#### TAPINATOR, INC.

### RISK FACTORS (as of March 16, 2020)

Investing in Tapinator, Inc.'s securities involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information in this prospectus, before deciding whether to invest in our securities. If any of the following risks actually occur, our business, results of operations and financial condition could be materially adversely affected. In this case, the trading price of our common stock would likely decline and you might lose part or all your investment in our common stock.

#### **General Business and Industry Risk Factors**

Our business will suffer if we are unable to continue to develop successful games for mobile platforms, successfully monetize mobile games, or successfully forecast mobile launches and/or monetization.

Our business depends on developing and publishing mobile games that consumers will download and spend time and money playing. We have devoted and we expect to continue to devote substantial resources to the research, development, analytics and marketing of our mobile games, however we cannot guarantee that we will continue to develop games that appeal to players. New games that we introduce need to generate sufficient bookings and revenues to offset the associated development and marketing costs. We may encounter difficulty in integrating features on games developed for mobile platforms that a sufficient number of players will pay for or in sufficient quantities to effectively monetize our mobile games. 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 are not launched on time or do not meet consumer expectations, or if they are not brought to market in a timely and effective manner, our ability to grow revenue and our financial performance will be negatively affected.

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

- effectively market mobile games to our existing mobile players and new players without excess cost;
- effectively monetize the games;
- adapt to changing player preferences;
- adapt games quickly to make sure they are compatible with, and take advantage of feature sets for new releases of mobile phones and other devices;
- expand and enhance games after their initial release;
- attract, retain and motivate talented game designers, product managers and engineers who have experience developing games for mobile platforms;
- partner with mobile platforms and obtain featuring opportunities;
- adapt game feature sets for limited bandwidth, processing power and screen size of typical mobile devices;
- minimize launch delays and cost overruns on the development of new games;
- maintain quality mobile game experience;

- release games compatible with an increasingly diverse set of mobile devices;
- compete successfully against a large and growing number of existing market participants;
- 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 mobile games and launch these games in accordance with our financial plan. If we do not succeed in doing so, our business will suffer.

We have a relatively short history in developing and launching mobile games. As a result, we may have difficulty predicting the development schedule of a new game and forecasting bookings for a game. If launches are delayed and we are unable to monetize mobile games in the manner that we forecast, our ability to grow revenue and our financial performance will be negatively impacted.

One primary strategy to grow our business is to develop game titles for smartphones and tablets. If we are not able to generate revenues and gross margins from smartphones and tablets, our revenues, financial position and operating results may suffer.

As a result of the expected continued migration of users from traditional feature phones to smartphones, we intend to continue to publish mobile games that are widely accepted and commercially successful on the smartphone and tablet digital storefronts (primarily Google's Play Store, Apple's iOS App Store, and Amazon's Appstore for Android), as well as incur marketing-related expenditures in connection with the launch of our games on these digital storefronts. Our efforts to generate revenues derived from games for smartphones and tablets may prove unsuccessful or, even if successful, it may take us longer to achieve revenue than anticipated because, among other reasons:

- changes in digital storefront policies may limit our ability to use certain types of offers and other monetization techniques in our games;
- the open nature of many of these digital storefronts increases substantially the number of competitors and competitive products and may make it more difficult for us to achieve prominent placement or featuring for our games;
- the billing and provisioning capabilities of some smartphones are not currently optimized to
  enable users to purchase games or make in app-purchases, which could make it difficult for users
  of these smartphones to purchase games or make in-app purchases and could reduce our
  addressable market, at least in the short term;
- our competitors may have substantially greater resources available to invest in developing and publishing products for smartphones and tablets;
- these digital storefronts are relatively new markets, for which we are less able to forecast with accuracy revenue levels, required marketing and development expenses, and net income or loss;
- the pricing and revenue models for titles on these digital storefronts are rapidly evolving; and
- many OEMs, social networks, messaging services and carriers are developing their own storefronts which may compete with and become more successful than the storefronts on which our games are published, and we may expend time and resources developing games for storefronts that ultimately do not succeed.

We rely heavily on key mobile infrastructure providers such as Apple, Facebook, Google and Amazon, and if we are unable to maintain a good relationship with these infrastructure providers, our business will suffer.

We rely heavily on key mobile infrastructure providers such as Apple, Facebook, Google and Amazon. We believe that we have good relationships with each of these infrastructure providers, which has contributed to the success of many of our games in the past. However, if we, any of our partners, or developers violate (or if an infrastructure provider believes we, any of our partners, or developers have violated) its terms of service, that infrastructure provider could limit or terminate its relationship with us. An infrastructure provider could also limit or terminate its relationship with us if it establishes more favorable relationships with one or more of our competitors or it determines that we are a competitor. Any limitation or termination of our relationship with any of our infrastructure providers could materially adversely affect our business, financial condition or results of operations.

If we do not achieve a sufficient return on our investment with respect to efforts to develop mobile, freemium games for smartphones and tablets, it could negatively affect our operating results.

