Analysis of the Video Gaming Industry

Yijie Liang[1,*]

[1] *Department of Art and Science, New York University, New York, NY 10012, US*
* Corresponding author. Email: yl7756@nyu.edu

ABSTRACT

Since its debut as a new medium for creativity and invention, video games have been a motivating element in creating several technologies. Since its inception forty years ago, the video game industry has gone from obscurity to a multi-billion dollar powerhouse. Games are being played at a quicker rate than ever before by people of different ages, both male and female, worldwide. It's an exciting time for business because of the influx of new participants and the advancement of technology. A company's ability to thrive in a rapidly evolving market will be determined by its ability to keep pace with the constant shifts in the market landscape. By studying historical trends and technological advancements, it may be possible to understand where the industry has come from and its direction in the coming years. "Video games" have evolved into interactive art that entices players to discover and create new things. We are drawn to games because of their pleasant, collaborative, and competitive natures, this is why they've become so popular in recent years.

Keywords: *Video Game, Different Platforms, E-sports*

1. INTRODUCTION

The first known game has its origins in 3500 BC in ancient Egypt. A game can be something that you do. People around us are always having fun with games. A game may be found in every corner of our surroundings. What is it about them that makes us want to spend time with them? They compel us to take action, compete, and cooperate with one another in order to survive. It's hardly surprising that our enthusiasm for gaming has crossed over into the virtual world, as we're always attempting to turn everything into a game. As soon as video games were invented, there have been a number of factors at work driving them forward. Video games are only possible because of the collaboration between developers, publishers, and players. See where the video game industry has been and where it is going by taking a past, present, and future journey. This is how the video game business will change in the next few years: new platforms and partnerships between developers and publishers will be necessary. The Internet will also be important.

Computer technology was originally intended for serious computations and other research, but it subsequently evolved into a medium for video games[1]. 'Computer Science' was becoming an academic discipline at The Massachusetts Institute of Technology in the 1950s. Around the same time, the university began offering a course and established a department devoted to 'Artificial Intelligence.' Concurrently, the National Aeronautics and Space Administration [NASA] began expanding support and financing for fundamental computer research towards the development of Artificial Intelligence, and the institution acquired a minicomputer, the very first generation of personal computers, as a gift [1].

Early game creators in America thrived thanks to support from both the commercial and public sectors. MIT's Tech Model Railroad Club, a student organization, began creating software and the minicomputer at the same time. 'Hacks' were used to describe these modifications. The TMRC was already hacking other games prior to Steve Russell's development of Space War. Chose, table tennis-inspired table tennis games and simple solitaire were all featured in these computer games. At the time of their release, these games were far less aesthetically appealing and dynamic than Space war.

As early as 1971, Nolan Bushnell took Space war from a minicomputer to coin-operated arcade games. During his time as an engineering student at the University of Utah, in 1962, Bushnell had some experience with Space war. Space war was invented by Ted Dabney and Bushnell in 1970, when they built a gadget that linked to a television to play the game. Using

the name Computer Space, he referred to the game as such. Nutting Associates, Bushnell's employer at the time, produced Computer Space in 1971 and marketed it with a television set. It didn't catch on because it was too tough for players to master. Bushnell and Daney founded their own video game development business, Atari, a year after leaving the corporation. Pong, a video tennis game invented by Al Alcorn, was also created by Bushnell in the same year. Using a coin-operated machine at a neighborhood tavern, they conducted a field test. The machine broke down in less than a month because it was overloaded with quarters [2].

An early American video gaming company was born thanks to Pong's popularity. Other corporations followed suit in the late 1970s. Othello, a video game developed by Japanese corporation Nintendo, was launched in the United States. Japan's Midway Games imported Space Invaders for the American market and it shattered all previous sales records at that time (Kent [2].

