Wagner Road Capital Management

The Evolution of the Video Game Industry

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Contents

Introduction

This topic is a combination of timely and timeless. As the pandemic rages, there are certain industries that will be insulated from the economic effects of the virus, and this includes video games. Stay-at-home orders encourage indoor activities, and video games are the stereotypical indoor activity. They are also fueled by digital downloads, a source of revenue that does not require going outside.

That is one reason for learning about this industry now, but there's a bigger reason behind this timing. The video game industry is cyclical, and the next cycle will begin at the end of 2020. This is the time to start thinking about it.

But for what investment time frame? I am always looking at the long run.

In the short run, investing is sometimes compared to driving. The comparison is easy to understand—you can't see what's ahead by looking in the rearview mirror. And as recent market moves have proven, the performance of a specific stock or sector cannot be predicted entirely by its recent trends. There is also a significant challenge to forecasting the short-term future—there is a reason that we drive slow on foggy mountain roads.

The long run is different. The long run functions more like biology. Remnants from past generations exist in the present, and understanding where they came from (and why they were successful) is a good way to get a better picture of what the future might look like. The conditions that affected past business decisions are still relevant for today's markets.

The video game industry seems like a young one made for young people, but it has a long history as the convergence of toys and technology. The earliest video game consoles were sold next to billiards and bowling balls. Mattel, the maker of Barbie, and Coleco, famous for its Cabbage Patch Dolls, introduced some of the first gaming devices.

As technology improved and the industry matured, video games became more of an experience than a toy. The scale of modern games matches Hollywood blockbusters, with budgets that top $100 million and entertainment time that can easily reach thousands of hours. Game developers are entertainment giants that deserve serious attention.

Even for people who have grown up with games, there are still challenges to understanding the changes going through the industry. Keeping up with the latest trends is exhausting, especially when gaming transforms from a primary leisure activity to a short-term distraction. When hours of game time is reduced to a few minutes a day,

some of the deeper cultural shifts become hidden. Games that are currently popular won't make as much sense to people who don't have time to try them.

Fortunately, in the same way that good music or good movies are easily recognized, good games can also be identified. There are universal rules about what makes a game entertaining or attractive, and those rules are much easier to see than the nuance of shifting trends. New types of games that transform a genre often become iconic, but their method of entertainment is always carefully studied by other developers, and better versions can come out within a year.

For video games, there is a range of innovations that come in a few basic types, and all of them are continuously improving:

- Better Graphics: From lines, to pictures, to 3d models, to realistic movie-like worlds, the past few decades have seen dramatic improvements in how games look.

- New Genres: As technology allowed better visuals, it also enabled more complex games. The first were simple arcade games, but they were eventually surpassed by more resource-intensive adventures games, shooting games, sports games, resource management games, and many others. Mobile phones now offer more casual games as well. There is something for everyone.

- Bigger Scale: There are still "indie" developer teams that only release smaller games, or only release a large game every few years, but gaming has become a big business. The rise of video game popularity came with a rise in the number of team members required to build a new game; the original arcade games of the 70s could be produced with a very small team, while modern teams can have hundreds of developers. This dramatic increase in scale is paralleled by the number of players who can participate in the same game; the maximum was once just two players, but modern multiplayer games can be populated with millions of players.

- Interaction between the player and the game has also been a central theme. The first joysticks were simple and only allowed a few directions. These evolved into controllers that gradually increased the number of buttons and possible movements. Now there is even more nuance, with cameras that can track every movement in the room and translate those movements to movements on a screen.

None of these ideas are relevant to a business history on their own. It's the combination of them all that simultaneously expands the way game developers and game publishers

make money. Games are becoming more digital, more mobile, and more competitive, and these features all introduce more ways to make money.

But we're getting ahead of the story. The first thing we should know is how we got to where we are.[1]

Part 1: Hardware (Consoles)

In the beginning, every new game required an entirely new system. Designing a new game was not like writing a new computer program. The mechanisms that control each part of the game had to be designed individually, like building a new computer specifically to run a single game.

As technology improved, electronic systems became capable of running more than one game, and the design process moved from placing microchips to programming. Over time, these game systems, called consoles, became more powerful, enabling more complex games and more immersive experiences. The competition shifted from which company has the best game to which one has the best "library" of games available for its console.[2]

The introduction of each new group of consoles is divided into different generations on the basis of what technology they use and when they were introduced. Each new generation was a race to reach the best combination of price, game library, console features, and timing. Getting any of those factors wrong meant that the company would struggle, but the most important was the game library. Missing on the game library could mean failing out of the industry, but getting it right could lead to success that extends to multiple generations.

The Golden Age of Arcade Cabinets (1970s to 1980s)

The spiritual predecessor to modern video game systems is the coin-operated pinball machine. First invented in 1872 and popularized in the 1930s, pinball machines became a cultural phenomenon that grew more sophisticated and more technologically advanced, slowly switching from mechanical systems to digital in the early 1970s. This shift, from mechanical to digital, generated the birth of the modern video game arcade cabinet.

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[1] The earliest years of the industry are wonderfully cataloged in *The Ultimate History of Video Games* by Steven L. Kent. The book ends abruptly in 2001, but I have been following the industry closely for the past 20 years.

[2] The most simplified way to understand the idea of a game library is to think of it as a movie store (or today's version, a movie streaming service). The store that has the largest variety of good movies (the best movie "library") will be the most popular.

It was the invention of the integrated circuit that made it possible to create a computer small enough to fit inside a "cabinet." This led to dedicated gaming devices called arcade cabinets that began to fill restaurants and bars. Small computers were made for games.

The most famous was *Pong*, created by Atari in 1972. As a result of this game's popularity, Atari quickly became the king of arcade cabinets, and followed the success of *Pong* with several innovative arcade games. At the same time, imitators and competitors began to appear; every new game was followed by a similar copy, and other developers learned from Atari's popularity. Midway, a company that published and distributed games but did not develop many of its own games, was Atari's primary competitor.[3]

The industry accelerated in the 1980s as a series of famously popular games were released for arcade cabinets in the US, primarily from Japanese companies:

- *Space Invaders*, developed by Taito in 1978 and distributed by Midway.
- *Pac-Man*, developed by Namco in 1980 and distributed by Midway.
- *Frogger*, developed by Konami in 1981 and distributed by Sega.
- *Galaga,* developed by Namco in 1981 and distributed by Midway.
- *Donkey Kong*, developed by Nintendo in 1981, introduced the world to Mario, the world's most well-known video game character.
- Atari also developed a series of iconic arcade games, including *Breakout* (1976), *Asteroids* (1980), *Battlezone* (1980), *Centipede* (1980), and several others, almost all of them representing important firsts in video game development.