We believe that a significant portion of our development activities for smartphones and tablets will be focused on mobile, freemium games — games that are downloadable without an initial charge, but which enable a variety of additional features to be accessed for a fee or otherwise monetized through various advertising and offer techniques. Our efforts to develop mobile, freemium games for smartphones and tablets may prove unsuccessful or, even if successful, may take us longer to achieve significant revenue than anticipated because, among other reasons:

- we have relatively limited experience in successfully developing and marketing mobile, freemium games;
- our relatively limited experience with respect to creating games that include micro-transaction capabilities, advertising and offers may cause us to have difficulty optimizing the monetization of our freemium games;
- changes in digital storefront policies that limit our ability to use certain types of offers and other monetization techniques in our games;
- some of our competitors have released a significant number of mobile, freemium games on smartphones, and this competition will make it more difficult for us to differentiate our games and derive significant revenues from them;
- some of our competitors have substantially greater resources available to invest in developing and publishing mobile, freemium games;
- we intend to develop some of our mobile, freemium games based upon our own intellectual
  property rather than well-known licensed brands and, as a result, we may encounter difficulties in
  generating sufficient consumer interest in our games;
- mobile, freemium games have a limited history, and it is unclear how popular this style of game will become or remain or its revenue potential;
- our strategy with respect to developing mobile, freemium games for smartphones assumes that a
  large number of consumers will download our games because they are free and that we will
  subsequently be able to effectively monetize these games via in-app purchases, offers and
  advertisements; however, some smartphones charge users a fee for downloading content, and users
  of these smartphones may be reluctant to download our freemium games because of these fees,
  which would reduce the effectiveness of our product strategy;
- our mobile, freemium games may otherwise not be widely downloaded by consumers for a variety

of reasons, including poor consumer reviews or other negative publicity, ineffective or insufficient marketing efforts or a failure to achieve prominent storefront featuring for such games; and

even if our mobile, freemium games are widely downloaded, we may fail to retain users of these
games or optimize the monetization of these games for a variety of reasons, including poor game
design or quality, gameplay issues such as game unavailability, long load times or an unexpected
termination of the game due to data server or other technical issues or failure to effectively
respond and adapt to changing user preferences through updates to our games.

Because mobile, freemium games are effectively new products for us, we are less able to forecast with accuracy the potential revenue levels, required marketing and development expenses, and net income or loss associated with freemium games. If we do not achieve a sufficient return on our investment with respect to developing and selling mobile, freemium games, it will negatively affect our operating results and may require us to formulate a new business strategy.

#### If our top games do not maintain their popularity, our results of operations could be harmed.

In addition to creating new games that are attractive to a significant number of players, we must extend the life of our existing games, in particular our most successful games. Historically, we have depended on a small number of games for a significant portion of our revenue and we expect that this dependency will continue for the foreseeable future. Our existing games compete with our new offerings and the offerings of our competitors. Traditionally, bookings from existing games decline over time. For a game to remain popular, we must constantly enhance, expand or upgrade the game with new features that players find attractive. Increased competition can result in increasing player acquisition and retention costs. Constant game enhancement requires the investment of significant resources, particularly with older games, and such costs on average have increased. We may not be able to successfully enhance, expand or upgrade our current games. Any reduction in the number of players of our most popular games, any decrease in the popularity of our games in general, any breach of game-related security or prolonged server interruption, any loss of rights to any intellectual property underlying such games, or any other adverse developments relating to our most popular games, could harm our results of operations.

Our business is intensely competitive and "hit" driven. If we do not deliver "hit" products and services, or if consumers prefer our competitors' products or services over our own, our operating results could suffer.

Competition in our industry is intense. Many new games are introduced in each major industry segment (mobile, web and PC), but only a relatively small number of "hit" titles account for a significant portion of total revenue in each segment. Our competitors range from large established companies to emerging start-ups, and we expect new competitors to continue to emerge throughout the world. If our competitors develop and market more successful products or services, offer competitive products or services at lower price points or based on payment models perceived as offering a better value proposition, or if we do not continue to develop consistently high-quality and well-received products and services, our revenue, margins, and profitability will decline.

A small number of games have generated a significant portion 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 significant portion of our revenue and we expect that this dependency will continue for the foreseeable future. Bookings and revenue from many of our games tend to decline over time after reaching a peak of popularity and player usage. As a result of this natural decline in the life cycle of our games, our business depends on our ability to consistently and timely launch new games across multiple platforms and devices that achieve significant popularity and have the potential to become franchise games.

Each of our games requires significant engineering, marketing and other resources to develop, launch and sustain via regular upgrades and expansions, and such costs on average have increased over the last several

years. Our ability to successfully launch, sustain and expand games and attract and retain players largely will depend on our ability to:

- anticipate and effectively respond to changing game player interests and preferences;
- anticipate or respond to changes in the competitive and technological landscape (including, but not limited to changes in mobile devices and gaming platforms);
- attract, retain and motivate talented game designers, product managers and engineers;
- develop, sustain and expand games that our players find fun, interesting and compelling to play;
- develop games that can build upon or become franchise games;
- effectively market and advertise new games and enhancements to our existing players and new players;
- acquire players in a cost-effective manner;
- minimize launch delays and cost overruns on new games and game expansions;
- minimize downtime and other technical difficulties; and
- acquire and integrate high quality assets, personnel and companies.

