):

(w) the name and address of each Disclosing Party;

(x) all of the information required to be disclosed pursuant to Section 5(b)(iv) (which information shall be supplemented by each Disclosing Party not later than ten (10) days after the record date for determining the record stockholders entitled to notice of the special meeting (such record date, the "***Meeting Record Date***") to disclose the foregoing information as of the Meeting Record Date and as of the date that is ten (10) days prior to the special meeting or any adjournment or postponement thereof, which shall be received by the Secretary not later than the fifth (5th) day before the special meeting);

(y) with respect to each business proposal to be submitted for stockholder approval at the special meeting, a representation as to whether any Disclosing Party will deliver a proxy statement and form of proxy to holders of at least the percentage of voting power of all of the shares of capital stock of the corporation required under applicable law to carry such proposal (such statement, a "***Solicitation Statement***"); and

(z) any additional information necessary to verify the net long position of such Disclosing Party (including such information for the one-year period prior to the Ownership Record Date).

Each time that a Disclosing Party's net long position decreases following the delivery of the foregoing information to the Secretary, such Disclosing Party shall notify the corporation of his, her or its decreased "net long position," together with all information necessary to verify such position, within ten (10) days of such decrease or as of the fifth (5th) day before the special meeting, whichever is earlier.

(ii) Beneficial Owners. A beneficial owner who wishes to deliver a written request to call a special meeting must cause the nominee or other person who serves as the stockholder of record of such beneficial owner's stock to sign the written request to call a special meeting. If a stockholder of record is the nominee for more than one beneficial owner of stock, then the stockholder of record may deliver a written request to call a special meeting solely with respect to the common stock of the corporation owned by the beneficial owner who is directing the record stockholder to sign such written request to call a special meeting.

(iii) Ownership Record Date. Any stockholder of record (whether acting for him, her or itself, or at the direction of a beneficial owner) shall, by written notice to the Secretary, demand that the Board of Directors fix a record date to determine the stockholders who are entitled to

deliver a written request to call a special meeting (such record date, the "***Ownership Record Date***"). A written demand to fix an Ownership Record Date shall include all of the information that must be included in a written request to call a special meeting as of the date of the demand for the record date, as set forth in this Section 6(b). The Board of Directors may fix the Ownership Record Date within ten (10) days of the Secretary's receipt of a valid demand to fix the Ownership Record Date. The Ownership Record Date shall not precede, and shall not be more than ten (10) days after, the date upon which the resolution fixing the Ownership Record Date is adopted by the Board of Directors. If an Ownership Record Date is not fixed by the Board of Directors, then the Ownership Record Date shall be the date that the first written request to call a special meeting is received by the Secretary with respect to the proposed business to be submitted for stockholder approval at a special meeting.

(iv) Invalid Requests. The Secretary shall not accept, and shall consider ineffective, a written request to call a special meeting:

(v) that does not comply with the preceding provisions of this Section 6;

(w) that relates to an item of business that is not a proper subject for stockholder action under applicable law;

(x) that is received by the Secretary (1) later than the sixtieth (60th) day after the earliest date that a written request to call a special meeting was received by the Secretary relating to an identical or substantially similar item (such item, a "***Similar Item***") and (2) before the one-year anniversary of such earliest date;

(y) if a Similar Item will be submitted for stockholder approval at any stockholder meeting to be held on or before the ninetieth (90th) day after the Secretary receives such written request to call a special meeting; or

(z) if a Similar Item has been presented at the most recent annual meeting or at any special meeting held within one year prior to receipt by the Secretary of such written request to call a special meeting.

(v) Revocations.

(x) A record stockholder may revoke a request to call a special meeting at any time before the special meeting by sending written notice of such revocation to the Secretary.

(y) All written requests for a special meeting shall be deemed revoked:

(1) upon the first date that, after giving effect to revocation(s) and notices of net long position decreases (pursuant to Section 6(b)(v)(x) and the final sentence of Section 6(b)(i), respectively), the aggregate net long position of all of the Disclosing Parties who are listed on the unrevoked written requests to call a special meeting with respect to a Similar Item decreases to a number of shares of the corporation's common stock less than the Required Percentage;

(2) if any Disclosing Party who has provided a Solicitation Statement with respect to any business proposal to be submitted for stockholder approval at such special meeting does not act in accordance with the representations set forth therein; or

(3) if any Disclosing Party does not timely provide the supplemental information required by Section 6(b)(i).

(z) If a deemed revocation of all written requests to call a special meeting has occurred after the special meeting has been called by the Secretary, then the Board of Directors shall have the discretion to determine whether or not to proceed with the special meeting.

(c) Director Nominations. Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected by (i) or at the direction of the Board of Directors or (ii) any stockholder of the corporation was a stockholder of record at the time of giving the stockholder's notice provided for in this Section 6(c), who shall be entitled to vote at the meeting and who delivers written notice to the Secretary of the corporation setting forth the information required by Section 5(b)(i). In the event that the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder of record may nominate a person or persons (as the case may be) for election to such position(s) as specified in the corporation's notice of meeting if written notice setting forth the information required by Section 5(b)(i) and Section 5(b)(iv) of these Bylaws shall be received by the Secretary at the principal executive offices of the corporation not later than the 5:00 p.m., Pacific time, on the tenth (10th) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. The stockholder shall also update and supplement such information as required under Section 5(c). In no event shall an adjournment or a postponement of a special meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.

