

Gaming 101: A Tutorial of the Gaming Industry

Introduction

In this article we are going to provide an overview of the gaming industry and its trends starting from the more traditional console and pc which are moving toward the cloud, to the newest trends in the mobile gaming, such as hyper-casual games, to then finish with the new possibilities enabled by eSports and streaming.

The More Traditional Gaming: Console/PC and the Push Toward Cloud Gaming

Ever since the early 1950s, the video game industry has slowly made its way into becoming one of the most prevalent forms of entertainment in today's society. Video game producers have spent billions of Euros on R&D to release the newest and most technologically advanced video games with the aim of capturing an extra percentage of market share. Excluding PC producers, the main competitors in the gaming industry are Nintendo (Nintendo Switch and other consoles), Sony (PlayStation) and Microsoft (Xbox). As today's society now relies on simplicity and practicality, there has been a gradual shift towards cloud gaming which has inevitably led to the introduction of new competitors on the market and in the video game industry. For example, Amazon, an e-commerce company with relatively little experience in the gaming industry has just released a new gaming service (through the clouds) called Luna, which is set to rival Microsoft's xCloud, Google's Stadia as well as Apple's Arcade.

Cloud gaming, also known as gaming on demand, has the potential to expand its market for premium games beyond the current PC and console audience by reaching a larger customer base on any type of device. As technology continues to improve and the cloud gaming industry keeps on growing, the overall demand for new games will continue to increase since new consumer groups will enter the gaming industry. Its success is most likely due to its more technologically advanced platform, which offers the possibility to play a game on any device without the need to own the physical hardware required to process such games or needing a local copy of the game itself. It is sometimes referred to as the "Netflix of gaming" and similar to Xbox's Game Pass, this game pass's key attribute consists of downloading games to the users' consoles rather than streaming the game content to consumers.

Today, the gaming industry in Europe has revenues of approximately €12.75bn, according to the Interactive Software Federation of Europe, with approximately 293.8M users in 2020. Revenues are expected to show a compound annual growth rate of 1.8% by 2025, leading to an expected market volume of €13.9bn. The user penetration rate – the percentage of the relevant consumer group that has acquired the given product, is forecasted to be 21.2% by the end of 2020 and is expected to grow to 36.8% by 2025.

Among the major players in the cloud gaming industry, there is a discrepancy between two groups of players. We can notice that Sony, Microsoft, and Nintendo offer cloud gaming, but also offer gaming hardware required to utilize their cloud gaming products. These competitors have been adapting to the trend of simplicity and practicality within the video game industry, pushing for a more "cloud-based" platform. In contrast, Apple, Amazon, and Google do not offer specialized gaming hardware, but focus solely on developing and marketing purely cloud gaming products. Regarding pricing strategies, all cloud gaming industry participants have adopted a similar pricing strategy in the form of a subscription-based plan. This new strategy has thus revolutionized the payment collection relationship with customers, marking the older model of a one-game-one-payment structure a thing of the past.

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It is important to notice that there are many other competitors within the cloud gaming market, such as NVIDIA Corporation (US), Intel Corporation (US), IBM Corporation (US), and French-based companies Blade and Blacknut. Overall, the market is highly concentrated, and will probably remain so in the foreseeable future due to the massive scales of the companies present in this industry.

In contrast to the economic downturn caused by the Covid-19 pandemic, M&A activity within the video gaming industry has increased due to the increase in demand for home entertainment as a consequence of lockdown measures taken by governments. One example of this would be Playrix, a game developer that collected more than \$200M through the pandemic. This developer has indicated that it is planning on spending its pandemic profit on future strategic expansions through M&A opportunities. PE and VC funds are currently sitting on US\$2.5tn worth of dry powder and investing opportunities will be hard to resist.

Moreover, in July 2020 for instance, Sony invested \$250M in Epic Games to acquire a 1.4% stake in the company that developed Fortnite. Clearly, larger players are also moving into investing into the video game industry such as conglomerate Tencent, which acquired Funcom, a Norwegian game developer for \$148M at a 27% premium. Sony has also expanded its entertainment portfolio, through acquiring Eleven and forming joint ventures as well as investing \$400M for a minority stake in Bilibili which is a Chinese online video and mobile games group. Regarding the means of financing, most transactions are completed through an all-cash consideration. Some transactions are completed through a mixed consideration with the use of both cash and stock.