While Atari maintained the dominant position in this market for many years, the competition eventually caught up with the company. In 1983, the video game industry crashed, and Atari collapsed (more on this later). Coin-operated arcade cabinets continued to be produced, but they were gradually replaced by video game consoles that could be played on a TV inside the player's home; video game players would no longer need to carry quarters to an arcade.

The golden age of arcade cabinets was marked by a few major acquisitions, but the one worth following is Atari. Warner Communications purchased Atari in 1976 and sold the arcade division to Namco in 1985.

[3] To understand the role of a publisher, think about the book writing industry. The game developer in this comparison would be writer, while the game publisher would be the same as the book publisher. It is common for game developers to be their own publishers or be owned by a publisher.

The Console Wars (1970s to now)

The console wars are traditionally divided into generations by time period and technology. Each generation represents a major advancement from the previous one, and every console had at least one feature or advantage that made it different from the others, but what's important for this summary of the market is the general strategy for competing within each generation. Where those strategic thoughts are significant, I made sure to highlight them.

First Generation

The first home video game system was made by Magnavox in 1972, but it was Atari's conversion of *Pong* into *Home Pong* in 1975 that marked the introduction of home consoles. Like the arcade cabinets of the time, *Home Pong* was also widely copied by many other companies entering this new industry. But these consoles were primitive. Gamers could only play the games that were hard wired into each individual console.

Second Generation

The second generation of consoles created a new market by adding microprocessors in the hardware (inside the console) and storing the games on removable cartridges. Instead of buying an entirely new system to play a new game, gamers could buy one system and then buy many games to play on one console. A console could now have a game library.

The market blew wide open: it now included serious tech companies such as Fairchild and RCA, but also toy companies such as Mattel and Coleco. This generation saw the release of 18 different consoles.

Among this chaotic competition, it was Atari, with its Atari 2600, that owned this market. The Atari 2600, which sold 30 million units, still ranks among the best-selling consoles.[4] The variety and quality of Atari games, some of which were transferred from its arcade business, were unrivaled. No other console of that generation came close. In 1981, Atari achieved a 75% market share in the console game market.

But overconfidence overcame the industry. Console makers, believing that gamers would buy *any* game, regardless of quality, flooded the market with a series of terrible games. The defining symbol of this excess was Atari's *E.T.* game, rushed into production and released in December of 1982. It is widely regarded as the worst game of all time, and it is considered the game that killed Atari and triggered the video game

[4] It continues to be popular today among collectors of old computer hardware.

crash of 1983.[5] The crash lasted for two years, devolving into price wars that wiped out most of the smaller console producers.

8-Bit Generation

In 1985, Nintendo revived the industry. It already had a successful console called the Famicom in Japan, but it struggled to extend the system's popularity. Nintendo had approached Atari in 1983 about a partnership to bring the Famicom to America, but they could not make a deal before Atari's collapse.

Nintendo eventually persuaded skeptical American retailers to sell the new system as a toy (no one wanted to try selling video games). The Famicom, redesigned and renamed the Nintendo Entertainment System (NES) for the US market, filled the void that Atari left behind. It became the most popular console of the 8-bit generation, earning a 94% market share in North America by 1989, and going on to sell over 60 million units. Nintendo's console was more advanced and its games were simply better; *Super Mario Bros*., a game that was packaged with most NES consoles, is still one of the best-selling games of all time. Nintendo cared about quality, and this attention to what customers wanted made it the master of the 8-bit generation.

16-Bit Generation

Nintendo followed the success of the NES with the 16-bit Super NES (SNES), released in the US in 1991. But a serious new competitor had emerged. At the end of 1991, Sega's 16-bit Genesis console had a 55% market share in the US, while Nintendo had 45%. The SNES was better, but the Gensis had more games (a larger video game library).

Competition between the two rival companies became bitter; both fought for the attention of game developers and raced towards the introduction of CD ROM games as PC computers began to encroach on the games market. In the end, the SNES won, selling almost 50 million units, while the Sega Genesis sold 30 million units. The competition, however, was close, and both companies nearly exhausted their resources preparing for the next generation. 1994 became a bad year for the industry.

[5] It is more accurate to say that poor management killed Atari. Warner Communications, by this time the parent company for Atari, destroyed the video game company's culture and replaced it with bureaucracy. The vision from the company's original team was stifled by demands from the parent company. Key employees were easily poached by more successful competitors. From 1983 to 1985, Atari's different divisions were torn apart and sold away. Atari produced consoles into the mid-90s, but they continually declined in popularity until the company left the market.

Fifth Generation

In the fifth generation of consoles, computer technology improved enough to allow truly 3D games. In this generation, it was Sony's PlayStation, released in the US in 1995, that rose to the top. Originally intended to be a collaboration between Nintendo and Sony, Nintendo arrogantly overplayed its hand, believing that it could win any console war by default. Insulted by Nintendo, Sony decided to develop the PlayStation on its own.[6]

Sony's plans were different from the traditional console competition. It focused heavily on attracting developers to its new system, and encouraged a large library of good games to be developed quickly. Sony and Sega used disks for their console systems, while Nintendo used a much more expensive cartridge. Sony's console was also the cheapest available on the market, and the only one that targeted a demographic beyond teenagers.

By the end of this console generation, the industry's ancillary competitors were almost entirely pushed out of the market; only Sony, Nintendo, and Sega were relevant. The PlayStation, which stayed in production for more than ten years and had a game library of almost 9,000 games, sold over 100 million units. Nintendo's N64 system sold a respectable 30 million units (still far behind Sony), while Sega began to fade. Sony maintained a 47% worldwide market share throughout this generation, while Nintendo rose from 28% to 40%, and Sega fell from 23% to just 12%.

Sixth Generation

In the sixth generation of consoles, Sony did even better. Sony followed the success of the PlayStation with the PlayStation 2 (PS2), which it released in 2000. Once again focused on its game library, Sony chose to make the PS2 "backwards compatible" with the original PlayStation game console. This meant that anyone who bought a PS2 would be able to play all of their older PlayStation games *and* any new games that were developed for the PS2. The backwards compatible strategy had been used by other companies before, but it was uncommon because cartridge design would change with every generation; with a CD ROM system, the CD could be made the same size for the next generation, allowing newer consoles to play older games.[7] The PS2 also included a built-in DVD player, adding to its popularity (most PS2 consoles were primarily used as DVD players in the first few months of its launch, partly because there were few PS2 games available at the time).