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 and mobile platforms. 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.

and Google have recently introduced subscription gaming platforms that will allow players to play a certain number of mobile games for a set monthly fee. If their subscription model becomes popular, our freemium game business model may be negatively impacted along with our operating results in the event we were unable to adapt.

In the third quarter of 2019, Apple and Google introduced new cloud-based platforms that will allow players to access and play a finite number of games on an unlimited basis that are not offered at other mobile gaming stores (including Apple's App Store) for a set monthly fee rather than a per-play fee. To our knowledge, this subscription model has not been used in the mobile gaming industry in any substantial way in the past. In the event mobile game players begin to adopt this subscription model in a meaningful way, our freemium game business model, which is based on the free distribution of our games coupled with monetization through in-app purchases and advertisements, may be negatively impacted along with our operating results in the event we are unable to adapt in some way to the subscription model.

#### We operate in a new and rapidly evolving industry.

The mobile game industry, through which we derive substantially all of our revenue, is a relatively new and rapidly evolving industry. The growth of the mobile game industry and the level of demand and market acceptance of our games are subject to a high degree of uncertainty. Our future operating results will depend on numerous factors affecting the mobile game industry, many of which are beyond our control, including:

- our ability to extend our brand and games to mobile platforms and the timing and success of such mobile game launches;
- our ability to maintain the popularity of our games on Google, iOS, Amazon and other platforms;

- our ability to effectively monetize games on mobile devices and across multiple platforms and devices;
- our ability to maintain technological solutions and employee expertise to rapidly respond to continuous changes in mobile platforms and mobile devices;
- changes in consumer demographics and public tastes and preferences;
- the availability and popularity of other forms of entertainment;
- the worldwide growth of mobile devices, broadband Internet and personal computer users, and the rate of any such growth; and
- general economic conditions, particularly economic conditions adversely affecting discretionary consumer spending.

Our ability to plan for game development, distribution and promotional activities will be significantly affected by our ability to anticipate and adapt to changes in the tastes and preferences of our current and potential players and changes in technology. New and different types of entertainment may increase in popularity at the expense of mobile games. A decline in the popularity of mobile games in general, or our games in particular, would harm our business and prospects.

## Security breaches, computer viruses and computer hacking attacks could harm our business, reputation, brand and results of operations.

Security breaches, computer malware and computer hacking attacks have become more prevalent in our industry and may occur on our systems in the future. Any security breach caused by hacking, which involves efforts to gain unauthorized access to information or systems, or to cause intentional malfunctions or loss or corruption of data, software, hardware or other computer equipment, and the inadvertent transmission of computer viruses could harm our business, financial condition and operating results. We may experience hacking attacks of varying degrees from time to time, including denial-of-service attacks.

In addition, our games involve the storage and transmission of players' personal information in our facilities and on our equipment, networks and corporate systems run by us or managed by third-parties including Google, Apple, Amazon and Facebook. Security breaches of our systems or third-parties on whom we rely could expose us to litigation, remediation costs, increased costs for security measures, loss of revenue, damage to our reputation and potential liability. Our player data, corporate systems, third party systems and security measures may be breached due to the actions of outside parties, employee error, malfeasance, a combination of these, or otherwise, and, as a result, an unauthorized party may obtain access to our data, our players' data or our advertiser's data. Additionally, outside parties may attempt to fraudulently induce employees or players to disclose sensitive information in order to gain access to our players' data or our advertiser's data. We must continuously examine and modify our security controls and business policies to address the use of new devices and technologies enabling players to share data and communicate in new ways, and the increasing focus by our players and regulators on controlling and protecting user data.

Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently or may be designed to remain dormant until a predetermined event and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. Though it is difficult to determine what harm may directly result from any specific interruption or breach, any failure or perceived failure to maintain performance, reliability, security and availability of our network infrastructure to the satisfaction of our players may harm our reputation and our ability to retain existing players and attract new players.

If an actual or perceived breach of our security occurs, the market perception of the effectiveness of our security measures could be harmed, we could lose players and advertisers, and we could suffer significant legal

and financial exposure due to such events or in connection with remediation efforts, investigation costs or penalties, changed security and system protection measures. Any of these actions could have a material and adverse effect on our business, reputation and operating results.

### Any failure or significant interruption in our infrastructure could impact our operations and harm our business.

Our technology infrastructure is critical to the performance of certain of our games and to player satisfaction within those games. These games run on complex distributed systems, or what is commonly known as cloud computing. We do not own, operate and maintain the primary elements of these systems, but instead these systems are operated by third parties that we do not control and which would require significant time and potential expense to replace. We have experienced, and may in the future experience, service 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. A failure or significant interruption in our game service would harm our reputation and operations. We have suffered interruptions in service when releasing new software versions or bug fixes for specific games in the past and if any such interruption were significant, it could harm our business or reputation. We may decide to make significant investments to our technology infrastructure to maintain and improve all aspects of player experience and game performance. To the extent we do not effectively address capacity constraints, upgrade our systems as needed and continually develop our technology and network architecture to accommodate increasing traffic, our business and operating results may suffer. 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.