As we conclude the year 2020 and move into 2021, we expect to witness more acquisitions and a continuous investment in the video gaming industry as incumbents will remain interested in reaching their strategic goals and investors will keep on seeking returns in one of the outperforming industries of the economy.

Regarding the key performance indicators, a plethora of ratios are very relevant to the video gaming and cloud gaming industry. One of these is the average revenue per user (ARPU), which is expected to amount to \$33.81 by the end of 2020. Other relevant ratios would be the average revenue per paying user (ARPPU). Additionally, another interesting key performance indicator which is pertinent to these industries would be the sticky factor; the ratio of daily active users (DAU) to monthly active users (MAU). The aforementioned ratio shows the probability of a new player that tries the game once becoming a daily user. This performance indicator is of great importance as the daily users are the most likely their spend money on the game and convince their colleagues and friends to play as well. Some other important indicators include the gross gaming revenue (GGR), the turnover (total bets in game currency), the active days and users, the days of activity per user and the turnover per player. Analyzing these ratios allows developers to draw analytical conclusions regarding their key performance drivers, their customer database, and revenue streamlining decision-making processes.

Cloud gaming is revolutionizing the video gaming industry in a similar way to how Netflix changed the streaming service industry. Consumers will no longer need the most powerful and expensive hardware to enjoy the best possible gaming experience. This change bears good news for the video game consumers as well as the game developers. Concerning the implementation of cloud gaming all around the world, there are still a few steppingstones to a widespread adoption. These steppingstones could be 5G limitations, infrastructure, bandwidth competition, and sustainable business models.

Mobile Gaming

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Tetris appeared as the first mobile game in 1994. Three years later in December 1997, Nokia launched the very successful game SNAKE, which has since become one of the most-played video games worldwide. In 2007 the debut of iPhone opened a new era for mobile gaming. The mobile games since then have fantastic artwork, high definition graphics, real-life movement and sound effects. Following the release of iPhone and the launch of App Store, a number of very successful mobile phone games were developed, including Angry Birds in 2009, Plants vs. Zombies in 2010, Fruit Ninja in 2010, Cut the Rope in 2010, Temple Run in 2011, Candy Crush in 2012, Flappy Bird in 2013, 2048 in 2014, and many more. The Mobile Gaming Industry now is a multibillion industry growing on the back of rising number of Smartphone users across the globe. Multi-functionality of smartphones and widespread and diverse user-base across the globe offer a huge opportunity for the mobile game companies to expand digital gaming phenomenon to mass audience.

Most mobile games are based on “Free to play” model, which means these games are free to download and play but contain micro transactions. Another model is “Pay to play” or “Premium”, in these types of models the users are required to pay before playing. The model that generates the largest percentage of revenue is “Freemium”, a combination of the two types mentioned above. Freemium is achieving monetization from two ways: direct and indirect. In-app purchases (IAP) represents direct monetization, with 53% of a developer's revenue coming from in-app purchases. IAPs also let developers manage their sales directly. Indirect monetization comes from advertising, and the best example is Fruits Ninja of Half Brick, this game monthly generates \$400,000 from Ads only.

The mobile games market can be segmented based on devices, operating system, game genre and geography. Based on devices, the market can be bifurcated into smartphones and tablets. Android, iOS, and Windows are the three major OS platforms on which mobile games are developed. Although Android OS accounts for a significant volume of game downloads, iOS is expected to generate higher revenue owing to the paid nature of applications and games. The main game genre includes strategy, action/adventure, puzzles, RPG (Role Playing Game), quizzes, educational, card games, harvest build and simulation. The U.S., Brazil, and Mexico are expected to emerge as lucrative markets for online mobile games in terms of growth potential as well as monetization. The Asia Pacific market accounted for the highest revenue share of more than 45% in the global mobile game market. Europe and Middle East regional markets are also expected to witness high growth potential. Key players in the mobile games market include Tencent, Take-Two Interactive Software, Electronic Arts, Activision Blizzard, CyberAgent, GungHo Online Entertainment Inc, Microsoft Corp, NetEase, Niantic and The Walt Disney.