[6] Nintendo must have forgotten the lesson from Atari's downfall a decade earlier.
[7] There are technical differences that determine which CDs a system can read, but it's much easier to overcome these differences because CDs are all the same size.

The PS2 sold more than 150 million units in its 13-year lifetime, and remains the best-selling console of all time.

In second place, however, was an entirely new competitor. Microsoft's first console, the Xbox, sold 24 million units. It was an extension of Microsoft's original vision. From "a computer in every home" to a full entertainment system, the Xbox was intended to be a powerful computer in a console box. The console's power, and support of games intended to take advantage of that power, were heavily subsidized by Microsoft's other businesses. Creating such a big market for a new console was an impressive achievement, but it still could not match Sony's massive library of games.

Nintendo's troubled Gamecube was next, with 21 million units sold. Sega had become irrelevant in the console market, and changed course to only developing games.

Seventh Generation

In the seventh generation, the console market continued to consolidate, and it emphasized online multiplayer more than any generation before it. Microsoft and Sony competed directly for the hardcore gamer market, focusing on high-end visually stunning games. The Xbox 360 (released in 2005) and PlayStation 3 (2006) each sold about 80 million units (although these final numbers are misleading, because the Xbox 360 outsold the PlayStation 3 for seven years).

But it was Nintendo, focusing on the casual gamer, emphasizing family-friendly games, that won the market. The Nintendo Wii (2006), with a unique easy-to-use motion controller, sold over 100 million units. Nintendo avoided the competition and went for a larger market, similar to the strategy that Sony employed for the PlayStation in the fifth generation.

Eighth Generation

We are currently at the very end of the eighth generation console market. This generation is marked by an increasing reliance on digitally-downloaded games. Rather than storing games on a disk that gamers buy at the store, almost all games are now available as a download.

At the end of 2019, Sony has sold more than 100 million PlayStation 4 consoles (it was released in 2013), while Microsoft's Xbox One (also released in 2013) only sold about half that number.[8] A major reason for the difference is that Microsoft's initial announcement for the Xbox One included limitations on sharing games with friends. The gamers revolted, and Microsoft reluctantly reversed the decision, but reputational

[8] Sony has sold more than 450 million Playstation consoles of all types, making it the best-selling system of all time.

damage was done. Sony also went back to its roots and made a big push for encouraging independent developers.

Nintendo's initial entry for this generation, the Wii U, did not sell very well (poor branding made gamers perceive it as an add-on to the Wii). It was quickly discontinued and replaced with the Nintendo Switch, which has sold more than 50 million consoles. The Switch, however, is a hybrid design; it can be used as a console or carried around and used as a handheld gaming device. It is not as powerful as other consoles, and not as much of a direct competitor.

The Next Generation

At the time of this writing, the ninth generation of video game consoles has just been announced. Computer technology is reaching the limits of what can be improved. Speed and capacity are as high as they can be without becoming excessively expensive. The next generation will require an impressive amount of imagination to move forward. The hybrid design of the Nintendo Switch matches the spirit of this idea, and it is often considered part of the ninth generation, but it is appropriate to wait for the other consoles to reach the market before marking the beginning of the next generation. It will start in 2020.

One company has already unexpectedly brought their entry to the next generation of console gaming—Google.

Google's new gaming platform, named Stadia, is moving games from consoles into the cloud. The processing power needed to run the games is on Google's servers. Games are streamed, much like Netflix movies are streamed, and gamers can play them on any screen that connects to the internet. Stadia's promise represents a leap in technology that has eluded console makers for years; game performance will rely on Internet connections and will not be limited by console hardware.

My assessment of this console, so far, is negative. It has many problems; some of these are the nature of the industry, and some are specific to Google. (It is helpful to remember that no one is investing in Google for access to the video game market.)

1. **Not enough games.** At the time of this writing (March 2020), Stadia only has 42 games available, most of which are older games that do not need the system's special features. Only a few can take advantage of this new technology, and it's not unique enough to become widely adopted. Google should have waited longer to build a better library.

2. **Too expensive.** Stadia requires buying the controller, paying a monthly fee for access to the Stadia system (for the full set of features), *and* still buying the

games (most of which are better suited for a traditional console). This would be fine if the console was already accepted as a legitimate long-term product. But it's *new*, unproven, and untested. An ideal product launch for such a console requires at least one of those factors to be free—preferably at least two. Gamers are willing to pay for something that is proven, but the new offer has to be much better to convince them to try it.

3. **Internet connections are inadequate.** Streaming games has been a dream of console makers since the mid-90s, but the technology has never been good enough. On Stadia's end, the necessary power and expertise is certainly there. It's the consumer that will struggle to justify using so much Internet—Internet Service Providers are increasingly adding limitations on how fast a connection can be or how much data can be used, and reliability matters more for games than other types of streaming. If you ask the game developers (the ones actually making the games), this is the most difficult challenge to overcome. Behind the scenes, they will say that they don't believe it's possible.[9]

4. **Skepticism about Google's commitment.** Tech enthusiasts don't trust Google to support new projects long-term. Google's history with product support is disappointing. The company will introduce something new, find that it isn't popular enough to justify attention, and then shut it down without warning. This strange habit has become self-fulling—many of Google's consumer products are limited in popularity because their best customers don't trust it to make a long-term commitment. Stadia is definitely suffering from this viewpoint.

5. **The competition is better.** Google has very little experience in this market. Sony and Microsoft were able to get in from the outside, but those two companies nurtured an attractive video game library. Google (as it usually does) is solving technical problems without addressing customer needs and desires. Stadia is not compelling enough. It is also offering a service that nVIDIA has recently surpassed—nVIDIA provides a similar streaming experience, but includes the ability to play almost every game the customer already owns, which is a much more attractive service than Stadia's limited library.

At the time of this writing, Sony and Microsoft have both announced plans to release their next generation of consoles near the 2020 Christmas holiday season, officially starting the ninth generation of console gaming.[10] Both are claiming to be more powerful than ever before, and both are focused on making cloud gaming (Stadia's emphasis) a

[9] I heard about this directly from the video game executives and developers at E3 in 2018. They may have changed their minds about the technology since 2018, but they doubted the success of the business model.
[10] These plans may be delayed by the ongoing health crisis.

reality. Sony, following its long commitment to keeping a large video game library, insisted that the PlayStation 5 will be backwards compatible with many older PlayStation games. Microsoft has made a similar promise.

If this generation follows the same cycle as the previous ones, we will see a big boom in the video game industry starting at the end of 2020.