#### We must continue to spend significant resources to effectively manage our business and operations.

To effectively manage our business and operations, we will need to continue to focus on spending significant resources to improve our technology infrastructure, our operational, financial and management controls, and our reporting systems and procedures by, among other things:

- monitoring and updating our technology infrastructure to maintain high performance and minimize down time; and
- monitoring our internal controls to ensure timely and accurate reporting of all of our operations.

These enhancements and improvements will require capital expenditures and allocation of valuable management and employee resources.

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 intend to evaluate and pursue acquisitions and strategic investments. These acquisitions and strategic investments could be material to our financial condition or results of operations. Challenges and risks from such investments and acquisitions include:

- negative effects on products and product pipelines and the potential disruption that may follow acquisitions;
- diversion of our management's attention away from our business;
- declining employee morale and retention issues resulting from changes in compensation, or changes in management, reporting relationships, or future prospects;

- significant competition from other game companies as the mobile game industry consolidates;
- 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 on a timely basis, and unforeseen difficulties and expenditures that may arise in connection with integration;
- the difficulty in determining the appropriate purchase price for acquired companies may lead to the overpayment in certain acquisitions and the potential impairment of intangible assets and goodwill acquired in 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 public company at companies that, prior to acquisition, lacked such controls, procedures and policies;
- the difficulty in accurately forecasting and accounting for the financial impact of acquisitions, including accounting charges and integrating and reporting results for acquired companies that do not historically follow generally accepted accounting principles in the United States ("GAAP");
- 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;
- 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;
- in some cases, 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;
- in certain instances, the ability to exert control of acquired businesses that include earnout provisions in the agreements relating to such acquisitions or the potential obligation to fund an earnout for a product that has not met expectations;
- 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, 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 and operating results. 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.

If we are able to develop new games that achieve success, it is possible that these games 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 that become popular with players, it is possible that any new games that we develop could result in our existing players reducing their playing time and purchase of virtual items in our existing games. We plan to cross-promote our new games in our other games, which could encourage players of existing games to divert some of their playing time and spending on existing games. If new games do not grow our player base or generate sufficient new bookings to offset any declines from our other games, our bookings and revenue could be adversely affected.

We derive a material portion of our revenues from advertisements and offers that are incorporated into our F2P games through relationships with third parties. If we lose the ability to provide these advertisements and offers for any reason, or if any events occur that negatively impact the revenues we receive from these sources, it would negatively impact our operating results.

We derive revenues from our F2P games though in-app purchases, advertisements and offers. We incorporate advertisements and offers into our games by implementing third parties' software development kits and we have direct relationships with third parties regarding advertising. We rely on these third parties to continue our advertising relationships. If direct advertising relationships change or we exhaust the available inventory of these third parties, it will negatively impact our revenues. If our relationship with any of these third parties terminates for any reason, or if the commercial terms of our relationships do not continue to be renewed on favorable terms, we would need to locate and implement other third-party solutions, which could negatively impact our revenues, at least in the short term. Furthermore, 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 (and conversely significantly increases our marketing expenses in the fourth quarter).

### Our revenue, bookings and operating margins may decline.

The industry in which we operate is highly competitive and rapidly changing, and relies heavily on successful new product launches and 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. In addition, we believe that our operating margin will continue to experience downward pressure as a result of increasing competition. We expect to continue to expend substantial financial and other resources on game development, including mobile games, our technology stack, game engines, game technology and tools and international expansion. 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 contract, requiring us to implement significant additional cost cutting measures, including a decrease in research and development, which could harm our long-term prospects.

#### If we fail to effectively manage our human resources, our business may suffer.

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. We do not maintain key-man insurance for our senior management team. The loss of any of the members of our senior management team could harm our business.

In addition, our ability to execute our strategy depends on our continued ability to identify, hire, develop motivate and retain highly skilled employees, particularly game designers, product managers and

engineers. These employees are in high demand, and we devote significant resources to identifying, recruiting, hiring, training, successfully integrating and retaining them. Any significant turnover in our headcount will place significant demands on our management and our operational, financial and technological infrastructure.

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

The number of people using mobile Internet-enabled devices has increased dramatically in the past few years and we expect that this trend will continue. However, the mobile market, particularly the market for mobile games, is still maturing and it may not grow as we anticipate. Our future success is substantially dependent upon the continued growth of the market for mobile games. The mobile market may not continue to grow at historic rates and consumers may not continue to use mobile-Internet enabled devices as a platform for 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 we could experience a decline in bookings and revenue. Any decline in the growth of the mobile market or in the use of mobile devices for games could harm our business. Moreover, new and emerging technologies could make the mobile devices on which our games are currently released obsolete, requiring us to transition our business model to develop games for other next-generation platforms.

## We have a relatively new business model and a short operating history, which make it difficult to evaluate our prospects and future financial results and may increase the risk that we will not be successful.

We incorporated in December 2013 and have a short operating history and a relatively new business model, which makes it difficult to effectively assess our future prospects. Our business model is based on offering games that are free to play. To date, only a very small portion of our players pay for our products. We cannot assure that any of our efforts will be successful or result in the development or timely launch of additional products, or ultimately produce any material revenue.