(d) Miscellaneous.

(i) For a special meeting called pursuant to Section 6(a), the Board of Directors shall determine the time and place, if any, of such special meeting. Upon determination of the time and place, if any, of the meeting, the Secretary shall cause a notice of meeting to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. The Board of Directors may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders. No business may be transacted at a special meeting other than as specified in the notice of meeting.

(ii) Notwithstanding the foregoing provisions of this Section 6, a stockholder must also comply with all applicable requirements of the 1934 Act with respect to matters set forth in this Section 6. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided*, *however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to nominations for the election to the Board of Directors or proposals of other business to be considered pursuant to Section 6(c) of these Bylaws.

Section 7. Notice Of Meetings. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if

any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof, or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by their attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

Section 8. Quorum; Voting. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the voting power of the shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairperson of the meeting or by vote of the holders of a majority of the voting power of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute, by applicable stock exchange rules, by the Certificate of Incorporation or by these Bylaws, in all matters other than the election of directors, the affirmative vote of the holders of a majority of the voting power of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, by the Certificate of Incorporation or by these Bylaws, a nominee for director shall be elected to the Board of Directors if the votes cast for such nominee's election exceed the votes cast against such nominee's election; *provided*, *however*, that directors shall be elected by a plurality of the votes cast at any meeting of stockholders for which (a) (i) the Secretary receives a notice that a stockholder has nominated a person for election to the Board of Directors in compliance with the advance notice requirements for stockholder nominees set forth in Article III, Section 5(b) or Article III, Section 6(c), as applicable, of these Bylaws; and (ii) such nomination has not been withdrawn by such stockholder on or before the fourteenth (14th) day prior to the date that the corporation files its definitive proxy statement (regardless of whether or not thereafter revised or supplemented) with the Securities and Exchange Commission; or (b) the number of director nominees otherwise exceeds the number of directors to be elected at such meeting. If directors are to be elected by a plurality of the votes cast, stockholders shall not be permitted to vote against a nominee. Where a separate vote by a class or classes or series is required, except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. With respect to the election of directors only, "abstentions", "withholds" and "broker non-votes," if any, although counted for quorum purposes, shall not be included in the total number of votes cast or be counted as votes for or against any nominee's election.

Section 9. Adjournment And Notice Of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairperson of the meeting or by the vote of holders of a majority of the voting power of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date shall be entitled to vote at any meeting of stockholders. Every person entitled to vote or execute consents shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three (3) years from its date of creation unless the proxy provides for a longer period.

Section 11. Action Without Meeting. Except as provided in the Certificate of Incorporation, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

Section 12. Organization.

(a) At every meeting of stockholders, the chairperson of the meeting shall be designated by the Board of Directors. In the absence of such designation, the Chairperson of the Board of Directors, or, if a Chairperson has not been appointed or is absent or so chooses, the Chief Executive Officer, or if no Chief Executive Officer is then serving or is absent, the President, or, if the President is absent, a chairperson of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairperson. The Secretary, or, in his or her absence, an Assistant Secretary or other officer or other person directed to do so by the chairperson of the meeting, shall act as secretary of the meeting.

(b) The Board of Directors shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairperson of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairperson, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairperson shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The

date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairperson of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV
DIRECTORS

Section 13. Number And Term Of Office. The authorized number of directors of the corporation shall be fixed in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

Section 14. Powers. The powers of the corporation shall be exercised, its business conducted and its property controlled by the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 15. Board of Directors. Directors shall be elected at each annual meeting of stockholders to hold office until the next annual meeting. Each director shall hold office either until the expiration of the term for which elected or appointed and a successor has been elected and qualified, or until such director's earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Section 16. Vacancies. Unless otherwise provided in the Certificate of Incorporation and subject to the rights of the holders of any series of Preferred Stock or as otherwise provided by applicable law, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors or by a sole remaining director. Except (i) as otherwise provided by applicable law or (ii) as may be otherwise determined by the Board of Directors by resolution and subject to the rights of the holders of any series of Preferred Stock, any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Section 16 in the case of the death, removal or resignation of any director.

Section 17. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time. If no such specification is made, the Secretary, in his or her discretion, may either (a) require confirmation from the director prior to deeming the resignation effective, in which case the resignation will be deemed effective upon receipt of such confirmation, or (b) deem the resignation effective at the time of delivery of the resignation to the Secretary. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those

who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his successor shall have been duly elected and qualified.

Section 18. Removal. Subject to any requirements set forth in the Certificate of Incorporation, the Board of Directors or any individual director may be removed from office at any time with or without cause by the affirmative vote of the holders of a majority of the voting power of all the then-outstanding shares of capital stock of the corporation, entitled to vote generally at an election of directors.

Section 19. Meetings.