Handhelds (1990s to now)

The “handheld console” story is not as dramatic. It is dominated by Nintendo.

The first successful handheld console was the Nintendo Game Boy, released in 1989. Several other handhelds, or consoles that could be carried and played without a TV, were attempted in the 70s and 80s, but the technology was not ready. These early devices were functionally interesting, but did not have enough portability to make them attractive (they didn’t have enough battery life). The Game Boy was not as advanced as the other handhelds available at the time, but it was much cheaper and had a much longer battery life, two of the most important features for handheld popularity. By 1990, the Game Boy had a US market share of 93%, making Nintendo the undisputed leader in both consoles and handheld consoles.

Since then, Nintendo has never been seriously challenged in the handheld console market. Nintendo continued producing more advanced variations of the Game Boy handheld system for 20 years. The combination of the Game Boy and the Game Boy Advance sold a total of over 200 million units during their lifetimes. A major reason for this extended success (and the common theme among consoles) was the robust library of games: many old NES games were “ported” to Game Boy, and the launch of the *Pokémon* franchise (a franchise with a fanbase that could rival *Star Wars*) kept the console fresh in the late 90s.

The Game Boy family of handhelds was gradually replaced by the Nintendo DS after 2004, a handheld that sold over 150 million units. These were phased out after the release of the Nintendo 3DS in 2011, a handheld that has sold about 75 million units so far. A version of the 3DS is still produced as an entry-level handheld console, but the spiritual successor is the Nintendo Switch, which can be used as a TV console or a handheld console.

The only company to offer a real alternative is Sony. Sony released the PlayStation Portable (PSP) in 2004 as a competitor to the Nintendo DS. It was the most powerful handheld console of its time, and was designed to work with PlayStation 2 and PlayStation 3. It sold 80 million units in its lifetime; impressive, but nowhere near Nintendo. Nothing could dislodge Nintendo from its ownership of this market.

But the handheld market is changing. Now there is a serious new threat—mobile phones. Mobile phones are functionally similar to handheld consoles, and they can do almost all of the same things. They also have continuously growing game libraries supported by millions of small game developers. There will always be demand for high quality handheld consoles (meaning there will always be demand for Nintendo products), but casual gamers have accepted mobile phones as an adequate replacement.

End of Part 1

Part of getting comfortable with an investment means understanding the rules and cycles that define an industry. The rule behind the market for consoles is what economists call a two-sided market. On one side is the content (the number and quality of games available for the console), and on the other side is the consumers (the people choosing which games to play)—and the console with the best content is usually the most successful. What matters for investment timing is the industry cycle, which resets with every new console generation. There is always a big boom in business at the start of a generation.

From a really long-term view, the technology for consoles has followed the same pattern as the rest of the computer industry: devices continue to become smaller, more powerful, and more interactive. The only difference is that consoles are used primarily for games.

The market for consoles has also followed a familiar pattern—it opened with many small competitors, exploded, and re-formed into a small number of major companies. To compete in this market today requires a massive investment in technology and (more importantly) another massive investment in a large video game library, something that the established players have taken decades to build. There will be no small startups here.

The market for the actual games, however, is an entirely different story.

Part 2: Software (Games)

To understand the software side of the video game industry, we need to start with the relationship between the hardware side and the software side. One of the earliest complaints about Atari, and later Nintendo, was that their market dominance in consoles gave them the ability to make expensive demands on independent game developers. Atari was annoying, but Nintendo was ruthless. To publish a game on the NES, developers were required to give Nintendo the exclusive rights for two years, and Nintendo controlled the supply of NES cartridges. If your team was not affiliated with the console manufacturer that dominated the market, then your games would not sell.

As a result, Nintendo became the target of an antitrust lawsuit that covered all 50 states. The company lost the suit, but was only required to pay $5 million *in coupons*. After this experience, Nintendo chose to allow third parties to make their own cartridges, likely influenced by the fear of further lawsuits. Sony later proved that Nintendo's aggressive approach was wrong; when Sony welcomed outside developers, its extensive game library attracted more players and led to the sustained success of PlayStation consoles.

The concept of an outside developer, known as a third-party developer, is defined by who owns the game developer that produces games. A first-party game is one that is made by the same company that makes the console: for example, all Nintendo-made games for Nintendo consoles are first-party games. Games made by first-party developers are almost always exclusive to that company's console. A third-party game is made by an independent game developer and is usually available on many different gaming platforms.

The category of third-party developers is divided into two different responsibilities: developers and publishers. The best comparison is to imagine the difference between book writers and book publishers. For this part, we need a little more context.

- Game developers do all of the programming to make the game. They have timelines and guidance to follow that is set by their publishers.
- Game publishers advertise and distribute the game. They pay the developers a royalty based on the game's performance.
- In many cases, game developers publish their own games, or the developer is owned by the publisher.

The story of third-party developers is complicated and constantly evolving. Thousands of developers have been formed, bought out, shut down, and re-formed again. And only four major independent game publishers/developers still exist today (in order of size: Activision Blizzard, Electronic Arts, Take-Two Interactive, and Ubisoft).

This is how they do business.

A Brief History of Third-Party Developers

The earliest third-party developers and publishers were founded by former programmers. The world's first third-party game developer was formed in 1979 when a team of Atari programmers left the company to found Activision.[11] They were unhappy with their treatment at Atari (by then it was owned by Warner Communications), and they desired more flexibility on the type of games they were developing. Atari did not

[11] Steve Jobs, founder of Apple, is Atari's most famous former employee, but the Activision founders are also former Atari programmers.

credit the developers who designed and programmed their games, and they were paid the same low wage no matter how well the game sold. But, as a third-party developer, these programmers would be credited for their achievements and paid for their performance. Activision opened the market for third-party developers.

Electronic Arts (EA) was founded in 1982 by Trip Hawkins, an early Apple employee. EA used Activision's strategy for attracting good game designers and took it a step farther than giving more credit and more pay—EA treated them like rock stars. Backed by Don Valentine, the investor who funded both Atari and Apple during their early stages, and filled with talented programmers, EA was instantly successful.

The market blossomed, and more than 100 third-party game developers were in operation by the end of 1982. It was easy for new game developers to get funding from investment firms looking to capture a piece of the market, but the conflict of making good games vs. making money contributed to a flood of cheap, low quality games.

Consumers simply abandoned the market, and the video game crash of 1983 eliminated almost all of the third-party developers. Activision and EA both switched focus from console games to computer games, which were not as severely affected by the crash. Both companies also began to buy out their competitors and development partners. EA made it a central strategy of their business, but Activision struggled for years before getting rescued by Bobby Kotick in 1992.[12]

The revival of the video game industry in the late 1980s and early 1990s saw another explosion of new video game developers. But these new game developers were much more conscious of emphasizing quality in their games, and console manufacturers had much higher standards.