### Our existing and potential players may be attracted to competing forms of entertainment such as offline and traditional online games, television, movies and sports, as well as other entertainment options on the Internet.

Our players face a vast array of entertainment choices. Other forms of entertainment, such as offline, traditional online, personal computer and console games, television, movies, sports and the Internet, are much larger and more well-established markets and may be perceived by our players to offer greater variety, affordability, interactivity and enjoyment. These other forms of entertainment compete for the discretionary time and income of our players. If we are unable to sustain sufficient interest in our games in comparison to other forms of entertainment, including new forms of entertainment, our business model may no longer be viable.

#### Competition in our industry is intense and there are low barriers to entry.

Our industry is highly competitive and we expect more companies to enter the sector and a wider range of mobile games to be introduced. Our competitors that develop games for networks, on both web and mobile, vary in size and include companies such as Zynga, DeNA Co. Ltd. (Japan), Electronic Arts Inc., Gameloft SA, GREE International, Inc., Glu Mobile Inc., King.com Inc., Activision, Rovio Mobile Ltd., Supercell Inc., GungHo Online Entertainment, Inc., Kabam and Epic Games.

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. In addition, we have relatively limited experience in developing games for mobile and other platforms and our ability to succeed on those platforms is uncertain. We expect new game competitors to enter the market and existing competitors to allocate more resources to develop and market competing games and applications.

As there are relatively low barriers to entry to develop a mobile 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. Increasing competition could result in loss of players, loss of talent or loss of our ability to acquire new players in a cost-effective manner, all of which could harm our business.

## Our revenue may be harmed by the proliferation of "cheating" programs and scam offers that seek to exploit our games and players, affects the game-playing experience 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 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 may reduce the demand for virtual items. In addition, unrelated third parties attempt to scam our players with fake offers for virtual goods or other game benefits. If we are unable to quickly discover and disable these programs and activities, our operations may be disrupted, our reputation damaged and players may stop playing our games. This may lead to lost revenue from paying players, increased cost of developing technological measures to combat these programs and activities, legal claims relating to the diminution in value of our virtual currency and goods, and increased customer service costs needed to respond to dissatisfied players.

## Failure to protect or enforce our intellectual property rights or the costs involved in such enforcement could harm our business and operating results.

We regard the protection of our intellectual property 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. 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 the other steps we have taken to protect our intellectual property may not prevent the misappropriation of our proprietary information or deter independent development of similar technologies by others.

We pursue the registration of certain of our intellectual property rights in the United States and in certain locations outside the United States. 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, invest in protecting our creative works through copyright filings and our brands through trademark and other filings. Likewise, we may, over time, invest in protecting our innovations through patent filings that are expensive and time-consuming and may not result in issued patents that can be effectively enforced. The Leahy-Smith America Invents Act (the "Leahy-Smith Act") was adopted in September 2011. The Leahy-Smith Act includes a number of significant changes to United States patent law, including provisions that affect the way patent applications will be prosecuted, which could be detrimental to investors, and may also affect patent litigation. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could harm our business.

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. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs, adverse publicity, or diversion of management and technical resources, any of which could adversely affect our business and operating results. If we fail to maintain, protect and enhance our intellectual property rights, our business and operating results may be harmed.

We may be involved in legal proceedings and commercial or contractual disputes that may result in adverse outcomes.

We may be involved in claims, suits, government investigations, proceedings and commercial or contractual disputes 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 claims, as well as stockholder derivative actions, class action lawsuits, 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, operating results, and financial condition.

## Programming errors or flaws in our games could harm our reputation or decrease market acceptance of our games, which would harm our operating results.

Our games may contain errors, bugs, flaws or corrupted data, and these defects may only become apparent after their launch, particularly as we launch new games and rapidly release new features to existing games under tight time constraints. We believe that if our players have a negative experience with our games, they may be less inclined to continue or resume playing our games or recommend our games to other potential players. Undetected programming errors, game vulnerabilities that may be exploited by cheating programs and other forms of misappropriation, game defects and data corruption can disrupt our operations, adversely affect the game experience of our players by allowing players to gain unfair advantage, misappropriate virtual goods, 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 operating results.

# Evolving regulations, industry standards and practices by platform providers concerning data privacy could prevent us from providing our games to our players, or require us to modify our games, thereby harming our business.

The regulatory framework for privacy issues worldwide is currently in flux and is likely to remain so for the foreseeable future. Practices regarding the collection, use, storage, transmission and security of personal information by companies operating over the Internet and mobile platforms are under increased public scrutiny. The United States government, including the Federal Trade Commission ("FTC"), U.S. Congress, and various State Attorneys General and legislatures are continuing to review the need for greater regulation for the collection and use of information concerning consumer behavior on the Internet, including regulation aimed at restricting certain targeted advertising practices. 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. In addition, California has passed the California Consumer Privacy Act ("CCPA"), which became effective as of January 1, 2020, and requires companies to comply with requests by California residents to delete or opt-out of the sharing of personal data, among other requirements. In addition, the European Union Global Data Protection Regulation ("GDPR") implements stringent operational requirements with respect to personal data collected about individuals located in the European Union. Various government and consumer agencies have also called for new regulation and changes in industry practices.