(a) Regular Meetings. Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors; *provided* that each member of the Board of Directors must receive written notice of any regular Board meeting at which any CEO Succession Matter is acted upon no less than seventy-two (72) hours prior to such meeting and such written notice shall include a detailed description of the CEO Succession Matter; for the purposes of this sentence only, notice shall be deemed "received" by a director when delivered personally, telecopied (with confirmation) or delivered by an overnight courier (with confirmation) to the directors at their addresses appearing in the books and records of the corporation (the "***Succession Matter Notice Requirements***"). A "***CEO Succession Matter***" shall mean any matter before the Board of Directors or any committee thereof concerning the hiring, termination, retention or compensation of the Chief Executive Officer of the corporation. Without limitation, such matters shall include any action which would (i) interpret any provision of any employment agreement between the Chief Executive Officer and the corporation; (ii) approve any action that would constitute a constructive termination of the Chief Executive Officer or permit the Chief Executive Officer to terminate employment with the corporation for good reason or other similar cause under any employment or other agreement between the Chief Executive Officer and the corporation; (iii) determine that the Chief Executive Officer may be terminated for cause or other similar reason under the terms of any employment or other agreement between the Chief Executive Officer and the corporation, or otherwise; (iv) determine that the Chief Executive Officer is disabled or otherwise unable to perform his or her job functions; (v) determine to withhold any salary, benefits, incentives, equity compensation, termination benefits, retirement benefits, perquisites, change in control payments or other similar payments, or any other compensation under any agreement between the Chief Executive Officer and the corporation; (vi) terminate the Chief Executive Officer without cause; (vii) reduce the benefits or compensation of the Chief Executive Officer, including bonus target or terms; or (viii) approve of any Chief Executive Officer succession plan or similar measure.

(b) Special Meetings. Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairperson of the Board, the Chief Executive Officer or a majority of the total number of authorized directors.

(c) Meetings by Electronic Communications Equipment. Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) Notice of Special Meetings. Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting; provided that each member of the Board of Directors must receive written notice that meets the Succession Matter Notice Requirements of any special meeting at which any CEO Succession Matter is discussed or acted upon no less than seventy-two (72) hours prior to such meeting and such written notice shall include a description of the CEO Succession Matter. If notice is sent by U.S. mail, it shall be sent by first class mail, charges prepaid, at least three (3) days before the date of the meeting. Notice of any meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) Waiver of Notice. The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though it had been transacted at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 20. Quorum And Voting.

(a) Unless the Certificate of Incorporation requires a greater number, and except with respect to questions related to indemnification arising under Section 39 for which a quorum shall be one-third of the exact number of directors fixed from time to time, a quorum of the Board of Directors shall consist of a majority of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; provided, however, at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

Section 21. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by

electronic transmission. After an action is taken, the consent or consents relating thereto shall be filed with the minutes of proceedings of the Board of Directors or committee.

Section 22. Fees And Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 23. Committees.

(a) Executive Committee. The Board of Directors may appoint an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in a resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the corporation.

(b) Other Committees. The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) Term. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of subsections (a) or (b) of this Section 23, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his death, removal or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section 23 shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no

further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any Director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notwithstanding the foregoing, each member of the Board of Directors must receive written notice that meets the Succession Matter Notice Requirements of any regular or special meeting at which any CEO Succession Matter is discussed or acted upon no less than seventy-two (72) hours prior to such meeting and such written notice shall include a description of the CEO Succession Matter. Notice of any special meeting of any committee may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 24. Organization. At every meeting of the directors, the Chairperson of the Board of Directors, or, if a Chairperson has not been appointed or is absent, the Chief Executive Officer (if a director), or, if a Chief Executive Officer is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairperson of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his absence, any Assistant Secretary or other officer, director or other person directed to do so by the chairperson, shall act as secretary of the meeting.

Section 25. Duties of Chairperson of the Board of Directors. The Chairperson of the Board of Directors, when present, shall preside at all meetings of the Board of Directors. The Chairperson of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The Chairperson shall be appointed by the Board of Directors and may be removed at any time by the Board of Directors.

ARTICLE V
OFFICERS

Section 26. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer, the Chief Technology Officer and the Treasurer. The Board of Directors may also appoint one or more Assistant Secretaries and Assistant Treasurers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors or committee thereof to which the Board of Directors has delegated such responsibility.

Section 27. Tenure And Duties Of Officers.

(a) General. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors.

(b) Duties of Chief Executive Officer. The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors (if a director), unless the Chairperson of the Board of Directors has been appointed, is present and has not appointed the Chief Executive Officer as chairperson. The Chief Executive Officer shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. To the extent that a Chief Executive Officer has been appointed and no President has been appointed, all references in these Bylaws to the President shall be deemed references to the Chief Executive Officer. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(c) Duties of President. The President shall preside at all meetings of the stockholders and at all meetings of the Board of Directors (if a director), unless the Chairperson of the Board of Directors or the Chief Executive Officer has been appointed and is present. Unless another officer has been appointed Chief Executive Officer of the corporation, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors (or the Chief Executive Officer, if the Chief Executive Officer and President are not the same person and the Board of Directors has delegated the designation of the President's duties to the Chief Executive Officer) shall designate from time to time.