It was the computer game market, however, that offered the most experimentation. Computers have always been more powerful and more customizable than consoles; it is easier to design a game for a computer, and computers bypass the complicated relationship that comes with console hardware companies. They also opened the market to players who would never consider a console.

Since the early 1990s, computer games have pioneered technology, gameplay, and new ways to make money. And each type of game contributed in its own way—we are no longer looking at a chronological story, but a categorical division.

For those who are not familiar with games, here's a brief description of what we're covering:

[12] Kotick is still the CEO of Activision.

- Casual Games: Simple games that are easy to learn and can be played for short periods of time. Mobile phone games are the modern version of casual games.
- First-Person Shooters: Shown from the perspective of a warrior or soldier that shoots at enemies. This type of game is often the target of government inquiries about violence in video games.
- Role-Playing Games: Players act out the role of a character and follow a story, like an interactive movie or novel.
- Sports Games: Sports like soccer, football, basketball, and baseball have become very popular as video games.
- Strategy & Simulation Games: Strategy games and simulation games are different categories, but they both require planning ahead and managing resources. A strategy game might be a general commanding an army, while a simulation game could be a city planner designing a city.

Casual Games Become Apps

A casual game is easy to learn, easy to play, and does not take much time. The most popular casual game of all time was probably solitaire, which Microsoft first bundled with Windows 3.0 in 1990. Although Microsoft did not try to make money on solitaire, this short, time-wasting distraction of a game has long been a feature of office culture, and it led the way for the future of casual games. By the late 90s and early 2000s, there were many websites devoted to casual games. These websites had games that were free to play and made money by offering advertising space.

Near the end of the 2000s decade, more casual games appeared on social media websites. By 2011, Zynga, maker of *FarmVille* and *CityVille* (the latter of which peaked at over 100 million active users), had four of the top five social games, primarily connected to Facebook. With social media games, the business model changed; the games were still free, but bonus items or extra time were offered for sale inside the game. These sales, called microtransactions, were part of a strategy called the "freemium" model. The freemium model means providing the games for free and making sales inside the game. As you probably know, this way of making money has followed the transition into mobile gaming.

Zynga, however, has not made the transition. The current leader in mobile games is King, maker of the extremely popular *Candy Crush* games.[13] King is a mobile game company that began as a website in 2003, expanded into social media platforms in

[13] *Pokemon Go* is the most widely-played mobile game, with over one billion downloads, but it's a Nintendo title, and our interest here is primarily third-party developers that do not sell consoles.

2011, and connected everything to new mobile games in 2012. In 2016, King was purchased by Activision.

First-Person Shooters Drive Distribution Methods

The most famous first-person shooter game of all time is probably *Doom*, a game franchise created by id Software in 1993 (*Wolfenstein 3D*, also by id Software, came first, but *Doom* is more well-known).[14] id Software, founded in 1991, used a form of game distribution called shareware. The company would release a partial game for free, called the "shareware" version, that gamers were encouraged to copy and share with their friends. Then, if players liked the shareware version, they could call the company to order the full version of the game.

This method of popularizing games was common in the 1990s. As the market evolved, new methods for distributing game software became possible. At first it was "expansion packs" that added substantial additional new content to a previous game, sometimes as much as an entirely new game. But these were still sold in boxes. It was not until the early 2000s that Internet connections became fast enough sell smaller pieces of content. This new innovation allowed selling individual items, or maps, or clothing, as one small package that could be downloaded. These products, called downloadable content (DLC), have continued to become an increasingly higher share of revenues for video game developers.[15]

As online features became more important, developers have adopted even more creative distribution methods. The next influential first-person shooter was *Half-Life*, released in 1998. It was created by Valve, a company formed by two former Microsoft employees in 1996. In 2003, Valve opened a new digital distribution platform that it called Steam. The initial purpose of the platform was to publish its games online where they could be sold and downloaded without visiting a store, but the platform became a way for smaller developers to publish their games and sell DLC content. This "indie" developer platform continues to flourish. Estimates put Steam's market share for PC downloads somewhere between 50% and 70%.

Outside of Valve's powerful platform, it was Activision that secured market dominance in first-person shooters. The *Call of Duty (CoD)* series, first published by Activision 2003, has been the best-selling franchise every year since 2008. The core advantage of *CoD* is that its enormous popularity generates more sales for the next game; primarily an online multiplayer game, gamers buy it for the game but stay for their friends. The

[14] A game franchise is a series of games that share the same world and history. It works the same way movie franchises work—for example, the *Star Wars* franchise is a set of movies that take place in the same universe.
[15] EA first tested the idea of downloadable content all the way back in 1998.

longer these players continue playing, the more content that Activision can sell inside the game. And this content has continuously involved smaller game segments and smaller transactions. DLC has become microtransactions.

An extension of this trend was taken to the extreme with *Fortnite*. *Fortnite* was released by Epic Games in 2017 as a free game. Instead of charging for the game, like *CoD*, *Fortnite* copied the freemium model of mobile games; the game is free, but players can buy special content inside the game to improve their game experience. In 2018, sales of this special content earned $2.4 billion, more than any other game has ever made in a single year.

Other game companies have carefully studied this model, and *Fortnite's* influence has generated new ideas for game design. But these ideas were shamelessly copied by Activision, and *CoD* continues to be the perennial giant of the genre.

Role-Playing Games (RPGs) Introduce Monthly Subscriptions

The all-time best-selling RPG franchise, by far, is Nintendo's *Pokémon* series. But that's a first-party, console-based game that you can only find on Nintendo consoles. The third-party giants of the RPG genre are Square Enix (developers of the *Final Fantasy* and *Monster Hunter* franchises) and Bethesda (developers of *The Elder Scrolls* and *Fallout*). Both companies entered the video game industry shortly after the video game crash of 1983, and both have slightly different development strategies. Square Enix is more of a console developer, and generally chooses to release its games to largest console of the current generation. Bethesda is more of a computer game developer; Bethesda releases its games on *every* system that will allow it (and *re-releases* them as many times as possible).

The reason these franchises have done so well is not just because they're good games. It's partly because there are so many of them. More than 50 *Final Fantasy* titles have been released or re-released over the past 30 years. The more impressive RPG developers take a long time to develop their games, about five to ten years, and aim for selling a massive game that can break individual game sales records without reaching the top of the franchise records.