We process, store and use personal information and other data, which subjects us to governmental regulation and other legal obligations related to privacy, information security, data protection, consumer protection and protection of minors and our actual or perceived failure to comply with such obligations 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. We strive to comply with all applicable laws,

policies, legal obligations and certain industry codes of conduct relating to privacy and data protection. 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 more costly or difficult for us to do so. For example, if a country enacted legislation that required data of their citizens gathered by online services to be held within the country, we may not be able to comply with such legislation or compliance could be so difficult or costly that we chose not to stop offering services to citizens of that country. Any failure or perceived failure by us to comply with our privacy policies, 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. 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.

All 50 U.S. states have passed laws requiring notification to individuals when there is a security breach for certain types of personal data, such as California's Notice of Data Breach Act. Many federal and state consumer protection laws require the adoption of minimum information security standards that are often vaguely defined and difficult to practically implement. The costs of compliance with these laws may increase in the future as a result of changes in interpretation. Moreover, in the areas of privacy, information security, data protection, consumer protection and protection of minors, foreign laws and regulations are often more restrictive than those in the United States. In particular, the European Union and its member states traditionally have taken broader views as to types of data that are subject to data protection, and have imposed legal obligations on companies in this regard. Any failure on our part to comply with laws in these areas may subject us to significant liabilities.

### Our business is subject to a variety of other United States 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 United States and abroad, including state and Federal laws regarding consumer protection, electronic marketing, protection of minors, data protection, competition, taxation, intellectual property, export and national security, that 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 United States. There is a risk that these laws may be interpreted in a manner that is not consistent with our current practices, and could have an adverse effect on our business. For example, laws relating to the liability of providers of online services for activities of their users and other third parties are currently being tested by a number of claims, including actions based on invasion of privacy and other torts, unfair competition, copyright and trademark infringement, and other theories based on the nature and content of the materials searched, the ads posted or the content provided by users. 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. 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 United States and other jurisdictions regarding whether social-casino applications should be subject to a higher level or different type of regulation than other mobile game applications and, if so, what this regulation should include.

### If we fail to anticipate or successfully develop new games for new technologies, platforms and devices, the quality, timeliness and competitiveness of our games could suffer.

The games industry is characterized by rapid technological changes that can be difficult to anticipate. New technologies, including distribution platforms and gaming devices, such as consoles, virtual and augmented reality, messenger applications, blockchain technology, connected TVs, or a combination of existing and new

technologies, may force us to adapt our current game development processes or adopt new processes. If consumers shift their time to platforms other than the mobile platforms where our games are currently primarily distributed, the size of our audience could decline and our performance could be impacted. It may take significant time and resources to shift our focus to such technologies, platforms and devices, putting us at a competitive disadvantage. Alternatively, we may increase the resources employed in research and development to adapt to these new technologies, distribution platforms and devices, either to preserve our games or a game launch schedule or to keep up with our competition, which would increase our development expenses. We could also devote significant resources to developing games to work with such technologies, platforms or devices, and these new technologies, platforms or devices may not experience sustained, widespread consumer acceptance. The occurrence of any of these events could adversely affect the quality, timelines and competitiveness of our games, or cause us to incur significantly increased costs, which could harm our operation results.

#### Our tax liabilities may be greater than anticipated.

We may be subject to audit by the Internal Revenue Service and by taxing authorities of the state and local jurisdictions in which we operate. Our tax obligations are based in part on our corporate operating structure, including the manner in which we develop, value, and use our intellectual property, the jurisdictions in which we operate, how tax authorities assess revenue-based taxes such as sales and use taxes, the scope of our international operations and the value we ascribe to our intercompany transactions. Taxing authorities may challenge our tax positions and methodologies for valuing developed technology or intercompany arrangements, as well as our positions regarding the collection of sales and use taxes and the jurisdictions in which we are subject to taxes, which could expose us to additional taxes, including interest and penalties.

## U.S. tax legislation passed in 2017 may materially affect our financial condition, results of operations and cash flows.

U.S. tax legislation passed in 2017 has significantly changed the U.S. federal income taxation of U.S. corporations, including reducing the U.S. corporate income tax rate, limiting interest deductions, permitting immediate expensing of certain capital expenditures, adopting elements of a territorial tax system, revising the rules governing net operating losses and the rules governing foreign tax credits, and introducing new anti-base erosion provisions. The legislation could be subject to potential amendments, technical corrections and interpretations by the U.S. Treasury and Internal Revenue Service, any of which could affect the impacts of the legislation.

#### Risks Related to Ownership of Our Common Stock

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

The trading price of our 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. Between January 1, 2017 and March 12, 2020, the stock price of our common stock has ranged from \$2.95 to \$115.20. In addition to the factors discussed in these "Risk Factors," 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;
- our announcement of significant transactions or product developments;
- the use by investors or analysts of third-party data regarding our business that may not reflect our actual performance;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;

- 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 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. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could harm our business.

### Our shareholders may be adversely affected by our past history as a "shell company" making Rule 144 unavailable for our securities except in certain circumstances.