(d) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant (unless the duties of the President are being filled by the Chief Executive Officer). The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or, if the Chief Executive Officer has not been appointed, the President shall designate from time to time.

(e) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The Chief Executive Officer, or if no Chief Executive Officer is then serving, the President, may direct any Assistant Secretary or other officer to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties

commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President shall designate from time to time.

(f) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President, shall designate from time to time. To the extent that a Chief Financial Officer has been appointed and no Treasurer has been appointed, all references in these Bylaws to the Treasurer shall be deemed references to the Chief Financial Officer. The President may direct the Treasurer, if any, or any Assistant Treasurer, or the controller or any assistant controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each controller and assistant controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(g) Duties of Chief Technology Officer. The Chief Technology Officer shall have responsibility for the general research and development activities of the corporation, for supervision of the corporation's research and development personnel, for new product development and product improvements, for overseeing the development and direction of the corporation's intellectual property development and such other responsibilities as may be given to the Chief Technology Officer by the Board of Directors, subject to: (a) the provisions of these Bylaws; (b) the direction of the Board of Directors; and (c) the supervisory powers of the Chief Executive Officer of the corporation.

(h) Duties of Treasurer. Unless another officer has been appointed Chief Financial Officer of the corporation, the Treasurer shall be the chief financial officer of the corporation and shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President, and, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Treasurer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors, the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President, and the Chief Financial Officer (if not the Treasurer) shall designate from time to time.

Section 28. Delegation Of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 29. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the Chief Executive Officer, or if no Chief

Executive Officer is then serving, the President, or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 30. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or by the Chief Executive Officer or by other superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 31. Execution of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name without limitation, or to enter into contracts on behalf of the corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation.

All checks and drafts drawn on banks or other depositaries on funds to the credit of the corporation or in special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 32. Voting Of Securities Owned By The Corporation. All stock and other securities of other corporations or entities owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, all proxies with respect thereto shall be executed and all rights incident to any management authority conferred on the corporation in accordance with the governing documents of such corporation or entity shall be exercised by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairperson of the Board of Directors, the Chief Executive Officer, the President or any Vice President.

ARTICLE VII

SHARES OF STOCK

Section 33. Form And Execution Of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated if so provided by resolution or resolutions of the Board of Directors, but any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Certificates for the shares of stock, if any, shall be in such form as is consistent with the Certificate of Incorporation and

applicable law. Every holder of stock in the corporation represented by certificate shall be entitled to have a certificate signed by or in the name of the corporation by any two officers of the corporation, representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 34. Lost Certificates. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 35. Transfers.

(a) Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(b) The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

Section 36. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 37. Execution Of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 33), may be signed by the Chairperson of the Board of Directors, the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided*, *however*, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted

facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

FISCAL YEAR

Section 38. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE X

INDEMNIFICATION

Section 39. Indemnification of Directors, Executive Officers, Other Officers, Employees and Other Agents.

(a) Directors and Executive Officers. The corporation shall indemnify its directors and executive officers (for the purposes of this Article X, "***executive officers***" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the extent not prohibited by the DGCL or any other applicable law; *provided*, *however*, that the corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, *provided*, *further*, that the corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d).

(b) Other Officers, Employees and Other Agents. The corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer, of the corporation, or is or was serving at the request of the corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding *provided*, *however*, that if the DGCL requires, an advancement of expenses

incurred by a director or executive officer in his or her capacity as a director or executive officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking (hereinafter an "***undertaking***"), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal (hereinafter a "***final adjudication***") that such indemnitee is not entitled to be indemnified for such expenses under this section or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (d) of this section, no advance shall be made by the corporation to an executive officer of the corporation (except by reason of the fact that such executive officer is or was a director of the corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority vote of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Bylaw shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or executive officer. Any right to indemnification or advances granted by this section to a director or executive officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. To the extent permitted by law, the claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the corporation) for advances, the corporation shall be entitled to raise a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a

defense to the action or create a presumption that claimant has not met the applicable standard of conduct. In any suit brought by a director or executive officer to enforce a right to indemnification or to an advancement of expenses hereunder, the burden of proving that the director or executive officer is not entitled to be indemnified, or to such advancement of expenses, under this section or otherwise shall be on the corporation.

(e) Non-Exclusivity of Rights. The rights conferred on any person by this Bylaw shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) Survival of Rights. The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director or executive officer or officer, employee or other agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) Insurance. To the fullest extent permitted by the DGCL or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this section.

(h) Amendments. Any repeal or modification of this section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) Saving Clause. If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this section that shall not have been invalidated, or by any other applicable law. If this section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and executive officer to the full extent under any other applicable law.

(j) Certain Definitions. For the purposes of this Bylaw, the following definitions shall apply:

(i) The term "***proceeding***" shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(ii) The term "***expenses***" shall be broadly construed and shall include, without limitation, court costs, attorneys' fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(iii) The term the "***corporation***" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another

corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(iv) References to a "***director***," "***executive officer***," "***officer***," "***employee***," or "***agent***" of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(v) References to "***other enterprises***" shall include employee benefit plans; references to "***fines***" shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "***serving at the request of the corporation***" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "***not opposed to the best interests of the corporation***" as referred to in this section.