This is the strategy for Blizzard Entertainment, with its *Diablo* franchise.[16] Blizzard, founded in 1991, came in at the ideal time for developers interested in producing a high quality computer game experience. Computers were becoming more powerful and more

[16] Take-Two Interactive also uses the same development strategy for its *Grand Theft Auto* and *Red Dead Redemption* franchises. These two games are typically not classified as RPG games because they are missing many essential RPG elements, but they follow the same plan of having one major release every few years, rather than introducing a new title each year.

popular, and the technology advancements of the 90s made it possible for developers to keep pushing the edge of computer power.

In 1996, Blizzard released its first *Diablo* game. It was an unexpected success, becoming the best-selling computer game for the first half of 1997. And it maintained extraordinary popularity through the end of 2000, when *Diablo II* was released. *Diablo II* was even more successful. It won several "game of the year" awards, and is considered one of the best games of all time.[17]

By sales numbers alone, these are obviously great games, but one of the most influential features of the *Diablo* franchise is the Battle.net service that came with it. Battle.net allowed *Diablo* players to play the game with each other over the internet (an ambitious feature for a game from 1996). The service was free, and it gave the series longevity that would not have existed as a single-player game alone.

Blizzard translated this online experience into a new game, called *World of Warcraft (WoW)*, that it released in 2004. *WoW* is an online game categorized as a Massively Multiplayer Online Role-Playing Game (MMORPG). It is an extension of one of Blizzard's other franchises, the *Warcraft* series, but the model of an online game was directly influenced by Battle.net. It became the best-selling PC game of 2005 and 2006, and peaked at over 12 million subscribers in 2010. *WoW* is still the number one game in its category, and has made more than $10 billion for Blizzard since it was first released. Blizzard merged with Activision in 2008 to form Activision Blizzard.

WoW was not the first MMORPG (there were several others that came before, with varying degrees of popularity), but it had one of the most consistent and engaging stories, and the game was carefully designed to encourage social interaction within that world. *WoW*, and the other MMORPGs like it, have become RPGs that charge a monthly fee for access—they are now a subscription service (sometimes called "Games-as-a-Service" or GaaS). Instead of buying the game once and playing it forever, players have to buy the game and continue paying for it every month for as long as they want to play.[18]

Sports Games Become Big Brand Names

Sports games have been around for a long time. The very first sports game (sometimes recognized as the very first video game) was a tennis game designed for a radar screen in 1958. Over time, these games have become more realistic and more complex, but

[17] *Diablo III*, released in 2012, was even more successful. *Diablo IV* is currently in development.
[18] Some MMORPGs use the freemium model described earlier. They have a free game that players can buy stuff inside.

we're skipping to the 1990s, where 3D graphics and professional sports licenses began to dominate the market.

The longest-running sports game franchise is *Madden NFL* football, first developed by Electronic Arts in 1988. *Madden* was exceptional among sports games for two reasons: it was as realistic as computers of the time could handle; and, after 1993, accelerated the trend of licensing professional sports leagues to create video game content. Since the first game was released, the franchise has sold over 130 million copies, but it's a distant second from the top game.

FIFA, first released in 1993, was EA's natural extension of the professional sports licensing strategy. This soccer franchise, more popular worldwide, has sold over 260 million copies, more than twice as many as *Madden*. Both *FIFA* and *Madden* have become yearly best-sellers with numerous features and items for sale inside the game.

Other sports are less concentrated. Take-Two Interactive, one of the four major game publishers, generally has the leading baseball and basketball games. But they are not as popular and not as well-branded, and the licensing deals are not as profitable. EA offered to buy Take-Two in 2008, but the deal was rejected.

Strategy & Simulation Games as Buyout Candidates

Major game developers are always involved with many different types of games and multiple franchises inside the same type of game. But smaller developers generally specialize in one type of game, and sometimes only one franchise. There are thousands of small developers, and when they become successful, they have to make a choice: continue developing games as an independent company (and retain the creative vision), or sell out to a larger company (and gain access to more resources).

Every successful business is constantly choosing between those two options, but game development is unique. It is very similar to the biotech world, where smaller companies are all working on their own unproven drugs, and larger companies are waiting to buy out the ones that are proven to be successful. The smaller game companies have the freedom to test their concept, but they may not have the resources to continue developing new games; on the other side, the larger companies can allow someone else to take the risk of a failed game, and make investments in what is already successful.

This is a central strategy for Electronic Arts. EA has made more than 40 acquisitions in the past 30 years, and a primary reason behind their interest in an investment is often one very successful franchise. Two of the most successful targets were pioneers in strategy game and simulation game development. Maxis (founded in 1987; purchased by EA in 1997), and Westwood Studios (founded in 1985; purchased by EA in 1998).

At the time of EA's acquisition, Maxis was known for its *SimCity* franchise, a series of city management simulation games with no winning objective. Maxis attempted to develop other types of games, but these investments destroyed the company's finances, and EA stepped in to save it. EA allowed Will Wright, the genius behind Maxis, to extend the *SimCity* universe into a new franchise of games called *The Sims*.

The first *Sims* game became the best-selling computer game for the year in 2000 and 2001, and became the best-selling computer game of all time by 2003. *The Sims* franchise easily topped the list for the best-selling computer game franchise of all time, a position that it still holds. EA closed Maxis in 2015, after all of the original Maxis team had left and the games were no longer meeting EA's ambitious standards.

Westwood Studios was a similar story. When EA bought Westwood Studios, it was already a subsidiary of a much larger video game company, but a series of failed games led to the breakup of the parent company. From the wreckage, EA got Westwood, known for its real-time strategy franchise called *Command & Conquer.*

Under EA's direction, Westwood released several new games for the *Command & Conquer* series. The games continued to be popular but suffered from impossible expectations. Like many developers that get acquired, the corporate culture shifted from making video games as a passion to making them purely for profit, and quality suffered. EA shut down Westwood Studies in 2003, only five years after the acquisition.[19]

End of Part 2

In the software side of the video game industry, there are only four major independent publishers remaining, and the others have either collapsed or been absorbed by something bigger. However, a major publisher is a company that releases at least one "AAA" title every year. There are still hundreds of smaller developers and publishers creating video games, and there is still room for them to make money in the industry without making a huge investment. It only takes one exceptionally successful game for an unknown company to become big.

Sustained success is still rare. While smaller publishers and developers can get by without a big budget, they still need to make a popular game, and they still need to turn that popularity into profit. Fortunately, monetization has become easier over time, with several strategies for making money in this business:

- Digital distribution through platforms like Steam.
- Selling products inside a game or advertising inside a game.