2019 is a year with explosive investment growth and acquisition activities in both gaming and the wider gametech industry, and this trend continues in 2020. Zynga, maker of social media game Farmville, has been highly acquisitive. In June 2020, Zynga acquired Turkey's Peak Games for \$1.8bn, expanding its active daily users by 60% with the deal. And in August, Zynga acquired 80% of Rollic, a mobile games developer and publisher with a portfolio of popular hyper-casual games, for \$168M, and will acquire the remaining 20% of Rollic over the next three years. Another mobile game developer that has continued to be acquisitive during the COVID crisis is Sweden's Stillfront, which in addition to the \$400M acquisition in January of US-based Storm8 also bought Candywriter in April for US\$74M. Meanwhile, in May mobile advertising firm AppLovin Corp. acquired social games developer Machine Zone in a \$500M deal. Tencent has also taken a stake in French mobile games company Voodoo. The minority investment gives Voodoo an enterprise value of \$1.4bn, making it the first “unicorn” company in the fast-growing “hyper casual” gaming market. In recent years, big players hope to pick up as many

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assets as possible through M&A and not to get left behind by the leading companies, whether they are already leading or not. Some companies have grown mainly through M&A, like Embracer, who were tiny several years ago, but have executed a successful M&A strategy. Mobile has been in hyper-growth, and there's been lots of whitespace for small companies to grow. Also, many founders and VC are looking for liquidity events. It's becoming more apparent that mobile gaming is poised to be a deal-making hotbed in the coming years.

The coronavirus crisis has proved a bonanza for video game makers, as shut-in consumers turn to digital distractions in greater numbers and for longer sessions than ever before. While the sector's big listed groups such as Nintendo, Activision Blizzard and Take Two have enjoyed share price rises of more than 25% since early March, a clutch of mobile gaming studios, many privately held, have enjoyed the real windfall.



In 2019, global mobile game revenue grew to \$68.5bn. Newzoo estimates that by the end of 2020, that number will hit \$76.7bn, a 12% increase. In the future, 5G will continue to power advancements in cloud gaming. By expanding the range of possible gaming experiences and creating more accessibility to traditional gaming titles, cloud solutions are likely to contribute significantly to the value of this rapidly growing market. What's more, hardcore gamers will pay a monthly fee for a subscription services, but more casual gamers won't. In March of 2019, both Apple and Google announced their respective subscription services. Both Apple and Google are offering game subscription services - rid of in-app purchases and ads - to consumers for a monthly fee. Moreover, hyper-casual will be established itself as its own genre. 2019 was a year of explosive growth for hyper-casual games, with IPM (Installs Per Mille) growing 70% YoY. In 2020 the genre tends to stabilize and establishes itself as its own genre. Finally, studios will see the benefits of aligning their monetization and marketing teams. In 2019, a number of game studios, mostly in the hyper-casual and casual space, began merging their UA (User Acquisition) and monetization activities into one unified team. The goal of this alignment is to ensure that one person or group of people are working closely together to see the full picture of the game's growth. In 2020, studios from an array of genres will see the advantage and ultimately unify the two teams.

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eSports and Streaming

The beginning of eSports can be traced back to 1972 when Stanford University organized a student tournament in the game *Spacemar*, in which the winning team received a year's subscription to the *Rolling Stone* magazine. Netrek, introduced in 1988 and written almost entirely in cross-platform open source software, is today considered the first online sports game and credited with starting a new era of internet gaming, where users can compete in real time without having to be in the same location. The growth of online gaming in the 1990s was popularized by large eSports competitions with monetary rewards, which were filmed and available to purchase on video. The increasing internet connectivity largely benefited PC gaming and brought about the creation of professional gaming leagues, including the still widely popular Counter Strike and Warcraft.

The 2000s was a popular time for televised eSports, best established in South Korea where games such as StarCraft had dedicated television channels. During the 2010s, eSports grew substantially in terms of viewership and prize money, going from about ten tournaments in 2000 to 260 in 2010. The emergence of online streaming services, such as Twitch which was launched in 2011, have helped the growth of eSports in this period, and remain the most popular method of watching tournaments. By 2013 users of Twitch watched a combined 12 billion minutes of video on the service. Lately, renowned colleges including Ivy League schools began granting scholarships for students to play eSports professionally for the university. Recently, due to the Covid-19 pandemic putting a stop on nearly all live sporting events, eSports and video game streaming have surged in popularity and managed to attract fans beyond their typical user base of youths born after the year 2000; however, 79% of gamers are still under 35.