New technology breakthroughs have helped video games improve throughout time. In the late 1970s and early 1980s, the introduction of computer chips and circuit boards ushered in a new era in computer technology. Consumers had to buy a full console with an inbuilt chip that only supported one or a few games at a time in the early days of video gaming. Gaming firms were able to include microprocessor chips into cartridges because to the advancement of the microprocessor. Personal gaming consoles were the only places where the cartridges could be used. Compact discs, which are now the de facto standard for all of today's top-selling gaming systems, finally superseded these cartridges [2].

As video game consoles and personal computers advanced, so did their technology. Computers become more enticing for gaming because of advances in sound and video cards and processor CPUs. A powerful portable disc known as a CD-ROM [computer disc read-only memory] opened the door for entrepreneurs, allowing them to produce personal computer games. Myst, Wing Commander, and Ultima Underworld by Cyan Studios, Origin Systems, and Looking Glass transformed the PC into a game console. Users were able to play MMORPGs on the internet, while mobile devices now support high resolution video games, and recent advancements have allowed for three dimensional spatial interactions through platforms such as the Nintendo Wii and Kinect for Microsoft Xbox[3].

2. THE *DEVELOPMENT OF THE VIDEO GAMING INDUSTRY*

Game digitization has created an entirely new realm of possibilities. You can do anything if you put your mind to it. Changes in the rules of our physical universe can be made to generate previously impossible experiences. New views can be unlocked by immersion in new realms,

and the discovery of new galaxies might lead to doubts about the nature of reality itself. In the end, what is life all about? Where do we fit into the scheme of things? We've all wondered this question at some point: "How did we get here?"

Video games had been discussed for decades, but it wasn't until April 1972 that they were finally realized in the NIMROD computer that they became a reality [4,5]. In 1951, Baer worked as a radio and television engineer for Loral, a business that specialized in electronic components. Baer's employer said one day, "Build the finest television set in the world," so he did. Ralph came up with the brilliant concept of incorporating interactive games into the TV to attract and entertain clients. In response, Ralph's supervisor said, "Just build the damn TV set." There were no more "Baer's TV games" until 1966, 15 years after they first aired. On a hot summer day in the 1960s, while waiting for a coworker at a bus stop for Sanders Associates, where he worked on defense electronics, Ralph Baer came up with the concept of playing video games on televisions he saw around the office. His plans for a game called Chase Game kept going, and in less than six months, his prototype was ready to go into production [6]. For the sake of his project, Ralph decided to show Herbert Campman, Sanders' Corporate Director, the game he had worked on. Herb was impressed with Ralph's idea, but he said it would need some changes before it could become a reality.

As the tidal wave approached, the world was unaware of it. An Atari co-founder attended a Magnavox product demonstration in Burlingame, Calif., on May 24th of that year. When Nolan was there, he played the Odyssey's Ping-Pong game. A coin-operated arcade game was the next project for Nolan after this incident. When PONG was released in December of that year, the world was forever changed. The creation of new video games came to a halt in the early to mid-1980s. In the end, retailers decided that gamers had finally grown out of their craze. Since video games were no longer being sold, it was nearly impossible for game developers to get their products onto store shelves.

In Japan, the Famicom (family computer) was first made available to the public in 1983. Following a recall and reprint, the Famicom became a big hit in Japan, despite initial hardware issues. In spite of the fact that Electronic Games magazine said in March of that year that "[shipping the Famicom] would be a folly on Nintendo's part because the videogame business in America has nearly collapsed," Nintendo began contemplating a North American release in 1985. Nintendo was unfazed, but it would be tough to persuade merchants to stock their goods. As soon as the Famicom was released in North America, it was renamed "the Nintendo Entertainment System (NES)." Being called an "entertainment system" instead of a "video gaming

system" helped to distinguish it. The next decision they made would profoundly impact both Nintendo and the video gaming industry [7]. Nintendo decided to crack down on unauthorized third-party games to avoid a repeat of the video game crisis that occurred only a few years ago.