[19] EA temporarily brought back the Westwood team to remaster the original *Command & Conquer* game, which was released this year (and I personally bought 3 copies the same day it was released). Updating old games for modern systems is an increasingly popular strategy.

- Downloadable content that extends a game's lifetime.
- Monthly subscriptions that create regular revenue.

These methods have emerged from years of evolution in the industry, but business strategy is not the only change. The games themselves are becoming more accessible, more online, and more expandable.

They are also becoming more competitive.

Part 3: The Future of Gaming

The future of video games will continue to build from the trends of the past.

For consoles, this means creating the most attractive video game library. And the largest game libraries secure the future by linking the past—the ability to play older games on new consoles (backwards compatibility) will be a core feature of all future consoles. Gaming accounts that are created today can be transferred to the consoles of the next generation. The success of past consoles will carry into the sales of every console that comes next. Gamers who buy one company's console will be much more likely to stick with the same brand.

The strategy that makes this possible is the increasing use of digital downloads. Game libraries are no longer made entirely with a physical shelf full of disks, but instead can simply be an account with a list of games associated with it. The console knows which games the player owns, and they can download these games whenever they want to play. And a game that is fully digital can be designed to work with future consoles much easier than a game on a disk. When the account transfers to the next console, so does the player's game library.

Digital downloads are also the future of the games themselves—selling the games through a digital distribution network has become the norm, but selling items inside a game is also a primary strategy that will never go away. No game is ever fully complete; it can be broken into thousands of pieces that are each sold individually, sometimes over many years.

But this main theme—a gaming industry that is more online and more digital—is overshadowed by the flashiest opportunity in the future of gaming: eSports. To understand what this means, let's take one more peek into the past.

eSports Become Real Sports

Arcade tournaments have been around since the 1970s and 1980s. These were primarily competitions to see which players could achieve the highest score in specific arcade games. They were not directly playing against other players.

This changed in the 1990s, when fighting games allowed a direct competition between two players, rather than competing by high scores alone. As these games evolved in complexity and scope, and first-person shooters connected with computers through the Internet, eSports competitions became increasingly common (with increasingly higher payouts). The first professional gamers started with games like *Doom*.

But most of the organizations behind eSports in the 1990s were small and informal, and the types of sponsorships that exist for professional sports leagues were virtually nonexistent. It was the 2000s that began to see the rise of annual international tournaments and professional gaming leagues devoted to eSports. The founding of Major League Gaming (MLG) in 2002 marks the shift into corporate sponsorship.

In the early 2000s, the two most popular categories of eSports games were first-person shooters (FPS), real-time strategy games (RTS), and sports games.

The most widely played FPS eSports games include some familiar names:

- *Quake*, made by id Software in 1996, supported one of the first major professional eSports scenes. Its popularity faded within a decade, replaced by more modern games.
- *Counterstrike*, released by Valve in 2000 as a spinoff of *Half-Life*, continues to be a popular series for eSports. *Counterstrike* has about 12 million players, and it is the third most popular eSport game, with about 50 million viewers for each of its two major tournaments.
- *Call of Duty*, published by Activision, has been featured in MLG tournaments since 2008. It has more than 28 million players. MLG was purchased by Activision Blizzard in 2016.
- *Overwatch*, released by Blizzard in 2016, was designed specifically as an eSport game, and has about 40 million players. Blizzard is still building an official *Overwatch* league with sponsored franchises and teams around the world.
- *Fortnite*, a relatively new eSport, is quickly becoming a phenomenon, with 40 million competitors.

With RTS games, there is not as much variety. *StarCraft*, a series first started by Blizzard in 1998, remains the leading eSports RTS, with about 2 million players. EA's *FIFA* series is the leading sports eSports game, with over 12 million players.

All of these eSports categories are dwarfed by a new type of game: the Multiplayer Online Battle Arena (MOBA). A MOBA is a modification of an RTS. In an RTS, the player is commanding an entire army by themselves. In a MOBA, several players are each controlling individual characters within an elite army squad, facing an enemy team with the same number of players. There are two major MOBAs:

- *DOTA 2*, which originated as a spinoff of an RTS game, was released by Valve in 2013. *DOTA 2* has more than 12 million players, and is the second most popular eSport game, with more than 50 million viewers watching the world championship tournament.
- *League of Legends (LoL)*, created by Riot Games in 2009, is by far the biggest name eSports. *LoL* has 100 million players, and more than 70 million viewers watch the *LoL* World Championship each year.

LoL, *DOTA 2*, and *Counterstrike* are considered the "big three" of eSports. While *CoD* is easily the leader for console eSports, no other games have challenged the big three in their dominance of the PC eSports market. New games have been introduced with as much as $100 million of eSports investments, but so far none have had any effect on the big three, and almost all of them have quickly folded after failing to gain enough popularity to earn back the investment.

This market–even with continually high growth in viewers, increasing prize payouts, and major corporate sponsorships–may be reaching a mature stage, where most of the growth goes to the top games, and most of the top games are owned by the same companies. *LoL* was made by Riot Games, which is owned by Tencent (and Tencent also owns a large piece of Epic Games, the maker of *Fortnite*). *DOTA 2* and *Counterstrike* are both Valve games*. StarCraft*, *Overwatch*, and *CoD* belong to Activision Blizzard. Every major video game developer has made some investment into eSports, but only the largest video game companies have the resources to try.

eSports are a big deal, and they will continue to be a big deal. Over the next three years, the number of eSports viewers in the US is expected to pass all major sports leagues except the NFL, and global eSports revenue is expected to double. And although these projections have been consistently over-optimistic, the potential is real.

Ongoing Trends

Beyond eSports, there are several consistent trends in the industry. Decades of development have transformed the video game industry from a chaotic group of

startups into a stable group of corporate giants. It has also become more online, more continuously supported, more monetized, more competitive, more casual, and more mobile. These massive changes make an industry that would be unimaginable from the technology that started it all. Even the comparison from one generation of consoles to the next generation reveals an impressive leap in technology.

And the transformation continues. The future of the gaming is influenced by many of the same features that affect every other technology company.

Market Concentration

The most successful video game developers do one of three things. All of these three things contribute to a more concentrated industry:

- They put their competitors out of business with superior financial resources.
- They buy out smaller competitors that have proven to consistently make popular games.
- Or they sell themselves to larger companies.