Video games streaming platforms (VGSPs), such as Twitch, allow creators to live stream their content, involving mainly video games but also creative topics such as music, art and culinary content. VGSPs major appeal is twofold: creators can interact with their audience through video, audio and chat, whereas viewers can donate to creators during streams. The platforms usually operate on a freemium model which means they are free-of-charge to both streamers and consumers but include advanced features for paying subscribers such as ad-free content and access to subscriber-only competitions. VGSPs make money through a revenue-share agreement with content creators, where they usually take about a 50% cut of every subscription sold through their platform. In order to monetize on its free users, the platforms include video ads on their pre-recorded videos and live streams. To advertisers, VGSPs are particularly attractive as the average user is 21 years old and thus can have highly personalized ads, is more susceptible to advertising and is a potential customer for years to come. In addition to their service, many VGSPs sell branded merchandise which, because of the extreme fandom displayed by many users of the platforms, can be sold at high margins.

Modern eSport teams operate similarly to conventional sports teams, with revenue streams mainly from sponsorship and advertising, tournament prizes, broadcasting rights and merchandise sales. Sponsorships accounted for the vast majority of eSport revenue in 2017 (74%) and attracted many well-known sponsors, mainly from the IT industry. However, the relative short life of popular games proves difficult for teams to generate sustainable revenue from sponsorship deals, as a games popularity can fade within a year. Tournament prizes typically do not go to eSport teams, but rather to individual competing team members. While the teams do not directly benefit from prize money, winning tournaments generates brand awareness and attracts sponsorship revenue. The increasing popularity of eSports has led to growing tournament prizes, with the largest single tournament prize pool for eSports amounting to \$24.8M as of 2018. Subscriptions to streaming services are another source of revenue for individual team members. Arguably the most well-known eSports player in the world, Tyler Blevins (aka Ninja), revealed that he makes \$500,000 per month from his 160,000 paid Twitch subscribers. The most popular games streamed on VGSP's include Fortnite, League of Legends and Call of

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Duty. Typical expenses for eSport teams include player salaries (accounting for around 50%), equipment and accessories, and training facilities.

There are over 2.5bn gamers worldwide; as millions of people escape poverty and the price of technology decreases, many more will join each year. The importance of live streaming in the \$180bn video game industry, which generates more revenue than movies and music, is signaled by the tech giants' dominant presence in the business of VGSPs. The streaming industry, although becoming increasingly competitive, still remains a highly concentrated market. Twitch, founded in 2011 and acquired by Amazon in 2014 for \$970m, is by far the most extensive VGSP in terms of hours watched—over 9bn in 2019—thus encompassing 73% of the market. The platform has 1.5m users at any given time and an average of 17.5m visitors a day. Each month more than 4m unique creators stream on the site. The second most popular VGSP is YouTube Gaming with around 2.5bn hours watched in 2019, thus having a 21% market share. In third place comes Facebook Gaming, with 356m hours watched in 2019, which accounts for only 3% of the market. However, the social media giant's dedicated streaming platform had 200% watch hour growth in 2019, making it the fastest growing VGSP. Global live game streaming is projected to grow at a CAGR of over 19% during the forecast period 2019-2025.

Although Twitch is still undisputedly the biggest player among the streaming platforms, rapidly growing newcomers like Facebook Gaming show great potential to take on Twitch in the near future. Moreover, new entrants such as Twitter and telecom giants are becoming increasingly interested in the growing sector of VGSPs. Recently it has been reported that Tencent Holdings, China's biggest video game and social media company, is planning to merge Douyu and Huya, two VGSP companies it already has stakes in. The companies are the country's most popular streaming sites, with a combined market share of 80%, 300m users and a market capitalisation of \$10bn. Through the merger, Tencent seeks to consolidate its dominance in the industry and eliminate the fierce competition between its two game streaming assets.