The development of digital distribution and internet gaming boosted video game sales in the new century. Compared to console gaming, digital distribution significantly impacts PC gaming. Although this was not common prior to this time period, some prominent corporations released games for consoles and personal computers. The Internet has changed how video games and consoles are made in the future. Ga·mers can now interact and compete with each other in ways that have never been seen before.

Independent developers have taken more significant risks because of the increased support for digital distribution. Since creators didn't have to worry about appealing to a large audience, they could create more niche and distinctive independent games [8]. On the user's side, digital distribution has had a significant influence. Modding, or tinkering with a video game's code, has become increasingly popular in recent years. All kinds of things may be done to change the game, from fixing bugs to developing a new one. As the trend grew in popularity, it became easier for modders to share their work with other players via digital distribution and the Internet. Counter-Strike is one of the fascinating outcomes of this trend. Over 25 million copies of the first-person shooter Counterstrike were sold in 2011. This is a one-of-a-kind game since it is a modification of another game: Half-Life. Life's half-technology was tinkered with to create Counter-Strike, a completely separate game. Many game designers even encouraged people to try changing their games as the practice became more popular and is still used today.

It took consoles a bit longer to get on board with digital distribution and the Internet compared to PC users. A new console, called the Dreamcast, was released in 1998. The PlayStation 2 was released in 2000, and the Xbox was released in 2001. Nintendo's GameCube was released in 2001. However, not all of these platforms could use the exact implementation of the idea. As a result, the Dream cast's online community didn't have a huge following, despite the media praising it highly. If you wanted to play on the Internet with the GameCube or PlayStation, you'd need an extra adaptor to do so. Because of Nintendo's lack of support and the lack of titles that make use of online multiplayer, the feature has become primarily obsolete on the console. The popularity of online multiplayer on Sony and Microsoft consoles has led to the success of several popular titles.

3. CURRENT SITUATION

Even now, the video game business is in a state of flux. Only those companies that can regularly produce high-quality games and gain a following can remain in business for the long term. A lot has changed, even if the industry's unpredictability is still present. Third-party developers are no longer under the control of console makers, who once dominated the industry and exerted their influence on them. Anyone can do it now when it comes to making money in the gaming business. Fans of innovative ideas are eager to help content producers by donating money via crowd financing.

Moreover, there are new channels for developers to engage and share ideas with their followers and new ways to raise funds for their projects. As a result of reducing their reliance on large publishers solely interested in making a profit, independent developers now have more creative flexibility. They were conferring worldwide to encourage new ideas and originality in the subject. The capabilities of video games are continuously being expanded by their creators.

However, the current definition of "AAA" has evolved somewhat. Many AAA games are proclaimed months or even years in advance of their release. As a result of the industry-wide belief that "large budget" equates to "huge sales," the phrase has lost its original meaning and has become increasingly associated with "big budget." Companies think that investing a lot of money in research and development is the best way to make money, and recent successes proved this to be true.

3.1 Trend reversal

In recent years, the video game industry's lack of innovation has been a major topic of discussion. It has been questioned if major AAA games are innovative because many of them are sequels or spinoffs of previous games. However, their bottom lines haven't. These games continue to sell and generate significant income for their developers, despite the fact that they have received a lot of criticism over the years (in other sectors). Users bemoan the paucity of new ideas and variety in popular games, yet they continue to buy sequels and rehashes. The Stanley Parable, Braid, The Stanley Parable Remake, and modern games such as Mine Craft and Braid bring back the inventive, creative, and distinct user experiences that the industry seemed to have lost.

3.2 New platforms and their Impact on PC games

Gamers now have more options than ever before to find cutting-edge games and interactive entertainment. This is fantastic news for the industry. Popular gaming consoles like Xbox and PlayStation have received upgrades in the last few years, as have new platforms like

mobile devices (such as the iPhone and Android) and computer-based platforms (Steam and Facebook). Contrary to popular belief, these new platforms demonstrate that consoles are not the best way to enjoy video games.