ARTICLE XI
NOTICES

Section 40. Notices.

(a) Notice To Stockholders. Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 herein. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by U.S. mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) Notice To Directors. Any notice required to be given to any director may be given by the method stated in subsection (a), as otherwise provided in these Bylaws, or by overnight delivery service, facsimile, telex or telegram, except that such notice other than one which is delivered personally shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) Affidavit Of Mailing. An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be *prima facie* evidence of the facts therein contained.

(d) Methods of Notice. It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) Notice To Person With Whom Communication Is Unlawful. Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to

such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) Notice to Stockholders Sharing an Address. Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within sixty (60) days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XII
AMENDMENTS

Section 41. Amendments. Subject to the limitations set forth in Section 39(h) of these Bylaws or the provisions of the Certificate of Incorporation, the Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the corporation. Any adoption, amendment or repeal of the Bylaws of the corporation by the Board of Directors shall require the approval of a majority of the authorized number of directors. The stockholders also shall have power to adopt, amend or repeal the Bylaws of the corporation; *provided*, *however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least a majority of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIII

LOANS TO OFFICERS

Section 42. Loans To Officers. Except as otherwise prohibited by applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

Exhibit 4.4

DESCRIPTION OF THE COMPANY'S SECURITIES

The following description of the capital stock of Zynga Inc. ("us," "our," "we" or the "Company") is a summary of the rights of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws currently in effect. This summary does not purport to be complete and is qualified in its entirety by the provisions of our amended and restated certificate of incorporation and amended and restated bylaws, which were previously filed and concurrently filed, respectively, with the Securities and Exchange Commission and incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.2 is a part, as well as to the applicable provisions of the Delaware General Corporation Law (the "DGCL"). For a complete description of our capital stock, we encourage you to read our certificate of incorporation, bylaws and the applicable portions of the DGCL carefully.

Our classes of common stock previously consisted of Class A, Class B and Class C common stock. On May 2, 2018, our founder, Mark Pincus, elected to convert certain outstanding shares of Class B common stock and all outstanding shares of Class C common stock, in each case, controlled by Mr. Pincus and an affiliated investment entity, into an equivalent number of shares of Class A common stock (hereinafter, the "common stock"). As a result of Mr. Pincus' conversion, the remaining shares of Class B common stock represented less than 10 percent of the total voting power of all Zynga stockholders and, accordingly, each remaining outstanding share of Class B common stock automatically converted into one share of common stock. Following the conversion, no shares of Class B or Class C common stock were outstanding.

Our authorized capital stock consists of 2,020,517,472 shares of common stock, $0.00000625 par value and 2,000,000 shares of undesignated preferred stock, $0.00000625 par value. As of December 31, 2019, there were 950,042,400 shares of our common stock outstanding and no shares of preferred stock outstanding. As of December 31, 2019, there were approximately 567 stockholders of record of our common stock. The number of record holders does not include beneficial holders who hold their shares in "street name," meaning that the shares are held for their accounts by a broker or other nominee.

Common Stock

The following are the rights and privileges of our common stock:

Dividends. The holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available at the times and in the amounts which our board of directors may determine.

Voting Rights. Holders of our common stock are entitled to one vote per share.

Liquidation. Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock.

Preemptive or Similar Rights. Our common stock has no preemptive or redemption rights.

Conversion. Our common stock is not convertible into any other shares of our capital stock.

Preferred Stock

Under our amended and restated certificate of incorporation, our board of directors, without further action by our stockholders, is authorized to issue shares of preferred stock in one or more series. Our board of directors may designate the powers, designations, preferences and relative, participation, optional or other rights, if any, and the qualifications, limitations or restrictions thereof, if any, including without limitation dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including any sinking fund provisions), redemption price or prices and liquidation preferences. The issuance of preferred stock could have the effect of restricting dividends on our common stock, diluting the voting power of our common stock, impairing the liquidation rights of our common stock, or delaying or preventing a change in control. The ability to issue preferred stock could delay or impede a change in control. As of the date of this offering memorandum, no shares of preferred stock were outstanding, and we currently have no plan to issue any shares of preferred stock.

Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws may have the effect of delaying, deterring or discouraging another party from acquiring control of us.

Delaware Law

We are subject to Section 203 of the DGCL, which regulates, subject to some exceptions, acquisitions of publicly-held Delaware corporations. In general, Section 203 prohibits us from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date the person becomes an interested stockholder, unless:

- our board of directors approves the business combination or the transaction in which the person became an interested stockholder prior to the date the person attained this status;
- upon consummation of the transaction that results in the person becoming an interested stockholder, the person owned at least 85 percent of our voting stock outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers and shares owned by employee stock plans under which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date the person became an interested stockholder, our board of directors approves the business combination and the stockholders other than the interested stockholder authorize the transaction at an annual or special meeting of stockholders by the affirmative vote of at least two-thirds of the outstanding stock not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include:

- any merger or consolidation involving us and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10 percent or more of either the aggregate market value of our assets or the aggregate market value of our outstanding stock;
- any transaction that results in the issuance or transfer by us of any of our stock to the interested stockholder;
- any transaction involving us that has the effect of increasing the proportionate share of our stock owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges, or other financial benefits provided by or through us.