Rule 144 under the Securities Act of 1933, as amended, provides a safe harbor under which holders of restricted securities and affiliates of an issuer may resell their securities into the public market. However, Rule 144 is unavailable for securities of former shell companies until, among other things, twelve months have elapsed since the former "shell company" has filed "Form 10 information" with the Securities and Exchange Commission.

We are deemed a shell company under Rule 144 as a result of our Share Exchange Agreement with Tapinator, Inc., the successor to Evolution Resources, Inc., on June 16, 2014. Evolution Resources was formerly known as BBN Global Consulting, Inc. BBN Global Consulting was marked as a shell company according to its (i) Form 10-Q's for the fiscal quarters ended April 30, 2008 and January 31, 2009 and (ii) Form 10-K for the year ended October 31, 2008 filed with the Securities and Exchange Commission on June 12, 2008, March 3, 2009 and January 28, 2009, respectively. As a result, Rule 144 shall not be available to permit our shareholders to resell their securities until twelve months from the filing of this registration statement assuming we are able to be granted effectiveness by the SEC and remain current with our periodic filings under the Securities Exchange Act of 1934, as amended. No assurance can be provided that we will again become eligible for resale under Rule 144.

The unavailability of the Rule 144 resale exemption for our securities may adversely affect our ability to raise additional financing on a private placement basis, and may adversely affect the ability of our shareholders to resell their securities into the public market, all of which could have a material adverse effect on us and our shareholders.

Any market that develops in shares of our common stock will be subject to the penny stock regulations and restrictions pertaining to low priced stocks that will create a lack of liquidity and make trading difficult or impossible.

The trading of our securities, if any, will be in the over-the-counter market which is commonly referred to as the "OTC". As a result, an investor may find it difficult to dispose of, or to obtain accurate quotations as to the price of our securities.

Broker-dealer practices in connection with transactions in "penny stocks" are regulated by penny stock rules adopted by the SEC. The term "penny stock" is defined in Exchange Act Rule 3a51-1 as, among other things, as having a price of less than \$5.00 per share as set forth in Exchange Act Rule 3a51-(1)(d). The penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document that provides information about penny stocks and the nature and level of risks in the penny stock market.

The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction, and, if the broker-dealer is the sole market maker, the broker-dealer must disclose this fact and the broker-dealer's presumed control over the market, and monthly account statements showing the market value of each penny stock held in the customer's account. In addition, broker-dealers who sell these securities to persons other than established customers and "accredited investors" must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written agreement to the transaction. Consequently, these requirements may have the effect of reducing the level of trading activity, if any, in the secondary market for a security subject to the penny stock rules, and investors in our common stock may find it difficult to sell their shares.

Disclosure also has to be made about the risks of investing in penny stock in both public offerings and in secondary trading and commissions payable to both the broker-dealer and the registered representative, current quotations for the securities and the rights and remedies available to an investor in cases of fraud in penny stock transactions. Additionally, monthly statements have to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks.

Because of these regulations, broker-dealers may not wish to engage in the above-referenced necessary paperwork and disclosures and/or may encounter difficulties in their attempt to sell shares of our common stock, which may affect the ability of selling shareholders or other holders to sell their shares in any secondary market and have the effect of reducing the level of trading activity in any secondary market. These additional sales practice and disclosure requirements could impede the sale of our securities, if and when our securities become publicly traded. In addition, the liquidity for our securities may decrease, with a corresponding decrease in the price of our securities. Our shares, in all probability, will be subject to such penny stock rules for the foreseeable future and our shareholders will in all likelihood find it difficult to sell their securities.

# It is likely that we will 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; new investors face possible future dilution.

Our working capital decreased approximately \$837 thousand from approximately \$484 thousand as of December 31, 2018 to a working capital deficit of approximately \$353 thousand as of December 31, 2019. We intend to continue to make significant investments to support our business growth and will likely require additional funds to respond to business challenges, including the need to develop new games and features or enhance our existing games, market our games, improve our operating infrastructure or acquire complementary businesses, personnel and technologies. Accordingly, we will likely 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 common stock. Any debt financing that we secure in the future could involve 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. 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 and if 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 may be harmed.

# The issuance of shares upon the exercise of derivative securities may cause immediate and substantial dilution to our existing stockholders.

As of December 31, 2019, we had approximately 42,161 shares of common stock that were issuable upon the exercise of vested outstanding stock options and 213,750 shares issuable upon the exercise of vested outstanding warrants. The issuance of shares upon the exercise or vesting of these securities may result in substantial dilution to the equity interest and voting power of holders of our common stock.

In the future, we may also issue additional shares of common stock or other securities convertible into or exchangeable for shares of common stock. The issuance of additional shares of our common stock may

substantially dilute the ownership interests of our existing stockholders. Furthermore, sales of a substantial amount of our common stock in the public market, or the perception that these sales may occur, could reduce the market price of our common stock. This could also impair our ability to raise additional capital through the sale of our securities.

Because we are not subject to compliance with rules requiring the adoption of certain corporate governance measures, our stockholders have limited protection against interested director transactions, conflicts of interest and similar matters.