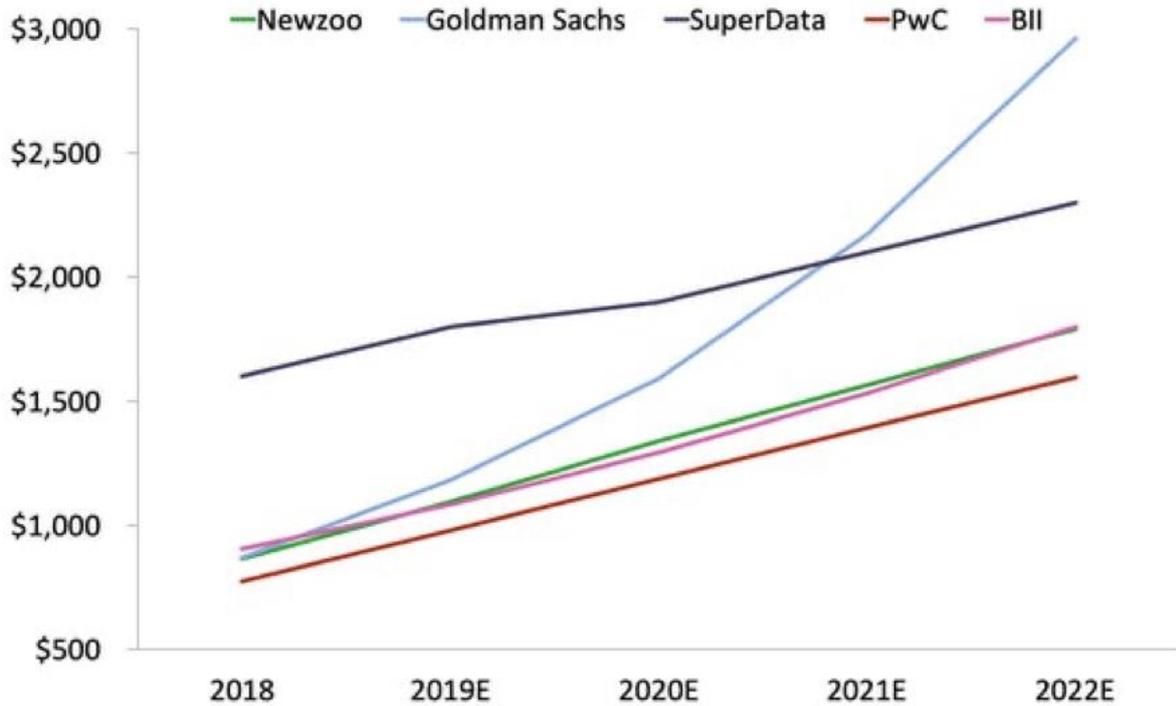
When it comes to eSports companies, the market is much more fragmented due to the value of the company depending mainly on its teams' performance in tournaments and brand name players on the roster. As of 2019, there were over 13 eSports companies valued at or above \$100M, with an average valuation of \$217M—up by 52% from 2018. One of the two highest valued companies in 2019 was Cloud9, with a valuation of \$400M and an estimated revenue of \$29M. The second was Team SoloMid, with estimated revenues of \$35M and the same valuation of \$400M, having grown by an astounding \$150M since 2018. In third place came Team Liquid with a \$320M valuation, up by \$120M since 2018, and \$24M in revenues. The top eSport companies have north of 50 players who compete across multiple leagues and games. Global revenue for eSports is projected to reach \$1.65bn in 2021.

The vast majority of eSport companies are cash flow negative as they continue to grow their rosters and brand name. This has led to teams vigorously raising capital, the bulk of which came from venture capital investors and more recently from private equity. In 2017, there were 74 deals worth \$1.52bn involving eSport companies, up from six deals worth \$34M in 2008. Recently, eSports companies are exploring their options in the public markets in order to raise more capital. London-based Guild eSports, backed by famed retired football player-turned-investor David Beckham, is planning an initial public offering on the London Stock Exchange in order to raise £20M to pay for the recruitment of 20 professional players. The top eSport companies had an average enterprise value multiple of 13x sales in 2018, compared to Facebook and Amazon having 7.4 and 3.8x revenue multiples. This has raised concerns that, if mainstream sponsors and advertisers are discouraged by the short-lived popularity of games, revenue projections could be slashed, and high valuations will tumble.

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Global Esports Revenue Projections Through 2022

Millions



Source: Business Insider Intelligence, PwC Global Entertainment & Media Outlook 2019-2023, Newzoo, SuperData, Goldman Sachs

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