In general, Section 203 defines an "interested stockholder" as any person who, together with the person's affiliates and associates, owns, or, in some circumstances, within three years prior to the time of determination of interested stockholder status did own, 15 percent or more of a corporation's voting stock.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaw Provisions

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could depress the market price of our common stock by acting to discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions, among other things, include:

- authorizing "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- limiting the liability of, and providing indemnification to, our directors and officers;
- limiting the ability of our stockholders to call and bring business before special meetings and to take action by written consent in lieu of a meeting;

- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors; and
- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings.

Transfer Agent and Registrar

American Stock Transfer & Trust Company is the transfer agent and registrar for our common stock.

Exchange Listing

Our common stock is listed on The Nasdaq Global Select Market under the symbol “ZNGA.”

ZYNGA INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

AS AMENDED AUGUST 20, 2019

On August 20, 2019, the Compensation Committee of the Board of Directors (the "***Board***") of Zynga Inc. (the "***Company***") approved this amended and restated compensation policy (the "***Policy***") for non-employee directors of the Company.

The Policy will become effective as of the amendment date (set forth above).

For purposes of this Policy, a "***Non-Employee Director***" is a director who is not serving as an employee or executive officer of the Company or its affiliates (even if such individual may be otherwise be providing services to the Company or its affiliates in a capacity other than as a director).

Each Non-Employee Director will be eligible to receive compensatory equity awards under the Company's 2011 Equity Incentive Plan (the "***Plan***") as consideration for service on the Board. All compensation payable under this policy (such compensation, "***Board Compensation***"), including cash payments, grants of restricted stock units of Class A Common Stock of the Company ("***ZSUs***") or deferred equity grants will be made automatically in accordance with the terms of this Policy and the Plan, without the need for any additional corporate action by the Board or the Compensation Committee. Vesting of all ZSUs granted under this Policy is subject to the Non-Employee Director's Continuous Service (as defined in the Plan) from the date of grant through each applicable vesting date. Each ZSU granted under this Policy will be subject to the Company's standard form of Restricted Stock Unit Agreement, as most recently adopted by the Board for use under this Policy. Each Non-Employee Director will be eligible to defer all or part of his or her Board Compensation in accordance with Section 4 and forgo all or part of his or her Board Compensation in accordance with Section 5.

1. **Base Annual Retainer.** Each year, subject to Section 3, Section 4 and Section 5, each Non-Employee Director will be paid an annual retainer of $250,000 (as may be adjusted pursuant to Section 3, the "***Base Annual Retainer***"). The Base Annual Retainer will be paid 20% in cash and 80% in ZSUs. Subject to Section 4 and Section 5, the ZSU portion of the Base Annual Retainer will be granted on the date that such Non-Employee Director is elected or appointed to the Board (the "***Base Annual Retainer Vesting Start Date***"). The number of ZSUs granted will be calculated using the Fair Market Value (as defined in the Plan) of the Class A common stock of the Company as of the Base Annual Retainer Vesting Start Date, rounded down to the nearest whole ZSU. Subject to Section 3, the ZSU portion of the Base Annual Retainer will vest as follows: 25% of the granted ZSUs will vest every three months from the Base Annual Retainer Vesting Start Date, with the remainder vesting upon the earlier of (i) the one-year anniversary of the date of the most recent regular annual meeting of the Company's stockholders (the "***Annual Meeting***") or (ii) the date of the next Annual Meeting, subject to the applicable Non-Employee Director's Continuous Service through each vesting date. The cash portion of the Base Annual Retainer will be paid on a quarterly basis in accordance with the vesting schedule of the ZSU portion of the Base Annual Retainer and shall also be subject to the applicable Non-Employee Director's Continuous Service through each vesting date.

2. **Additional Annual Retainers.**

(a) Each year, subject to Section 3, Section 4 and Section 5, each Non-Employee Director who serves in one of the following roles will be paid the applicable additional annual retainer set forth below:

Role of Non-Employee Director	**Amount**
Chairperson of the Audit Committee	$50,000
Chairperson of the Compensation Committee	$35,000
Chairperson of the Nominating and Corporate Governance Committee	$15,000
Lead Independent Director	$50,000
Chairperson of the Board	$100,000
Non-Chair Member of the Audit Committee	$20,000
Non-Chair Member of the Compensation Committee	$15,000
Non-Chair Member of the Nominating and Corporate Governance Committee	$5,000

(b) Each of the additional annual retainers set forth above will be paid 100% in cash. Subject to Section 3, each of the additional annual retainers set forth above will be paid on a quarterly basis as follows: 25% of the annual retainer will be paid every three months from the date that such Non-Employee Director is appointed, with the remainder be paid upon the earlier of (i) the one-year anniversary of the date of the most recent Annual Meeting or (ii) the date of the next Annual Meeting, subject to the applicable Non-Employee Director's Continuous Service through each date.