The arrival of touch-screen mobile devices has transformed the industry. People who previously had little interest in gaming have become avid mobile devices users. More than $1.78 billion was made in mobile gaming sales in the United States alone last year, with around 40% of the population participating in this kind of entertainment. New ways to play PC games are becoming increasingly popular as well, not just on mobile devices. Steam and Facebook are two of the most well-known examples. Steam is a PC gaming platform that provides players with instant access to tens of thousands of titles. Many new games are released every day, thanks in part to the active participation of Steam's community of users. Players and developers are now more connected than ever before, thanks to Steam, which is one of the primary reasons for its explosive growth. Year after year, these figures have risen, and they show no signs of abating.

3.3 The solution to remedy the impact

In the last several years, new platforms for game development and play, as well as for project funding, have emerged. Crowdfunding systems, such as Kickstarter, Indiegogo, and a slew of others, have been developed to connect artists with potential investors. If you have an idea that you want to share with others, you can post it on one of these crowdfunding platforms and have it seen by potential supporters.

4. THE FUTURE OF THE VIDEO GAME INDUSTRY

The future of the video game business has never looked more promising. Innovations in technology are reshaping the creative landscape. A new generation of platforms is reshaping the industry and allowing customers to take on the role of creators. While Sony, Nintendo, and Microsoft have long dominated the "console war," now PC and mobile gaming are challenging the future of console gaming. Experiencing ongoing platform conflict, the three major console manufacturers must take some action to stem the tide of PC and mobile gaming. However, PC gaming has taken over the industry after the advent of Microsoft's Xbox One and Sony's PS4. A growing number of people in the video game industry think that PC gaming will beat console gaming by the end of the year if it hasn't already.

4.1 Virtual Reality

When it comes to innovation, virtual reality was simply an idea until recently; today, it's a reality. Many individuals gave up on the concept after hearing that virtual reality would arrive in the "near future," many individuals gave up on the idea. However, many people are unaware that virtual reality exists and is being used in various sectors; it has simply not made it to mainstream merchants. The army is increasingly using virtual reality to train forces and simulate aircraft and conflict. Aside from the educational and entertainment uses of virtual reality (VR), it is also utilized for medical simulations, to aid individuals with impairments, and for other purposes.

4.2 E-Sports

Competition in gaming has been around since the 1970s, but the rise of professional gaming in the eSports industry is a 21st-century phenomenon. In the early 2000s, the professional gaming circuit was bolstered by the establishment of bodies like the "World Cyber Games (WCG)" in 2000 and the "Major League Gaming (MLG)" in 2002. As eSports' popularity grows, one can only presume it will positively impact the video game business, which is estimated to be worth billions of dollars. Websites like Twitch are revolutionizing video game consumption. Tv. In addition to playing video games, today's gamers also view them on television and their computers. According to eSports, in particular, games and gamers are becoming increasingly socially acceptable, notably in the United States of America (professional gamers are already some of the biggest celebrities in many Eastern nations like South Korea, China, and Japan). It is good news, because "video games" may be enjoyed in many different ways.

Right now, we can claim that the whole esports business is experiencing a boom. Not just for professional players and esports teams but also millions of other people involved in the industry. Back in 2010, when most people did not notice esports, those who participated were labeled "ignorant" or "uneducated." Because of the rigorous age limitations of e-sports, the majority of professional players at the time were eighteen-year-old college students who had dropped out. In China, many parents consider computer games as monsters that would wreck their children's futures. It has also led to absurdities, such as sending my child to an internet addiction rehab facility for "electrode therapy." Everything seemed to be going downhill under these conditions.