We already know about Activision Blizzard, which is the combination of three very successful companies in different genres. And we already know about EA, which uses acquisitions as a central strategy. But the biggest gaming company is actually Tencent, the Chinese technology conglomerate that owns a little bit of everything. The shift in concentration is focused on Asia in general and China in particular. The Asian market represents half of the entire video game market, while China alone is 25% of the worldwide total. And the only way to get into China is to partner with Tencent.

Digital Distribution

The “middle man” of retail stores has consistently become less important in the video game industry. Ten years ago, 80% of all video games were sold as a physical disk, with 20% sold as an online digital download. These numbers have gradually shifted, and they are now completely flipped—more than 80% of all video games are sold as online digital downloads, and less than 20% are sold as a physical disk. Digital download platforms like Valve’s Steam service have captured most of this change, but the video game developers also make more money on digital sales. The cost of selling one more download is much less than manufacturing a disk and taking up shelf space inside a store. There is still a place for physical sales, especially when it comes to buying a new gaming device like a console. Console owners also like to have physical disks that they can re-sell or share with friends, but the industry prefers to be digital.

Games as a Service

A consequence of digital distribution is how games are becoming perfected over time. The biggest video game companies have released a few games that sold well in the beginning but were quickly abandoned by the players. Gamers know what they like. And if they don't get what they like, then they walk away. In the past, these substandard games would become a black mark on the company's reputation, but the Internet enables development to continue after the game has already been sold (sometimes included with a monthly fee). The company can add new features or fix broken features until the game is good enough to match the high standards of their fans. It can also extend the life an old game for a long time after it would normally stop selling.

This is a controversial trend. Games *should* be ready when they are released, and not just after people complain. But it's better for the industry when mistakes can be fixed, and it's better for the gamers when their favorite games continue to be supported. The video game crash of 1983 showed what happens when too many bad games flood the market and gamers abandon the industry.

Cloud Gaming

Another part of the digital theme is the increasing use of cloud systems for gaming, where the games are played from the cloud. While I am skeptical of the current attempts to make gaming fully cloud-based, a hybrid model (where part of the game is local to the user and part of it is in the cloud) is already a proven success. Online games already function this way, and Microsoft's latest flight simulator game has taken this concept to the extreme—a detailed copy of the entire world is stored on Microsoft's servers, but it will only send the data of the locations where the player wants to fly their plane.

Mobile Gaming

The biggest growth market for games is mobile phones. Over the past decade, the mobile games market has become ten times larger, and it now represents almost one half of the entire gaming market. Mobile games are popular among people who are not traditional gamers, such as women and older people, and are extraordinarily popular in Asia.

Almost all mobile games are monetized through advertisements and/or microtransactions. Tencent and Activision Blizzard are both investing heavily in new mobile games.

Microtransactions

The idea of selling stuff inside a game is a feature of both universal Internet connections and mobile games. Most mobile games are free, and they can make money by selling stuff inside the game. But paid games can have microtransactions too—the console video game market is estimated to have about 10% of its revenue from microtransactions. This is another controversial trend. Most gamers are willing to accept the ability to pay for cosmetic changes. But being forced to buy something that should be included in the core game, or being forced to "pay to win," are deeply unpopular in the gaming community.

So far, most video game developers have respected gamers' demands to not be exploited by excessive microtransactions, but EA has come dangerously close to crossing the line where regulation affects the industry. Some of these systems are designed to be as addictive as gambling, and in some cases there is functionally no difference between a microtransaction payment and a slot machine. This is a serious ethical concern that will become more significant as regulators gain a better understanding of the industry.

Virtual Reality

Virtual Reality (VR) could be the next major step in gaming hardware. Or it could be as temporary as 3D movies. VR has an uncertain future. The technology is still bulky and expensive, and requires a large open room (and a very powerful computer) to work correctly. Sony and Facebook are both making big bets on VR, while dozens of startups look for new ways to use the technology.

Back Catalogues

We will certainly have more powerful computers and more powerful consoles, and more carefully crafted games, but there is also a movement for appreciating the great games of the past. Every video game company has a "back catalogue" of old games that still have value. "Remastering" by improving the old games, and re-releasing for modern systems, brings the classics back to life. Nintendo is currently one of the most prolific users of a back catalogue, releasing several original NES and SNES games for the Switch, but other companies have used their back catalogues more profitably by updating the games to look more modern. Using this strategy, we probably won't see another *Pong*, but we'll probably get another *Skyrim*. These games will continue to be valuable for as long as people are willing to buy them, and I expect that to be a long time.

End of Part 3

The remarkable growth of eSports means that it will soon rival the popularity of “real” sports. And with that popularity comes the opportunity for significant new sources of revenue. Since this part of the video game market requires a large investment and is already concentrated among a small number of very large companies, the current industry leaders are likely to capture most of this growth.

The other ongoing trends in the industry are more open to smaller companies, because these trends mostly describe a shift in how businesses make money. The two most important themes have been the switch from physical disks to digital downloads and the rise of mobile gaming (both of which make it easier to sell games in the massive Asian markets). Ten years ago might have been the perfect time to invest in these themes, but it’s not too late to think about it, because they will continue to be influential over the next ten years as well.

How these major themes develop might be unpredictable, but the concentration of the market ensures that the current leaders will continue to be powerful, even if they are temporarily surprised.

Conclusion

The stability in the video game industry has evolved from decades of innovation. Each generation of consoles is more powerful and more complex, and requires a bigger R&D investment each time. But the attraction of console technology is secondary to the game library available for each console—a powerful console is exciting, but it must have the right price and the right games.

The investment required to build a good game library prevents new entrants from surprising the console market, but it also ensures a more stable and predictable console cycle. Expectations about future consoles are set years in advance by companies that have a long history of proven success. With such careful planning, we are unlikely to see the dominance of an Atari or a Nintendo of the past, but we are also unlikely to see a spectacular collapse.

The market for video games has also become more stable and predictable, but in a different form. There are still large games produced by massive developers, but the rise of digital distribution methods has enabled small developers to reach a wider audience. It has also made this part of the industry more profitable for every gaming company, encouraging new sources of revenue such as downloadable content and microtransactions. But moving online to digital downloads is just a shift in strategy. The biggest growth markets for games over the past few years have been in mobiles games

and the Asian video game market. Both are now large portions of the video game market, and both are targets for video game companies of all sizes.

Beyond these major markets, there are other reasons to be excited about the video game industry right now. In the short term, we have the pandemic that is forcing people to stay home and the beginning of the next console cycle. In the long term, we have eSports, the next major growth market for large developers.

Going forward, it is clear that the video game industry has evolved into a mature business with well-understood standards, but it still has opportunities to continue evolving as a valuable form of entertainment. Video games are not just for kids.

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