(c) Notwithstanding the foregoing, the Compensation Committee will have the discretion to provide additional compensation to Non-Employee Directors who may be appointed from time to time to serve on any special/non-standing committee of the Board in amounts and form, and on such other terms, as reasonably determined and approved by the Compensation Committee of the Board.

3. **Pro-Ration of Retainers**.

(a) **Base Annual Retainer**. If a Non-Employee Director is elected or appointed to the Board at any time other than at an Annual Meeting, the Base Annual Retainer for the initial term that lasts from the date of election or appointment until the first Annual Meeting to occur thereafter will be reduced on a pro-rata basis, such that the amount payable will be equal to the Base Annual Retainer multiplied by a fraction, the numerator of which is 12 minus the whole number of months from the date of the preceding Annual Meeting until the date of election or appointment and the denominator of which is 12. Subject to Section 4 and Section 5, the ZSU portion of the prorated Base Annual Retainer will be granted on the Base Annual Retainer Vesting Start Date. The number of ZSUs granted will be calculated using the Fair Market Value (as defined in the Plan) of the Class A common stock of the Company as of the Base Annual Retainer Vesting Start Date, rounded down to the nearest whole ZSU.

(b) **Additional Annual Retainers**. If a Non-Employee Director is first appointed to serve in any of the roles set forth in Section 2 at any time other than at an Annual Meeting, the applicable annual retainer for the initial term that lasts from the date of appointment until the first Annual Meeting to occur thereafter will be reduced on a pro-rata basis, such that the amount payable will be equal to the applicable additional annual retainer multiplied by a fraction, the numerator of which is 12 minus the whole number of months from the date of the preceding Annual Meeting until the date of appointment and the denominator of which is 12.

(c) **Vesting Schedule**.

(i) The ZSU portion of any pro-rated Base Annual Retainer and other pro-rated annual retainer that is subject to vesting requirements (each, a "***Vesting Retainer***") will vest as follows. First, calculate the number of ZSUs subject to each "ZSU Vesting Installment". The ZSU Vesting Installment for a grant of ZSUs for the ZSU portion of a pro-rated Base Annual Retainer to a given Non-Employee Director shall be equal to 25% of the number of ZSUs (rounded down to the nearest whole ZSU) that would have been granted to the Non-Employee Director if such Non-Employee Director had been eligible to receive a non-prorated Base Annual Retainer, using the Fair Market Value (as defined in the Plan) of the Class A common stock of the Company as of such Non-Employee Director's Base Annual Retainer Vesting Start Date. A number of ZSUs equal to the ZSU Vesting Installment shall vest on each date that the ZSU portion of a non-prorated Base Annual Retainer vests under Section 1 above during the period commencing on the date of the Non-Employee Director's election or appointment to the Board and ending on the date of the earlier of (i) the one-year anniversary of the most recent Annual Meeting, or (ii) the next Annual Meeting; *provided however*, that if the period between the date of election or appointment and the first vesting date is less than 3 months, the number of ZSUs that vest on such first vesting date will be equal to the total number of ZSUs granted minus the total number of ZSUs that will vest for each subsequent vesting date until (and including) the earlier of (i) the one-year anniversary of the most recent Annual Meeting, or (ii) the next Annual Meeting.

(ii) The cash portion of any Vesting Retainer will be paid as follows: 25% of the value of the portion of the full Vesting Retainer paid in cash will be paid on each date that the cash portion of the Vesting Retainer would have been paid if the Vesting Retainer had not been prorated; *provided however*, that if the period between the date of election or appointment and the first vesting date is less than 3 months, the amount of cash paid on such first vesting date will be equal to the full amount of the cash portion of the Vesting Retainer minus the aggregate amount of cash that will be paid for each full three month vesting period until (and including) the earlier of (i) the one-year anniversary of the most recent Annual Meeting, or (ii) the next Annual Meeting.

(d) Notwithstanding the foregoing, the Compensation Committee will have the discretion to adjust the amount of any pro-rated retainer up to the full value of such retainer if it determines that such adjustment is in the best interest of the Company and its stockholders.

4. **Deferred Compensation.** Each Non-Employee Director will be eligible to defer all or a portion of his or her Board Compensation for any term that begins on the date of election or appointment, as applicable, and ends on the first Annual Meeting thereafter (a "***Term***"). Elections with respect to any Term must be made in writing to the Company prior to the December 31st preceding the beginning of such Term and all such elections will be irrevocable. Notwithstanding the foregoing, if a Non-Employee Director is elected or appointed to the Board at any time other than at an Annual Meeting, he or she may make an initial irrevocable election to defer the Base Annual Retainer or any Additional Annual Retainers during the first 30 days of eligibility to participate hereunder and such election shall apply only to the Non-Employee Director's Base Annual Retainer or Additional Annual Retainers earned following the date of the election. If a Non-Employee Director elects to defer all or a portion of his or