But first, let's look ahead to 2022. The format of esports has evolved considerably after twelve years of growth, as the first generation touched by the game joined the society and grew up. According to Newzoo's analytical statistics, the worldwide viewership for esports is expected to reach 586 million in 2020. This population will climb to 645 million by 2022, indicating a 12% increase year on year. According to industry analysts, there were only 134 million in 2012, representing a more than fourfold rise in eight years [9].

Because of the rising popularity of esports on social media, esports teams have a promising future. There are several methods to monetize in the esports sector. Existing game mechanisms allow for a variety of income streams, such as in-game wagering. As a result, many people may be asking how professional esports teams generate money. They are comparable to traditional sports teams. To begin with, there are numerous clubs created by regular esports enthusiasts, but many more are controlled and owned by large corporations from a variety of industries. For example, South Korea Telecom sponsored one of the most well-known League of Legends teams, SKT, currently known as T1. Furthermore, clubs with great players will be able to profit from ads, which account for about 60% of overall industry income. The final source of money is tournament winnings. The International 2021 DOTA 2 Championship has the most significant prize money. The overall prize pool is 40 million dollars, with the winner receiving 18 million dollars [10].

Esports are available on various platforms, including PCs (computers), consoles (PlayStation), and even phones. However, the majority of the most popular competitive games are PC-only. Only PC versions of Dota 2, League of Legends, Counter-Strike, and Starcraft 2 are accessible. And I believe the fundamental reason for this is the lack of support for keyboards and mice. A gaming mouse gives unrivaled control and precision in first-person shooter games. Professional gamers choose them because they cannot accept anything less than immaculate accuracy. Furthermore, when we look at the large competitive games, we see that they all have one thing in common: they are all free to play. This implies they may attract more gamers regardless of their financial situation. Even people without a computer may go to an internet bar to play games at a reasonable cost. However, this does not work with consoles. A console game typically costs roughly $60. In this case, some consumers will be unwilling to pay for a game they may or may not enjoy.

5. CONCLUSION

From its inception to its conclusion, the entire industry is being revolutionized. And because the video game business comprises so many different sections and individuals that perform a variety of functions, there is a great chance that might happen in the future. In the future, cutting-edge technology, ground-breaking games, and customer involvement in the design and development process will all be part of the game-playing revolution.

REFERENCES

[1] L. Haddon, Electronic and Computer Games: The History of an Interactive Medium, Screen, vol.29, issue 4, 1988, pp.52-73. DOI:10.1093

[2] S. L. Kent, The ultimate history of video games: from Pong to Pokémon and beyond: the story behind the craze that touched our lives and changed the world, Roseville, Calif., Prima Pub, 2001

[3] J. O. Soh, & B. C. Tan, Mobile gaming, Communications of the ACM, vol.51, issue.3, 2008, pp.35-39. DOI:10.1145

[4] P. Clark, The Play's the Thing, Byte, vol.7, no.12, 1982, pp.8-10

[5] C. Conners, Wall Street Journal chart lists Twitch.tv fourth in U.S. peak traffic, Gamers, 2014. https://www.gamespot.com/articles/elden-ring-millicent-quest-guide/1100-6501520/

[6] M. Graser, 'Grand Theft Auto V' Sales More Than Double Take-Two Interactive Profits, Variety, 2014. http://variety.com/2014/biz/news/gtav-grand-theft-auto-v-sales-more-thandouble-take-two-interactive-profits-1201084902/.

[7] Nintendo, Consolidated Sales Transition by Region, 2014.http://www.webcitation.org/5nXieXX2B

[8] M. J. Irwin, Indie Developers Rise Up, Forbes, 2008. https://www.forbes.com/2008/11/20/games-indie-developers-tech-ebiz-cx_mji_1120indiegames.html?sh=4962f04473a6

[9] Newzoo, Global esports market report 2019, Electronic Journal of Business Ethics and Organization Studies, vol.24, no.2, 2019

[10] Esports Earnings, The International 2021, 2021. http://www.esportsearnings.com/tournaments/49174-the-international-2021.