The Sarbanes-Oxley Act of 2002, as well as rule changes proposed and enacted by the SEC, the New York and American Stock Exchanges and the Nasdaq Stock Market (as a result of Sarbanes-Oxley), require the implementation of various measures relating to corporate governance. These measures are designed to enhance the integrity of corporate management and the securities markets and apply to securities that are listed on those exchanges or the Nasdaq Stock Market. Because we are not presently required to comply with many of the corporate governance provisions and because we chose to avoid incurring the substantial additional costs associated with such compliance any sooner than legally required, we have not yet adopted these measures. Until we comply with such corporate governance measures, regardless of whether such compliance is required, the absence of such standards of corporate governance may leave our stockholders without protections against interested director transactions, conflicts of interest, if any, and similar matters and investors may be reluctant to provide us with funds necessary to expand our operations.

We may find it very difficult or be unable to attract and retain qualified officers, directors and members of board committees required to provide for our effective management as a result of Sarbanes-Oxley Act of 2002. The enactment of the Sarbanes-Oxley Act of 2002 has resulted in a series of rules and regulations by the SEC that increase responsibilities and liabilities of directors and executive officers. The perceived increased personal risk associated with these recent changes may make it more costly or deter qualified individuals from accepting these roles.

The interests of our principal stockholders, officers and directors, who collectively beneficially own approximately 44% of our stock, may not coincide with yours and such stockholders will have the ability to substantially influence decisions with which you may disagree.

As of January 2, 2020, our principal stockholders, officers and directors beneficially owned approximately 44% of our common stock. As a result, our principal stockholders, officers and directors will have the ability to substantially influence matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change in control of our company and make some future transactions more difficult or impossible without the support of our controlling stockholders. The interests of such stockholders may not coincide with your interests or the interests of other stockholders.

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

Third parties, such as App Annie publish daily data about us and other mobile game companies with respect to DAUs, monthly revenue, time spent per user and other information concerning mobile 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 goods. 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 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 common stock, to some extent, may at some point depend 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 elect to cover us and downgrade our shares or lower their opinion of our shares, our share price would likely decline. If one or more of these analysts elect to cover us and subsequently 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.

### Future sales or potential sales of our common stock in the public market could cause our share price to decline.

If the existing holders of our common stock, particularly our directors and officers, sell a large number of shares, they could adversely affect the market price for our common stock. Sales of substantial amounts of our common stock in the public market, or the perception that these sales could occur, could cause the market price of our common stock to decline.

#### We do not intend to pay dividends for the foreseeable future.

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

We may be limited in our ability to utilize, or may not be able to utilize net operating loss carryforwards to reduce our future tax liability as a result of an "ownership change," as defined in Section 382 of the Code (as defined below) triggered by past or future transactions.

As of December 31, 2019 and December 31, 2018, we had approximately \$4.48 million and \$3.82 million, respectively, of net operating loss ("NOL") carryforwards for U.S. federal tax purposes. The amount of NOL carryforwards that we present herein for the fiscal year ended December 31, 2018 is on an as-corrected basis to correct for an error related to the calculation of our income tax provisions for the fiscal years ended December 31, 2018 and 2017. Our management has determined that the error was immaterial to the prior reporting periods affected and that a restatement of the previously issued financial statements is not required. For additional information, see "—If we fail to maintain an effective system of internal controls over financial reporting, we may not be able to accurately report our financial results or prevent fraud and our business may be harmed and our stock price may be adversely impacted."

For NOLs generated prior to January 1, 2018 ("Old NOLs"), we generally can use our NOL carryforwards to offset U.S. federal taxable income, thereby reducing our U.S. federal income tax liability, for up to 20 years from the year in which the losses were generated, after which time they will expire. The rate at which we can utilize our NOL carryforwards is limited (which could result in NOL carryforwards expiring prior to their use) each time we experience an "ownership change," as determined under Section 382 of the Code. A Section 382 ownership change generally occurs if a shareholder or a group of shareholders who are deemed to own at least 5% of our common stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. If an ownership change occurs, Section 382 generally would impose an annual limit on the amount of post-ownership change taxable income that may be offset with pre-ownership change NOL carryforwards equal to the product of the total value of our outstanding equity immediately prior to the ownership change (reduced by certain items specified in Section 382) and the U.S. federal long-term tax-exempt interest rate in effect at the time of the ownership change. A number of complex rules apply in calculating this limitation. It is possible that we may experience ownership changes in the future as a result of certain transactions, equity offerings and other shifts in our stock ownership. As a result, our ability to use our pre-change NOL carryforwards to offset U.S. federal taxable income may be subject to the limitation, which could result in increased tax liability to us. In addition, our ability to use our NOL carryforwards will be limited to the extent we fail to generate sufficient taxable income before they expire. Existing and future Section 382 limitations and our inability to generate sufficient taxable income could result in a portion of our NOL carryforwards expiring before they are used. In addition, under the 2017 Tax Cut and Jobs Act, losses arising in taxable years beginning after December 31, 2017 may be carried forward indefinitely, but they may only be used to offset the taxable income by a maximum of 80%.