her Board Compensation, the deferred compensation will be held by the Company on such Non-Employee Director's behalf in the form of deferred stock units ("***DSUs***"). DSUs will be granted (i) with respect to the Base Annual Retainer and Product Committee Retainer, on the date that the ZSU portion of the Base Annual Retainer and Product Committee Retainer, as applicable, is granted, and (ii) with respect to any additional annual retainer set forth in Section 2 (other than the Product Committee Retainer), on the date that such additional annual retainer is paid. DSUs granted under (i) will vest in accordance with the standard vesting criteria described in Section 1 and DSUs granted under (ii) will be fully vested upon grant. Vested DSUs will be distributed to a Non-Employee Director on the earliest of (i) the third anniversary of the date of grant, (ii) such Non-Employee Director's separation from service as a director, or (iii) upon a Change in Control of the Company (as defined in the Plan). Notwithstanding the foregoing, if so elected by the Non-Employee Director in writing to the Company prior to December 31st of the calendar year prior to the calendar year in which any such DSUs are granted to satisfy such Non-Employee Director's Board Compensation, the distribution of such DSUs may be deferred until the Non-Employee Director is no longer providing services as a director of the Company that constitutes a "separation from service" under Section 409A of the Internal Revenue Code of 1986, as amended.

5. **Forgo Compensation**. Each Non-Employee Director will be eligible to forgo all or a portion of his or her Board Compensation for any Term. Elections with respect to any Term must be made in writing to the Company prior to the start of such Term and all such elections will be irrevocable.

6. **Expense Reimbursement.** All Non-Employee Directors will be entitled to reimbursement from the Company for their reasonable travel (including airfare and ground transportation), lodging and meal expenses incident to meetings of the Board or committees thereof. The Company will also reimburse directors for attendance at director continuing education programs that are relevant to their service on the Board and which attendance is pre-approved by the Chairperson of the Nominating and Corporate Governance Committee or Chairperson of the Board. The Company will make reimbursement to a Non-Employee Director in accordance with the foregoing within a reasonable amount of time, but not more than 12 months, following submission by the Non-Employee Director of reasonable written substantiation for the expenses consistent with the Company's reimbursement policy.

Exhibit 21.1

SUBSIDIARIES OF ZYNGA INC.

Rising Tide Games, Inc. (Delaware)

PuzzleSocial, Inc. (Delaware)

Spooky Cool Labs LLC (Delaware)

Town’s End Studios LLC (Delaware)

Big Dog Holdings LLC (California)

Zynga Game Canada Ltd. (Canada)

Zynga Game Ireland Limited (Ireland)

Zynga Game International Limited (Ireland/Jersey)

Zynga Game Network India Private Limited (India)

NaturalMotion Limited (United Kingdom)

NaturalMotion Games Limited (United Kingdom)

NaturalMotion Software Limited (United Kingdom)

Gram Games Limited (United Kingdom)

Zynga Finland Oy (Finland)

Small Giant Games Oy (Finland)

Gram Games Teknoloji A.S. (Turkey)

Zynga Turkey Oyun Anonim Şirketi (Turkey)

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-3ASR No. 333-193889) of Zynga Inc.,

(2) Registration Statement (Form S-8 No. 333-229930) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(3) Registration Statement (Form S-8 No. 333-223109) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(4) Registration Statement (Form S-8 No. 333-217752) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(5) Registration Statement (Form S-8 No. 333-211201) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(6) Registration Statement (Form S-8 No. 333-206185) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(7) Registration Statement (Form S-8 No. 333-199959) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(8) Registration Statement (Form S-8 No. 333-193914) pertaining to the Zynga Inc. 2011 Equity Incentive Plan (as successor to the NaturalMotion Limited Option Plan and the NaturalMotion Limited Enterprise Management Incentive Scheme),

(9) Registration Statement (Form S-8 No. 333-188282) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.,

(10) Registration Statement (Form S-8 No. 333-183406) pertaining to the 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc., and

(11) Registration Statement (Form S-8 No. 333-178529) pertaining to the 2007 Equity Incentive Plan, 2011 Equity Incentive Plan and 2011 Employee Stock Purchase Plan of Zynga Inc.;

of our reports dated February 28, 2020, with respect to the consolidated financial statements and schedule of Zynga Inc. and the effectiveness of internal control over financial reporting of Zynga Inc. included in this Annual Report (Form 10-K) of Zynga Inc. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

San Jose, CA
February 28, 2020

Exhibit 31.1

CERTIFICATIONS

I, Frank Gibeau, certify that:

1. I have reviewed this Annual Report on Form 10-K of Zynga Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a–15(e) and 15d–15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statement for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

By: /s/ Frank Gibeau

Frank Gibeau
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Gerard Griffin, certify that:

1. I have reviewed this Annual Report on Form 10-K of Zynga Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a–15(e) and 15d–15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statement for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

By: /s/ Gerard Griffin

Gerard Griffin
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Frank Gibeau, Chief Executive Officer of Zynga Inc. (the "Company"), and Gerard Griffin, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2019, to which this Certification is attached as Exhibit 32.1 (the "Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 28th day of February, 2020.

/s/ Frank Gibeau	/s/ Gerard Griffin
Frank Gibeau	Gerard Griffin
Chief Executive Officer	Chief Financial Officer

"This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Zynga Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing."