INCLUDES CD-ROM

Introduction to
Game Development

Second Edition

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CRITICAL GAME STUDIES

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1.1 A Brief History of Video Games

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Overview

In the quest to learn about the video games industry and how state-of-the-art games are made, it helps to start with some perspective. How did it all begin? Who were the people who drove the business and what were their inspirations? What significant games of yesteryear shaped the way games are made today?

While a student of filmmaking will study legendary directors like Orson Welles and groundbreaking films like *Citizen Kane*, there is equal reason for game developers to study the work and techniques of Shigeru Miyamoto and influential games like *Donkey Kong* and *The Legend of Zelda*. It is certainly true that games have not reached the status of films as works of art, but this is slowly changing. The skill and artistry involved in making games will soon rival motion pictures, with typical game production budgets skyrocketing upward of 10 to 20 million dollars with no end in sight.

This chapter travels through time from the first recorded video game in 1958 all the way to the present. There are many ways to view and compare history, so we'll start with a timeline approach, and then break out specific platforms, studios, people, and genres to effectively understand specific lines of innovation.

The First Video Games

The first video games can be attributed to two key people: William Higinbotham and Steve Russell. While William Higinbotham would be credited as the first to design and implement a video game, Steve Russell would be the first to create a game that would inspire the multibillion-dollar video games industry.

William Higinbotham and Tennis for Two

Who invented the first video game? As far as historians can tell, it was the United States Department of Energy. Specifically, it was a man named William Higinbotham who was the head of the Instrumentation Division for Brookhaven National Laboratory. Before Brookhaven, William had previously worked on the Manhattan Project at Los Alamos and had witnessed the very first atomic blast. However, in the 1950s, people were wary of atomic power, and Brookhaven tried to present a friendly image by hosting an annual visitor's day. Hundreds of people would visit the laboratory every fall to see the various exhibits that were set up in their gymnasium. In 1958, William had a brainstorm. On previous visitor days, people weren't very interested in static exhibits, so for this year he came up with the idea for an interactive display. The display would be a video tennis game.

In a matter of three weeks, the very first video game was assembled. William, who drew up the original design in only a couple of hours, worked closely with Robert V. Dvorak, a technical specialist, who wired up the patchboard. Between the two of them, they spent about two days debugging and tuning the game, getting it done just in time for the first tour. *Tennis for Two* was the result, and it was a big hit with the visitors.

Running on an analog computer and hooked up to an oscilloscope, the first video game looked sharp and ran fast. Surprisingly, this game was not a top-down perspective like *Pong*, but rather a side view of a tennis court. Two players would smash a ball back and forth, with the ball realistically bouncing off the ground and net, apparently under the influence of gravity. While the game kept no score, clearly there was a winner and loser after each volley. Even without audio speakers of any kind, the game had its own distinct sound effects, even if they were somewhat unintentional. The relays that enabled the device to operate made loud clicking noises with every hit and bounce of the ball.

This game was truly an impressive first attempt, even by today's standards. Yet to William, the fact that he had invented something unique didn't occur to him. The analog computer that he used actually came with examples in the instruction book, showing how to simulate many things on an oscilloscope, such as missile/bullet trajectories as well as a bouncing ball. Therefore, when William made the leap allowing two people to volley a bouncing ball back and forth, he didn't consider it a major breakthrough.

Although several hundred people saw the Brookhaven exhibit in 1958 and 1959, it failed to inspire future video games. The exhibit simply didn't reach the right people

to make an impact, and thus is recorded in history as an isolated incident. It was as if the airplane was invented, but nobody recognized the significance or possessed the interest to push the idea further. After the autumn of 1959, *Tennis for Two* was dismantled and replaced with newer exhibits the following year.

Steve Russell and *Spacewar*

In 1961, computers were scarce, but they could be found at the most prestigious schools, such as MIT. Steve Russell was a student at MIT, and over the course of six months and roughly 200 hours, he created a two-player video game called *Spacewar* on a DEC PDP-1 computer. The goal of the game was for each player to maneuver his spaceship while trying to shoot the other player's spaceship with torpedoes. Using four separate switches, each player could rotate clockwise and counterclockwise, thrust, or fire a torpedo.

Spacewar was created in 1961, but by the spring of 1962, the game had been expanded. Pete Sampson added an accurate starfield in the background by integrating an existing program called *Expensive Planetarium*. Next, Dan Edwards optimized the game to allow gravitational computations to be performed. Thus, a flickering sun was added to the center of the display that would influence the spaceships and destroy any that flew too close. Finally, J. Martin Graetz added the concept of hyperspace: the ability for a panicked player to warp his spaceship from its current location to a new randomly generated location. With these additions, interesting tactics began to develop, such as slingshotting oneself around the sun to quickly overtake a slow-moving opponent. Within MIT, the game was a huge success and created quite a sensation at MIT's annual Science Open House.

Steve Russell never made any money off *Spacewar*, but he did briefly consider the possibility. Unfortunately, the cost of a PDP-1 computer in the early 1960s was about $120,000, and the feasibility of commercially recouping that cost was out of the question. *Spacewar* become a public domain program and quickly spread to other colleges over ARPAnet, an early version of the Internet. In addition, DEC ended up using *Spacewar* as a diagnostics program that shipped with new PDP machines, therefore distributing the game to its customers for free. A re-creation of *Spacewar* in Java can be played at *http://spacewar.oversigma.com/*.

Games for the Masses

While *Tennis for Two* and *Spacewar* were amazing first games, they only reached a select group of people. During the early 1970s, two key people, Ralph Baer and Nolan Bushnell, would bring video games into the home and the arcades for the masses to enjoy. Thus, these two visionaries gave birth to the video games industry as we know it today.

The Advent of Home Video Games: Ralph Baer and the Magnavox Odyssey

The next significant chapter in video games centered on Ralph Baer. Ralph's background was in TV design, but in the early 1960s he was a division manager at Sanders Associates, a military defense contractor based in New Hampshire. While on a business trip to New York in the summer of 1966, he came up with the idea of making games for a home TV. Since Ralph had more than 500 people under him, along with a payroll of almost $8 million, he was able to allow a couple of engineers, Bob Tremblay and Bob Solomon, to work on his ideas without anyone noticing.

When Ralph finally presented his project to the executive board at Sanders, his new invention garnered a cold reception. Most on the board thought Ralph was wasting the company's money and wanted to kill the project. Despite this poor showing, Ralph's boss, Bill Rusch, was impressed, primarily by the rifle game. Rusch was quite adept at shooting the target spot on the television from the hip with the plastic rifle. With a champion in his corner, the project remained alive.

In 1967 and 1968, better games started to take shape with the help of Bill Rusch. Soon, the small group had a respectable ping-pong game working. With a little refinement—removing the net and adding a blue "ice" color for the background—it became known as a hockey game. The game featured three controls: an up/down control for protecting the goal, a left/right control for moving close to the centerline, and an "English control" to put a spin on the puck.

Since Sanders wasn't in the TV or toy business, the next step was to sell the home video game system to a large manufacturer. After several failed attempts with General Electric, Zenith, and Sylvania, the television company Magnavox finally signed contracts with Sanders in late 1971. By 1972, Magnavox dealerships showed the new device, marketed as the Magnavox Odyssey. Unfortunately, the machine was badly overpriced at $100 and went largely unnoticed by the public due to limited marketing.

Breaking into the Amusement Business: Nolan Bushnell and Atari

William Higinbotham was a scientist, Steve Russell was a programming prodigy, and Ralph Baer was a determined inventor. However, for the video games industry to really take off, it needed a salesperson and entrepreneur. Enter Nolan Bushnell. As an engineering major at the University of Utah from 1962 to 1968, Nolan was lucky enough to be at one of the few colleges experimenting with computer graphics. He learned to program in FORTRAN and became an avid player of Steve Russell's *Spacewar*. Being a charismatic man, he convinced several senior students to help him create video games of their own. He ended up creating seven computer games with the help of his friends.

While the university and *Spacewar* were huge influences, an equal influence was Nolan's experience during those same years working at an amusement park north of Salt Lake City. Starting out on the midway selling balls to knock over milk bottles,

Nolan became an expert at convincing people to part with their quarters. Later, he would work at the park's pinball and electromechanical game arcade, learning how the devices worked and how the business operated. These experiences would later prove invaluable. Nolan was an engineer who loved video games, understood the amusement business, and had the charisma to sell his passion. All he needed was a product.

With *Spacewar* on his mind, in 1969 Nolan worked to re-create a *Spacewar*-inspired game as a coin-operated device. Since cheap computers lacked the computational power to make the game work, he resorted to building a custom device that would only play his single game. Once the prototype was completed after a few months, he found a partner to manufacture it: Nutting Associates. Nutting was already in the amusement business with a successful trivia game called *Computer Quiz*, but the company saw promise in the new action space game, *Computer Space*. Nutting licensed the game from Nolan and hired him as their chief engineer.
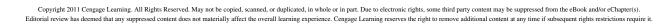
Soon there were 1,500 *Computer Space* machines manufactured in wildly curvy futuristic cabinets, but the public reaction to the game was poor. Although Nolan personally demonstrated the game at the 1971 Music Operators Association show in Chicago, few arcade operators bought the machines. In the end, the game was too complex and intimidating for early audiences. Thinking that he could do a better job of marketing, Nolan set out to start his own company to produce arcade games. That company would become Atari.

Bringing Games to the Masses

The Atari name is synonymous with video games. However, in 1972, it was a tiny startup with Nolan Bushnell as its visionary leader. While Nolan worked on plans to combine the physics of *Computer Space* with a racetrack concept, he hired an engineer named Al Alcorn. Al's first warm-up assignment was to make a game based on ping-pong with one ball and two paddles. After three months, a working prototype was finished. Al wasn't sure the end product would be successful as an arcade game, but Nolan was impressed and dubbed the game *Pong*. After two weeks of testing at a local tavern, it seemed clear that *Pong* would be a hit.

Soon after Atari started marketing *Pong*, Magnavox took Atari to court. Unfortunately for Atari, Ralph Baer kept impeccable records of his inventing process and had filed numerous patents during the late 1960s. Magnavox alleged that Atari had violated many of Ralph's patents and even more critically had copied Ralph's ping-pong concept. In depositions, witnesses also alleged that Nolan Bushnell had been given a demonstration of the Magnavox Odyssey at a large trade show in May of 1972.

In the end, Atari settled with Magnavox in 1976 for a one-time license payment of $700,000. After that, Atari was free to produce video games without paying any more money to Magnavox—"a sweetheart deal" as Nolan would later put it. As part of the settlement, Magnavox agreed to aggressively go after other video game makers, demanding royalties on every video game produced. Nolan escaped from this predicament with Atari still intact and still on top.

Pong became the first well-known video game and helped launch the entire video games industry. Atari struggled to keep up with orders for *Pong*, while other companies imitated it and exploited Atari's success. Atari became the premier video game company; however, it was forced to innovate to keep competitors at bay. During the 1970s, this innovation led to Atari creating the first racing game, *Trak 10*, and the first maze chase game, *Gotcha*.

The Console Kings

After the success of *Pong*, the next stage in the evolution of video games in the home was the cartridge-based console. Atari was an important player, but was soon joined by other companies with a mark to make of their own.

Atari and the 2600

In 1977, Atari entered the cartridge-based home console market with the Atari Video Computer System (later redubbed the Atari 2600). Despite their reputation for innovation, they were not the first company to release a cartridge-based home system, having been beaten to the punch by two short-lived consoles, the Fairchild VES and the RCA Studio II. While they weren't the first to market, after a rocky Christmas, they became the first giant success (selling well for the next 10 years), and the name of the system became nearly synonymous with video games. Initially released with nine games, it was an innovative system based on the idea of moving costly functionality out of the hardware and into the software. In addition to having brightly colored graphics and selector switches that selected the games and changed difficulty settings, it also introduced the joystick to the home market.

Part of the reason for its success was the huge variety of games that could be made for it—an unintended consequence of having an architecture built around saving costs in the hardware. Third-party companies formed to take advantage of the open architecture and create games without Atari's blessing. The most famous of these was Activision, which was formed by four ex-employees of Atari. Atari initially tried to stop third-party companies from making games for its system, but later relented and charged royalties on the games instead. This is standard practice in the home console market these days, with massive sums of money in the form of royalties exchanging hands for games to be "licensed" by the console manufacturers.

Video Game Crash of 1983

In 1983, a great shakeup occurred in the video games industry that would have serious repercussions on the fledgling market. There were several factors leading to the crash: a poor economy, natural market cycles, and consumer perception that video games were just a fad. Two of the largest factors leading to the crash were the role of the Atari and the 2600, and the introduction of cheap home computers to the market.

In addition to a glut of poor third-party games released for the Atari 2600 at that time, two infamously bad high-profile first-party titles were released for the system that year. The home console version of *Pac-Man* was a disappointing rendition of its video arcade counterpart, featuring poor graphics and differing far too much from the beloved original. The game *E.T.*, a tie-in with the blockbuster Spielberg movie, was created in a frantically rushed five weeks by Atari programmer Howard Scott Warshaw. The game rights were purchased for $20 million, with the expectation that the game would be a big Christmas hit. Gameplay was poor, the programming was understandably buggy, and the game was another disappointment for Atari, who had produced more copies of the game than there were 2600s in homes at the time (leading to now-substantiated rumors of New Mexico landfills being filled with millions of cartridges). These two games, given other factors, did irreparable damage to Atari's reputation. Moreover, while Atari alone had created more game cartridges than could be absorbed by the market, the oversupply of third-party game cartridges for the 2600 exacerbated the issue.

Another factor was the influx of inexpensive home computers into the market—particularly the Commodore Vic-20, Commodore 64, and Atari 400. Where computers had long been expensive and the province of specialty stores, the early 1980s saw computers being sold from department stores, toy stores—everywhere that video game consoles were selling. The computers offered a compelling sales pitch, duplicating many of the popular games from the consoles, while also offering software such as word processing and accounting programs. In addition, companies like Commodore offered trade-in deals on used game machines, further encouraging people to abandon their consoles.

As a result of increased competition, the lack of a next-generation console being ready, the huge glut of poor first- and third-party games, and a bad economy—the market crashed. The third-party companies, unable to sell their product, were also unable to pay their distributors and had to close doors. Atari, a bulwark against the panic that was setting in, eventually began to dump its product cheaply on the market and then collapsed as well. The consumers, seeing this, began to believe that it was all a fad, and lost confidence in the industry. Companies like Mattel, Magnavox, and Coleco, as well as a host of others, got out of the video game business. The slump lasted for years, until the introduction of the NES console from the Japanese company Nintendo.

Nintendo and Shigeru Miyamoto

Nintendo helped shape the video games industry and pull it out of the slump of 1983, and continues to be a major force and innovator. Surprisingly, Nintendo was founded over 100 years ago, in 1889, and started out making hanafuda cards (Japanese playing cards). By the middle of the twentieth century, Nintendo had done well with Disney-licensed Western-style cards and later expanded into toys. During the late 1970s, toys

began to move toward electronic video games, and Nintendo joined the fray with the introduction of the *Game and Watch* series.

The *Game and Watch* series, created by the visionary Gunpei Yokoi in 1980, was a line of over 50 handheld games that featured one or two LCD screens. As the name implies, each unit had one simple game along with the functionality of a digital watch. Gunpei invented the D-Pad (the plus-shaped directional pad found on most modern-day controllers), and would later go on to create the handheld Game Boy and the groundbreaking NES game *Metroid*.

Around the same time as the *Game and Watch* series, another visionary creator within Nintendo began designing the arcade game *Donkey Kong*. Nintendo had shipped 3,000 *Radarscope* games to the United States, but only 1,000 sold. Desperate to sell the remaining inventory, a young Shigeru Miyamoto was given the task of creating a new game that could be put within the *Radarscope* cabinets. Shigeru started out by creating an elaborate story about a gorilla that had stolen a carpenter's girlfriend. This carpenter, simply named Jumpman (but later known as Mario), would be forced to avoid barrels and flames, while jumping around on steel girders to reach his girlfriend. The converted *Radarscope* units quickly sold out in 1981 and orders continued to roll in. *Donkey Kong* would become one of the most influential arcade games ever, selling more than 65,000 units in the United States, and launching Mario as the enduring corporate mascot of Nintendo.

Shigeru Miyamoto's Mario character has now appeared in more than 80 games, selling a combined total of roughly 200 million games. The most notable are *Mario Brothers*, the *Super Mario Brothers* series, *Super Mario 64*, *Super Mario Kart*, and the *Mario Party* series. In 1983, *Mario Brothers* first introduced Mario's brother, Luigi. The 1985 game *Super Mario Brothers*, which first appeared in arcades and later on the Nintendo Entertainment System (NES), is recognized as one of the all-time best-selling games, with approximately 40 million copies sold in North America alone. In 1996, *Super Mario 64* on the Nintendo 64 console would again innovate by bringing the platform genre into 3D. For the first time, players could explore Mario's world, running, jumping, swimming, flying, and tiptoeing wherever the player wished.

Although retailers were reluctant to stock home video games after the 1983 video game crash, in 1985 Nintendo was able to position the NES in a manner that made it more palatable to risk-averse retailers. The unit was bundled with a light gun and a robot named R.O.B. (Robotic Operating Buddy), and was labeled as an "entertainment system" rather than a "video game system." Nintendo also guaranteed to retailers that their company would buy back all unsold systems, to further put them at ease. This unique positioning worked, and the NES snuck onto retailer shelves and soon became a remarkable success.

During the late 1980s, Nintendo's success was so extreme that at times they owned more than 90 percent of the video game market. As a result of being too successful, internally Nintendo was worried that they might lose their "Nintendo" trademark since it was becoming synonymous with "video game" and "video game machine."

However, this fear would fade and by the late 1990s, it was more common to hear "PlayStation" used to obliquely refer to video game machines.

Today, Nintendo remains a considerable force in the video games industry. While always enjoying nearly unchallenged dominance in the handheld market with the Game Boy, Game Boy Advance, and Nintendo DS, Nintendo had seemed to stumble with the N64 and the Nintendo GameCube on the home console front. While neither system was considered a failure, the sales numbers indicated a cult (rather than mainstream) success. Nintendo's console fortunes turned with the release of the Wii on November 19, 2006.

The Wii was a risky venture, relying as it did on an innovative controller while purposely eschewing the system spec arms race in order to hit a low, introductory price point of $250. By building a machine dramatically less powerful than its rivals, Nintendo bet that the lower priced systems coupled with innovative games would outweigh the downside of less horsepower and lower quality graphics. The risk paid off and as of December 2008, the Wii has sold more than 45 million units across the world. This represents roughly 50 percent of current-generation console sales. *Wii Sports* (which is bundled with the Wii in most regions) is now the best-selling videogame of all time, surpassing *Super Mario Bros* for the NES (also a bundled title). To date, the top 10 best-selling video games of all time are Nintendo titles. Sixteen of the top 20 best-selling video games of all time are Nintendo titles. Given Nintendo's past console sales and current console successes as well as top 10 franchises like *Pokémon* and *Mario*, Nintendo easily owns the biggest piece of the video games business.

Sega

Japanese company Sega started life in 1952 as Service Games. Seeing a viable market supplying jukeboxes and other amusement devices to U.S. military bases, American creators Dick Stewart and Ray Lemaire soon grew the company beyond their modest ambitions. Changing their name to Sega (the first two letters of each word in their previous company name), they proceeded to take advantage of the recovering Japanese economy. In 1965, they merged with Dave Rosen's Rosen Enterprises, a company formed by another American in 1953 to import arcade machines from the United States into Japanese arcades. They became Sega Enterprises Ltd., and created many of the finest mechanical arcade games ever built.

In the 1970s, they began working on arcade video games, acquiring California company Gremlin, and soon expanded by creating games for the home console market. In the early 1980s, Sega briefly became part of Hollywood moviemaker Paramount, until the video game crash saw them parting ways. Rosen, his head of Japanese operations H. Nakayama, and Japanese investor Mr. Ohkawa bought the company back. Rosen became head of U.S. operations, with Nakayama the president and Ohkawa the chairperson back in Japan.

Sega had been developing a home console during this time, the Sega Master System. After seeing Nintendo's NES revive the video games market, Sega made a distribution deal with Tonka Toys and released the Master System nearly a year after the NES proved that there was still a viable market. Sega had trouble securing third-party software for its new system (Nintendo had locked many developers in with exclusive contracts), and mostly ported its arcade properties to the system.

While the Master System was not a great success, it gave Sega time to create a 16-bit console to fuel the next generation. By Christmas 1990, Sega had released the Genesis (inspired by a sense of rebirth and the Genesis Project from *Star Trek II: The Wrath of Khan*). Its main competition was the aging NES and NEC's PC Engine (released in the United States as the TurboGrafx-16). Sega won the Christmas battle with its combination of well-known arcade titles and sports games. Ultimately, Sega gained some important support with a third-party deal with Electronic Arts, and the 16-bit console race was on between Sega, Nintendo, and NEC, with all three parties remaining viable throughout.

In 1994 in Japan, Sega released its next system, the Saturn. While the system did well in Japan on release, the May 1995 U.S. release was more problematic. Consumers had become unhappy with Sega because of the release or failed release of add-ons for the Genesis. The Saturn was more expensive than Sony's PlayStation by $100, and because of a rushed introduction, it had initial supply problems. All of this ultimately contributed to the system's demise by 1998, despite some innovative games such as Yuji Naka's *Nights* and add-ons such as a modem.

The year 1999 saw the release of Sega's last home console to date, the Sega Dreamcast. An innovative console in many ways, it included a built-in 56K modem, 128-bit graphics, and support for graphical memory cards that could display game objects or mini games on the controller. Despite the innovative nature of the system, it was unable to gain a strong foothold. The PlayStation and N64 were still strong in the marketplace, and when Sony announced the specifications of its next-generation system the PlayStation 2, Nintendo revealed the codename of "Dolphin" for its next project, and Microsoft made clear its intentions to join the console market, the Dreamcast fell by the wayside, ultimately being discontinued before its product lifecycle was over. Sega has since shifted business focus, producing quality software for the other consoles.

While Sega employed many talented people, of special note was Yu Suzuki who drove many of Sega's best arcade games. He was responsible for *Hang-On*, *Space Harrier*, *Out Run*, and *Afterburner*, which were all pseudo-3D arcade games. Then, in 1992, he began producing the *Virtua* series of games that relied on real 3D hardware. The most notable was *Virtua Fighter*, the first real-time 3D fighting game. The Smithsonian Institute recognized the *Virtua Fighter* series for its contribution to arts and entertainment, and *Virtua Fighter* has become part of the Smithsonian Institution's Permanent Research Collection (the first Japanese game to receive that honor). Later in 2001,

Yu Suzuki finished the console game *Shenmue*, which took five years to develop and roughly $50 million, making it one of the most expensive video games ever created. In development, the game was referred to as *Virtua Fighter RPG*, which characterized the game quite nicely with its mix of *Virtua Fighter*-like battles and RPG elements.

Sony's PlayStation

In 1991, consumer electronics giant Sony contracted with Nintendo to design a CD-ROM game system, but the project was prematurely abandoned. As a result of the knowledge gained, Sony took its newly honed expertise and decided to pursue its own video game console. In December 1994, Sony released the PlayStation in Japan, and in September 1995 released it in both the United States and Europe. Lacking good first-party games, Sony relied on third-party publishers to provide the lion's share of games. While not a huge success at first, the PlayStation increased in popularity and slowly became the dominant home console of its time. This was largely due to exclusive games, such as the *Final Fantasy* series, but was also influenced by the cheaper CD game format, which resulted in faster manufacturing times and less money tied up in inventory—both critical factors in getting third-party support.

The year 2000 saw the release of the Sony PlayStation 2 in Japan and the United States (a year before Nintendo's GameCube and Microsoft's Xbox were released). Incorporating a DVD player, strong third-party support, and maintaining backward compatibility with the PlayStation, the PlayStation 2 dominated the home console market of the early 2000s.

Sony had hoped to extend that dominance into the handheld market in 2005 with the release of the disc-based PlayStation Portable (PSP), a device that has comparable 3D power to the PlayStation 2, as well as being an MP3 and movie player. Thus far, despite being more powerful than the Nintendo DS, as well as being the first handheld console to feature an optical disc drive, PSP sales have lagged behind the Nintendo DS, and UMD movie sales have never performed to expectations. Still, it has sold 43 million units worldwide and a third redesigned model is soon to be released.

While the PlayStation 2 was a tale of unmitigated success, the PlayStation 3 has a much more troubled story. Released in November 2006, the PS3 has thus far captured only about 21 percent of the current generation home console sales. Early reviews criticized the system's higher price point (when compared to the Wii and Xbox 360) and poor launch titles. Other contributing factors to slow sales included the loss of former exclusives such as *Grand Theft Auto*, a controller that lacked the fan-beloved rumble feature, consumer-confusing multiple models, and a price-raising high-definition Blu-Ray drive. The fact that Blu-Ray won as the high-definition successor to DVD would seem to indicate good fortunes for Sony, but PS3 sales are still lagging, and it remains to be seen if Sony can avoid last-place status for this current console generation.

Microsoft and the Xbox

Founded in 1975 by Bill Gates and Paul Allen, Microsoft's modest beginnings creating and selling BASIC interpreters have lead to them becoming the largest software development company in the world. The Windows operating system is nearly ubiquitous in the world of personal and business computers. Before 2001, Microsoft was somewhat less well known for its games, although they have two strong franchises in *Age of Empires* and *Microsoft Flight Simulator*.

In 1999, they decided to enter the home console market, going head to head against Sony and Nintendo. Released on November 15, 2001, the PC architecture-based Xbox became a very popular system with a strong software lineup topped by the first-person shooters *Halo* and *Halo 2*. Perhaps its strongest feature was Xbox Live, a subscription-based online service connecting Xbox users nationwide.

Quick on the heels of the Xbox, Microsoft followed with the Xbox 360 in November of 2005. Released a full year before either the Wii or the PS3, Microsoft hoped to get a head start on the "next-gen" console war and become deeply entrenched in gamer's minds, hearts, and living rooms. Their attempt has met with partial success. Strongly outselling the PS3 (which is seen as its strongest competitor in the hardcore gamer demographic), it nevertheless trails behind the Wii. Still, Microsoft has continued to invest in and expand upon the Xbox Live service, making it the premier online service of the current generation of consoles with its offerings of game matchmaking, as well as downloadable games, movies, TV shows, and hooks into third-party services such as Netflix.

Microsoft has invested and lost billions of dollars with the Xbox, Xbox 360, and Xbox Live, and is not expecting to make a sustained profit on the Xbox franchise for years to come, instead sacrificing money in a long-term bid to gain a foothold in living rooms worldwide. With each subsequent generation of consoles, they've made further inroads to this purpose, as well as some very compelling hardware.

Home Computers

Simultaneous to the advent of the home consoles is the introduction of inexpensive home computers into the marketplace. Where before computers had been the purview of universities and businesses, the introduction of the home computer had serious implications for the budding electronic games business.

Apple Computer

Formed on April Fools Day, 1976, Apple Computer began life as a partnership between two California whiz kids and Hewlett-Packard employees, Steve Wozniak and Steve Jobs. "Woz," as he has become known, was a homebrew computer genius. Jobs was a fellow electronics enthusiast and former Atari employee with an abundance of confidence and a strong vision. Woz showed his latest creation at the Homebrew Computing Club, dubbed the Apple I, and Jobs convinced him that they should start

a company together. Seeing some success with the Apple I in local shops, Jobs made a gutsy move and went to Atari's Nolan Bushnell to ask for advice. Bushnell's advice eventually led Jobs to Mike Markkula, a former Intel employee who had retired as a millionaire. Markkula invested his money in the young dreamers, and the company was born.

Their next computer, the Apple II, was released in 1977 and started a revolution. Featuring an integrated keyboard and TV or monitor support, the Apple II was the first computer to gain a real foothold in the home market and found huge support with software publishers. With its open design and hardware slots, the Apple II also allowed the use of a plethora of third-party devices that could improve its capabilities. Various models of the Apple II came out during its lifetime, each improving on its predecessor—the most famous being the Apple IIe. The Apple IIc Plus was the last new computer in the Apple II series, and was produced in 1988. A popular staple in school classrooms, however, the Apple IIgs were produced and sold until 1993. Many classic games were created or ported to the Apple II, including *The Bard's Tale*, *Castle Wolfenstein*, *Choplifter*, the Infocom games, *Karateka*, *Prince of Persia*, *Swashbuckler*, the *Ultima* series, and *Wizardry*. All told, somewhere in the neighborhood of 366 games were produced for the Apple II series.

While the modern gaming landscape strongly favors consoles and PC gaming, the switch to Intel chip architecture has made Apple game development easier than ever before. While most game releases for Apple's OS X are ports of recent PC game successes, there are some notable games that favor simultaneous release on OS X and Windows XP/Vista such as Blizzard's *World of Warcraft* and EA's *Spore*.

Commodore

Founded in 1954 by Auschwitz survivor Jack Tramiel, Commodore Business Machines started life as a typewriter manufacturer. Switching from typewriters to adding machines and then calculators before settling on computers in 1977, the company's motto became "Computer for the masses, not the classes." In 1977, it released the Commodore PET, a simple computer with a monochrome monitor, keyboard, tape drive, and metal case. The PET was not a huge success (finding its best market in classrooms because of its durable metal construction). Their next computer would change all that.

The Commodore Vic-20 debuted in 1981 with an ad campaign starring William Shatner that posed the question, "Why buy just a video game?" Although the computer was fairly low-powered for the time, its $299 price point and placement in department stores and toy stores helped it become the first computer to sell more than one million units. Eventually, the Vic-20 would sell 2.5 million units before being discontinued.

The follow-up to the Vic-20 was a significant improvement, with its 64K of memory and a customized sound chip. Selling for $595, the Commodore 64 was released in 1982 in an effort to compete more directly with the Apple II. A three-way

battle erupted between Texas Instruments, Atari, and Commodore. Tramiel reduced the price of the C64 to compete with the lowered prices of the TI-99/4a. The plan worked, and the Commodore 64 became the best-selling computer in history, moving 22 million units in 1983 alone. The battle did serious damage to the competition, with Texas Instruments dropping out entirely and Atari being seriously hurt. The price war also had consequences at Commodore, though, and Tramiel left the company in 1984.

Commodore tried to pick up the pieces by buying a design for a new computer from a group of ex-Atari designers. In 1985, they released this design as the Amiga. The Amiga was an innovative machine that ultimately had trouble finding its niche in a market dominated by Apple's Macintosh and cheap PC clones. In 1992, the last Amigas, the A4000 and A1200, were released. The third-generation Amigas were powerful computers, offering a compelling alternative to PCs, but were more expensive —dooming them to failure.

IBM

In August 1981, the venerable computer manufacturer IBM introduced the IBM PC (short for "personal computer"). The PC represented a departure for IBM, which had failed to bring an affordable computer to market once before with the IBM 5100. This time around, IBM committed a small team of engineers headed by William Lowe to the project, and gave them free reign for their design. The team came up with the IBM 5150 within a year, deciding to use parts bought from OEMs (Original Equipment Manufacturers) instead of IBM-designed components. Another important aspect of the PC, one that would have important ramifications for IBM, was the use of an open architecture, allowing other companies to create compatible machines or "clones." IBM's goal with the PC was to license their BIOS and keep innovating to dominate the competition.

The PC was released with a price tag of $1,565.00, placing it outside the price range of most homes. However, it made important inroads with business users when the *VisiCalc* spreadsheet program was ported to it. More PC models followed, offering expanded capability (such as internal hard drives). Eventually, the PC and its compatibles would become a significant player in the home market, with most games being ported to it or developed for it.

IBM's plan to license their BIOS and keep an open architecture ultimately backfired when the BIOS was reverse-engineered by several companies that then came to market with compatible clones that were cheaper. Even then, IBM did great business because consumers felt they could trust them. This trust started to erode when IBM released computers that did not maintain 100 percent compatibility with their own specification. Largely, consumers wanted a computer that could run programs branded as IBM PC software right out of the box. When they began to feel that other manufacturers could provide them with that security cheaper, IBM's more expensive computers fell by the wayside.

Today, the term *PC* has become a generic term for personal computers, and IBM has completely removed itself as a player in the home market. The modern PC architecture is still very similar to that originally created by William Lowe's team, although more powerful by leaps and bounds. The IBM-compatible PC (running some variant of Windows or Linux) still dominates the personal computer market, with only Apple providing a significant alternative.

The Designers

In addition to the companies that create the hardware for games to run on, someone must create the games themselves—enter the designers.

Maxis and Will Wright

Will Wright has created one of the most enduring software legacies around. In 1984, Wright created the successful game *Raid on Bungeling Bay* for Brøderbund. His next project, inspired by the books *Urban Dynamics* and *System Dynamics* by Jay Forester, was a Commodore 64 game initially called *City Builder* or *Micropolis*. Eventually, teaming with fledgling company Maxis (created by Jeff Braun and Ed Kilham with a desire to develop video games that adults would enjoy), the game would be renamed *SimCity*.

In February 1989, it was released for the Apple Macintosh and Commodore Amiga. An article in *Newsweek* and good press all around helped the innovative city simulation game become a success. People loved the game, in which you managed many aspects of a city's development. The *Sim* appellation, suggested by Maxis writer Michael Bremer, helped defined a brand.

Wright followed *SimCity* with a somewhat less successful game called *SimEarth* in which you guided the ecosystem, geology, and climate of Earth. The follow-up to that was a somewhat more playful game called *SimAnt*, an ant colony simulation. Wright's next project was *SimCopter*, an ambitious simulation that allowed you to fly a helicopter through *SimCity 2000* cities. Maxis published other *Sim* titles (including *Sim-Tower*, *SimFarm*, and *SimLife*), but Wright's next project wouldn't debut for a few years. When it did, it would cement the *Sim* name in popular culture.

While working on *SimAnt* and *SimCopter*, Wright was inspired by books once more—*Understanding Comics* by Scott McCloud provided the idea for a level of abstraction in representation that would allow players to put more of themselves into a game; the architecture book *A Pattern Language*, by Chris Alexander, led to the idea of making placement of household elements fun. The game, codenamed *Project X* for much of its early life, was eventually called *The Sims*.

The Sims, a "God game" of sorts, is a simulation of the lives of virtual people. You guide them in many of the daily elements of their lives—cooking, eating, hygiene, jobs, learning, sleeping, and so forth—while outfitting their house based on the money they earn. The series has become a phenomenon—selling more than 100 million copies since its January 2000 debut. It has an unprecedented number of expansion

packs, as well as multiple sequels and ports, and has become one of those rare video games played by people who traditionally do not purchase or play video games.

In September 2008, Wright and Maxis released *Spore*, a game that tracks a species from microbe up to space-faring race through four distinct stages and types of gameplay. Characteristics that players select in earlier stages have ramifications throughout the later stages and so on. A large aspect of the game is the creation and sharing of content with other *Spore* players, including vehicles, buildings, and even species. The game was released on Mac, PC, and DS platforms simultaneously and sold millions of copies within weeks of release. One "creature pack" has been released so far, with more expansions planned as well as versions planned for other systems.

MicroProse and Sid Meier

MicroProse began life as something of a dare. On a company trip to Las Vegas, Sid Meier and J. W. "Wild Bill" Stealey met over a game of *Red Baron*, an arcade dogfight machine. Wild Bill had been beating all comers until Sid Meier plugged in his quarter. Meier impressed Stealey by trouncing the game—one that Meier had never played before. Meier followed up his impressive performance with a boast, telling Stealey that he could program a better game in just one week. Stealey countered by saying that if Meier could program it, he could sell it.

It took Meier two months, but he created a game called *Hellcat Ace*. Stealey followed up on his end of the bargain and successfully sold 50 copies right away, so they joined forces and created a company. They named it MicroProse as a nod to the microprofessionals working on the games and the idea that they would be creating works of art. More games were created, and the money started coming in. They quit their jobs at the Baltimore defense contractor that had sent them on that fateful Vegas trip, and started working on MicroProse projects full time.

Solo Flight (1984) was their first national success, and its combination of fun and realistic gameplay helped to define what the company was shooting for. More strategic simulations followed, games putting the player in planes, submarines, or in control of armies in hex-based board game conversions as in 1985's *Decision in the Desert*.

Then, in 1987, came the first game to bear Sid's name right on the cover—*Sid Meier's Pirates!* A clever mix of role-playing, action, and swash-buckling adventure, *Pirates!* is largely regarded as one of the best games of all time. (The demand for a visit back to the sun-splashed Caribbean game world was so strong that Meier even remade it in 2004 with updated graphics and modifications to a few gameplay elements.) More signature games would follow, the next being *Railroad Tycoon*—a "God game" where you controlled the nation's budding transportation system and economy during the golden age of railroads.

In 1991, Sid expanded on ideas from *Railroad Tycoon*, threw in a little *SimCity* and *Empire*, and came up with *Sid Meier's Civilization*. The game was an instant classic, with gameplay that inspired many a late-night session with its addictive "one

more turn" style. In the game, the player guided a budding civilization through all the technologies of the ages—from bronze working and pottery to computers and nuclear power. The ultimate goal of the game was adaptable to the style of the player, with peaceful strategies and gameplay being just as viable as ones that were more warlike. The game has sponsored numerous sequels; some with Meier's guiding hand, and others that just carried the name and spirit. In 2001, Sid's new company Firaxis obtained the rights to the series and created *Civilization III*, expanding and updating the classic game with new elements while retaining the same addictive play. Since then they have released multiple expansion packs to *Civilization III*, *Civilization IV* with multiple expansion packs, and a new version of *Colonization* using the *Civilization IV* engine.

MicroProse had many hits with other talented game designers in its stable. Particularly of note were the games *Master of Orion*, a space exploration game created by Steve Barcia's SimTex group, and 1994's turn-based UFO-inspired squad combat game *X-Com* by Mythos Gaming.

Spectrum Holobyte acquired MicroProse in 1993, with Sid leaving to form Firaxis games some time after. In 1998, Hasbro Interactive purchased MicroProse, closing both California and North Carolina studios in 1999. In 2001, French company Infogrames (which later purchased Atari and renamed itself to the classic brand) acquired Hasbro Interactive and discontinued the MicroProse label, eventually closing the Maryland offices where MicroProse started.

Sierra and Ken and Roberta Williams

One of the most enduring computer game companies of all time, Sierra, literally got its start on a kitchen table. Programmer Ken Williams had created a company named On-Line systems in 1979, doing odd programming jobs for the financial sector. His wife, Roberta, with newborn in tow and too much time on her hands, played a computer game called *Colossal Cave* on a mainframe through a connection from Ken's TRS-80. Inspired by this simple line-text adventure, she started planning a computer adventure game of her own, mapping it out with pieces of paper strewn across their kitchen table. One romantic dinner later, Roberta convinced Ken to help her with the project and a legacy was born.

Mystery House, the world's first graphical adventure game, was their first product. Released in 1980—and distributed by hand to stores in Ziploc® bags—*Mystery House* eventually sold 80,000 copies. Their output was prolific in those first few years, making a variety of re-creations of arcade games, graphical adventures, and licensed titles. Their real claims to fame, though, were the graphical adventure titles that Roberta scripted, such as *The Princess and The Warrior*. Ken was also an innovator, doing things with graphics that hadn't been done before, drawing complex scenes programmatically, rather than relying on premade graphics stored on the disk (a technique that saved tremendous amounts of space).

In 1982, they changed their name to Sierra On-Line and moved their offices to Oakhurst, California. IBM approached them soon after to create a computer game that would show off its new computer, the PCjr. Roberta made an important leap at this point. With the advanced capabilities of the PCjr, she saw a way to place the player on the computer screen, rendered in third-person. Given the change in focus, her story writing took off, and the IBM-commissioned game became the now-classic *King's Quest*.

Released in 1984, *King's Quest* was a huge success, eventually spawning seven sequels. Other *Quest* titles by other designers followed, including *Space Quest* and *Police Quest*. Each started a successful franchise, and Sierra became hugely profitable. In addition to the *Quest* lineup, Sierra had success with several other franchises as well, including the adult-aimed comedy series *Leisure Suit Larry*, supernatural detective *Gabriel Knight's* adventures, *Phantasmagoria* (a mature horror series), the futuristic *EarthSiege*, and the blockbuster first-person shooter *Half-Life*.

In 1994, they moved their headquarters to Bellevue, Washington in an effort to place themselves in more of a technological hub. In the 1990s, Sierra started acquiring other studios to add to its growing stable of talent (Impressions and Dynamix being the most notable). In 1996, they were acquired themselves by CUC, later merging with HFS to become Cendant Software. Cendant was, in turn, purchased by French publisher Havas Interactive, and then eventually became part of the Vivendi empire.

Today, Sierra Entertainment exists only as a brand of Vivendi Universal games. Ken left Sierra a year after the sale to CUC. Roberta's last production credits were in 1999, although she has not ruled out coming back to computer games. The Bellevue offices were closed in 2004.

Origin Systems and Richard Garriott

Inspired by *Dungeons & Dragons*, J. R. R. Tolkien's *The Lord of the Rings*, and his love of computers, Richard Garriott built an RPG empire. Garriott created his first commercial game, *Akalabeth*, as a teenager working one summer at a Computerland store. Based on a game he had created at school, *Akalabeth* was a first-person dungeon crawl where players received quests from a character named "Lord British" to kill progressively harder monsters. The Ziploc-bagged adventure caught the attention of California Pacific Computer, who struck a deal with Garriot that gave him $5 per game sold. Garriott made $150,000 and then started work on a game called *Ultimatum*.

Ultima I, as it was later called, was published in 1981 and put the player on a quest to bring down the evil wizard Mondain. *Ultima I* was later republished by Sierra On-Line when California Pacific went out of business. In 1982, Sierra published *Ultima II*, a grand time-traveling adventure sending the player on a quest to thwart Mondain's lover, Minax. A signature element of the *Ultima* series was a cloth map contained in each box. (One of the reasons Garriott went with Sierra as a publisher was their willingness to include the map.) By the time *Ultima III* came out, though,

Garriott had become disenchanted with the deal with Sierra and created his own company, Origin Systems.

While the early *Ultima*s were good games, with *Ultima IV*, Garriott (or "Lord British" as he was known in and out of his games) raised the bar. Garriott has acknowledged that the first three games were really a process of him learning to program, and that with *Ultima IV,* he concentrated on the story for the first time. It contained an element of morality and ethics to it, an element that Lord British worried would ruin the game's chances for success, but *Ultima IV* went to the top of the software charts. In the game, the player's goal was to become a prophet, the paragon of the Eight Virtues of the Avatar. This was a departure from most previous RPGs, in which the goal was to dispose of some evildoer. The next two *Ultima*s continued the story started in *Ultima IV*.

EA acquired Origin Systems in 1992, around the time that production was started on *Ultima VII*. In 1997, *Ultima Online*, one of the first massively multiplayer online role-playing games (MMORPGs), was released. The game was enough of a success that EA decided in 1999 that Origin would become an online-only company. Garriott left soon after. While many expansion packs to *Ultima Online* were released, that last single-player *Ultima—Ultima IX: Ascension—*was released in 1999. *Ultima IX: Ascension* was released before it was finished, and was notorious for its bugs and incomplete storyline. Origin Systems was disbanded in 2004 by EA, although they still retain rights to the brand.

Garriot formed Destination Games in 2000 and in 2001 partnered with NCSoft, a South Korean MMORPG maker who had struck online gaming gold with *Lineage*. The Austin offices of Destination Games became NCSoft Austin, and Garriot worked there as producer and designer of the sci-fi MMORPG *Tabula Rasa*. Since then, he has become the first child of an astronaut to also go into space, flying to the International Space Station as a "space tourist" in October 2008. The following month he announced his plans to leave NCSoft in a desire to pursue new interests resulting from his space flight. Later that month, NCSoft announced they would be discontinuing live service for *Tabula Rasa* the following February.

Origin's Other Blockbuster: *Wing Commander*

Ultima was not the only famous series to come out of Origin Studios. In 1990, Chris Roberts created *Wing Commander*. The games featured an epic storyline based on intergalactic war. The story was told through a series of starfighter missions and cutscenes. Later installments of the game featured full-motion video cut-scenes starring Hollywood actors such as Mark Hamill and Malcolm McDowell. In 1996, Chris Roberts left Origin to form his own studio, Digital Anvil (although EA has continued to produce *Wing Commander* games). He revisited the *Wing Commander* universe in 1999 when he directed a live-action movie version set during the timeline of the first game. Since then, he has continued to work as a movie producer in Hollywood.

Peter Molyneux

In 1987, Peter Molyneux and Les Edgar transformed their earlier company, Taurus, into Bullfrog Productions. Two years later they would have a bonafide hit with the first PC "God game" *Populous*. This innovative game saw the player overseeing an entire world and its denizens as a deity of sorts, instead of as a specific character. *Populous* spawned sequels and ports across many platforms even as recently as November 2008 when a Nintendo DS version was released. In addition, it put UK-based Bullfrog on the map and made a name for designer Peter Molyneux. Since then, he has released a steady flow of games either as designer or producer, first at Bullfrog and then, after they were sold to EA in 1995, from Lionhead Studios, which he founded in 1997.

While Peter has a reputation for over-hyping his own games, often discussing features with the press that don't make it into the final release (although given the nature of video game production cycles, this is somewhat understandable as features are often dropped to meet deadlines), he has nevertheless had a highly respectable string of successes associated with his name, including such hits as *Magic Carpet*, *Dungeon Keeper*, *Black and White*, and *Fable*.

The latest game to be released by Molyneux is 2008's *Fable II*, an ambitious sequel that has garnered many game-of-the-year awards for its well-executed story and gameplay. Set 500 years after the first *Fable* game, this action role-playing game incorporates such now-standard tropes as good or evil gameplay affecting the appearance and in-game reactions to the character, as well as a novel take on the NPC relationship, which allows you to have marriages, multiple marriages, children, divorces, and more. Downloadable content for the game has already come in the form of the "*Knothole Island*" expansion, with more content planned.

The Phenomenons

While there are many success stories in the history of video games, there are a few breakouts that reach above and beyond the status of mere success. These phenomenons speak to the incredible innovation and spirit of discovery that has defined the industry.

Space Invaders

In 1978, the Japanese company Taito, with distribution partner Midway, introduced the U.S. market to the arcade machine *Space Invaders*. While not the first Japanese import, *Space Invaders* was the first big Japanese success. The game, created by Taito's Toshihiro Nishikado, featured a never-ending stream of airborne alien invaders attacking the player's lone base on the ground. The player used three destructible shields for cover while firing at the rows of aliens as they descended. All levels were essentially the same, but the aliens got progressively faster as the game went on, thus ensuring that the player would ultimately never win. The music was simple, but effective, keeping pace with the aliens' attack and increasing the tension. The graphics were simple—black and white with a color overlay on top of the video screen.

Despite its seemingly simple premise, presentation, and gameplay, the game was a huge success, creating a shortage of 100-yen coins in Japan when it was released. The game later went on to be successfully reproduced on a variety of home consoles, including the Atari 2600. Perhaps its most notable contribution to the world of video games was its introduction of the High Score, a saved list of the highest scores achieved during gameplay that was then displayed while the game was in attraction mode.

Pac-Man

Inspired by the Japanese folk hero Paku (who was known for his large appetite) and a pizza with one slice missing, Namco's Toru Iwatani created the most popular arcade game of all time. Originally dubbed *Puckman*, the game was Iwatani's attempt to create a completely nonviolent arcade game, one that would appeal to both men and women.

In the game, players used a simple four-position joystick to guide the yellow protagonist around the mazelike playing field. Pac-Man's mission was to eat all the little white dots, while trying to avoid four ghosts (named Inky, Blinky, Pinky, and Clyde) that chased him around the screen. On each screen were four larger dots that Pac-Man could eat to turn the tables—the ghosts become blue for a brief period, during which Pac-Man could eat them. The game was a huge hit in Japan, and with a slight name change to prevent vandals from easily turning the hero's name into something improper, *Pac-Man* debuted on American shores in 1981.

The Bally/Midway-distributed *Pac-Man* was a huge success in arcades, generating some $100 million worth of sales during its lifetime. The *Pac-Man* craze was not limited to arcade coin-ops, however, as a fevered nation bought everything from *Pac-Man* cereal and t-shirts to albums featuring songs about the hungry fellow. To date, there have been 10 sequels to the game, with likely more to follow that feature the enduring yellow hero, as well as Ms. Pac-Man and the ghosts Inky, Blinky, Pinky, and Clyde.

The Tangled History of *Tetris*

In 1985, Russian programmer Alexey Pajitnov created the game *Tetris*, based on a puzzle game called *Pentominoes*. Pajitnov decided to take the concept onto the computer (specifically an Electronica 60 in the Computer Center at the Academy of Sciences in Moscow), making some important alterations to the concept in the process. Pajtinov first limited the blocks on his pieces to four instead of five, which reduced the number of shape permutations to seven. He then made the playing field two-dimensional and vertical, allowing the pieces to drop into place. While writing the code that rotated pieces, Pajitnov was impressed with the speed he was getting and decided the game needed to be in real time. Lastly, Pajitnov solved the problem of what to do when lines were filled in by removing the finished lines completely, allowing play to continue and new plays to open up. Renaming it *Tetris* (from the Greek word for four, "tetra"), he had Vadim Gerasimov port it to the PC. Gerasimov's port started spreading across Moscow and then on to Budapest, Hungary. From there, things got more complicated.

Hungarian programmers had ported Pajitnov's game to the Apple II and Commodore 64. One of these ports caught the attention of Robert Stein of Andromeda, a British software company. Stein started working with Pajitnov to get the rights, but sold the PC rights to Mirrorsoft UK—and its U.S. affiliate Spectrum Holobyte (a subsidiary of Pergamon, headed by Robert Maxwell)—before the deal was inked. The deal with Pajitnov fell through, and Stein contacted the Hungarian programmers, attempting to license it through them. Spectrum Holobyte's PC version was released and quickly became a hit.

Stein later went to Russia and eventually came back with home computer rights to *Tetris*—but no contract. Before Stein could work his other angle and secure rights from the Hungarian programmers, the *CBS Evening News* did a piece on *Tetris* that firmly established Pajitnov as the inventor of the program. Stein's negotiations with the Russians then started going through ELORG (Electronorgtechnica), the trade organization of the Soviet government. ELORG threatened to cancel any deals with Stein when they learned about his involvement with the Hungarian programmers. Eventually, they reached terms, with Stein getting the rights to do computer versions of *Tetris*, but specifically not arcade or handheld versions.

Things got further complicated, however, when Spectrum Holobyte sublicensed Japanese computer game rights to Bullet-Proof Software (under the leadership of Henk Rogers), and its UK division Mirrorsoft licensed home console and arcade rights to Tengen (an Atari company). These were rights that they did not actually possess. In November 1988, Bullet-Proof software released *Tetris* for the Nintendo FamiCom in Japan.

Rogers contacted Stein at the request of Nintendo of America president Minoru Arakawa. The Game Boy was in development, and Nintendo wanted to offer *Tetris* as a bundle with the new handheld. Months passed, and Stein failed to get the rights for Rogers, so Rogers flew to Moscow to try to secure the rights directly. Stein flew to Moscow as well, having guessed that Rogers had lost faith in his ability or willingness to secure the handheld rights and was attempting to take matters into his own hands. Spectrum Holobyte approached Nintendo at the same time, wanting to develop *Tetris* for the Game Boy. Kevin Maxwell, Robert Maxwell's son, flew to Moscow to attempt to gain the rights so they could create their handheld version.

Maxwell, Rogers, and Stein converged on Moscow at the same time. Rogers met with ELORG before the others, and secured the handheld rights. In the process of meeting with ELORG, the Russians were surprised to realize that a console version had already been developed (*Tetris* for FamiCom). Stein had never discussed with ELORG that he had sold console rights he didn't possess to Atari. Rogers pushed on, thinking he might be able to secure all console rights with Nintendo's muscle behind him.

Stein met with ELORG after Rogers and signed a document with the Russians that slightly altered his contract—a brief passage defining a computer in such a way that consoles and arcade games were clearly not covered by his contract. ELORG then told Stein that he could not get the handheld rights, but could get the arcade rights—so he did just that.

Maxwell made his way to ELORG. Maxwell was shown the FamiCom cartridge and, not realizing that his company had licensed it, told ELORG that it must be a fake. He didn't get the handheld rights he came for, and was then offered the chance to bid on any *Tetris* rights remaining.

When all was said and done, Rogers had secured the handheld rights for Nintendo, and had opened a door so Nintendo could bid on the console rights; Stein had secured the arcade rights, and signed a contract that defined very specifically what a computer was; and Maxwell had asserted that no legal console version existed, and secured for his company the opportunity to bid against Nintendo for console rights.

Nintendo's bid was too high for Maxwell's company to match, and Nintendo secured the home console rights. A lawsuit ensued, with Tengen suing Nintendo, alleging that a version of *Tetris* would violate their copyright. Nintendo countersued Tengen. Tengen then released *Tetris* for the NES, despite the legal issues. Tengen's contention was that the FamiCom was a computer, and a *Tetris* version on the platform violated their rights. Nintendo's assertion was that the Russians had never planned to give out video game rights until Nintendo had bid on them.

Nintendo won the lawsuit after many years, but an initial injunction favored them strongly. Tengen was forced to pull its version of *Tetris* for the NES off the shelves. Nintendo released *Tetris* for the NES, and then as a bundle with the Game Boy. Both versions sold phenomenally well, with the Game Boy pack-in version helping to sell Game Boys in the tens of millions.

In 1996, Pajitnov partnered with Rogers to form The Tetris Company LLC, which maintains and controls *Tetris* rights worldwide, allowing Pajitnov to see money from his sensational game—nearly 17 years after its creation.

Capcom and *Resident Evil*

Founded in 1979, Japanese Capsule Command (Capcom for short) is one of the premiere Japanese video game developers and game publishers. Over the years, they have created many memorable games, appearing on virtually every video game platform and in arcades, and have created three series of special note. First is the *Street Fighter* series of fighting games, immortalized in arcades and feature film. Second is the immensely popular platformer series *Mega Man*. Finally, is the series that popularized a genre, *Resident Evil*.

Resident Evil (known as *Biohazard* in Japan) coined the term "survival horror" in describing the genre it has come to define. In *Resident Evil*, you are part of an elite commando team sent in to retrieve another team that was lost investigating a series of gruesome murders outside Raccoon City. The game throws all manner of puzzles, zombies, and other undead things at the player, with the player's goal being to stay alive and solve the mystery of what has happened. The game has spawned 15 variations, updates, and sequels since its release on the Sony PlayStation in 1996, as well as two Hollywood movies (2002's *Resident Evil* and 2004's *Resident Evil: Apocalypse*).

Square and *Final Fantasy*

In 1987, in a last-ditch effort to stave off bankruptcy, Japanese software company Square Co., Ltd. released what they thought would be their last game. They were wrong, and happily so—their next game was *Final Fantasy*, a console role-playing game for the FamiCom. Created by Hironobu Sakaguchi, the game proved successful enough that Square sought a distribution deal with Nintendo for the North American market.

Fifteen games later, and 40 million copies sold so far, the *Final Fantasy* series is the king of the console RPG. Games from the *Final Fantasy* series have appeared on nearly every platform since the NES (despite a feud between Nintendo and Square that saw no *Final Fantasy* games on the N64). Although most games in the series are not sequels as such, the complex stories, graphic quality, and superb art direction clearly define games with the *Final Fantasy* name. The *Final Fantasy* series is so popular that a computer-animated motion picture was released in 2001, called *Final Fantasy: The Spirits Within*. In 2004, *Final Fantasy: Advent Children*—a computer animated movie like *The Spirits Within*—was produced as a sequel to the most popular game in the series, *Final Fantasy VII*.

Final Fantasy is not the only popular series from Square; the series *Dragon Quest* (known as *Dragon Warrior* in the United States) is incredibly popular in Japan, with each installment setting sales records over the previous ones. The *Kingdom Hearts* series, featuring a mix of Square and Disney characters, has also proven very popular.

Cyan and *Myst*

Working from their studios in Spokane, Washington, the brothers Robyn and Rand Miller created one of the most popular games of the 1990s. The Millers had made a couple of modestly successful games when Japanese company Sunsoft approached them to create a game for adults. Anticipating a CD-ROM add-on for the N64 (that was never released in the United States), Sunsoft was only interested in the console rights. The Miller's budgeted $400,000 and paid for the overages themselves. Starting work in 1991, the game *Myst* was created on Macintosh computers as a very large *HyperCard* stack, with each card being a 3D-rendered scene of atmospheric, ethereal beauty. The scenes were punctuated with short live-action video clips that helped move the story along. The user clicked through each screen, navigating the world and solving puzzles that led to unraveling the mystery of the island.

Released in 1993 on the Macintosh and then on the PC quickly thereafter, *Myst* became a critical darling and the kind of game that everyone had to own in the beginning of the CD-ROM age. The immense success of *Myst* led to the sequels *Riven*, *Myst III: Exile*, *Uru: Ages Beyond Myst*, and *Myst IV: Revelation* as well as remakes, three books, and a host of clones attempting to capture the essence of the groundbreaking adventure-puzzle game.

Pokémon

When avid insect hunter Satoshi Tajiri earned the nickname Dr. Bug from his friends as a boy, little did he know that he would create one of the most lucrative video game franchises ever. Satoshi would search the ponds and fields near his home in a suburb of Tokyo for any insects he could find, classifying them as he caught them. Sometimes he would trade them with friends, and they would let them fight. As a teen, he went to technical school to become an electrician at his father's request, but haunted the local arcades in his spare time. In 1982, he formed a magazine called *Game Freak* with his friends. In 1991, Satoshi bought a Game Boy and, seeing a Link Cable, imagined insects crawling along them between the Game Boys. The idea for *Pokémon* was born. Striking a creation deal for initial funding from the studio Creatures, and then bringing his idea to Nintendo, Tajiri worked for the next six years to create his game.

Originally called *Pocket Monsters* (*Pokketo Monsuta* in Japanese), the name was shortened to *Pokémon* when it was discovered that there already existed a Pocket Monsters toy in the United States. *Pokémon Red* and *Green* were released in 1996 in Japan and localized as *Pokémon Red* and *Blue* for the North American release. In the game, the player sets about collecting the mythical monsters and having them battle each other. Each version (*Red* and *Blue*) features different subsets of the entire collection of *Pokémon* monsters. This aspect has added to the addictiveness of the games—indeed, the first motto for *Pokémon* was "Gotta catch 'em all!" Since its debut, each version of *Pokémon* has broken the sales records set by the previous versions. The game has become hugely popular, and has branched out into several other forms of media, including comic books, cartoons, anime, movies, manga, and collectible card games.

Harmonix: *Guitar Hero* and *Rock Band*

One of the most explosive genres of recent years has been the rhythm game, and more specifically the rhythm games created by Cambridge, Massachusetts' developer Harmonix Music Systems. Scoring early critical (thought not financial) successes with music-based games *FreQuency* and *Amplitude*, Harmonix tapped gold in 2005 with the release of *Guitar Hero*. *Guitar Hero* combined gameplay elements from *FreQuency* and *Amplitude,* as well as some inspiration from one-time collaborator (on 2003's *Karaoke Revolution*) Konami's *GuitarFreaks*. *Guitar Hero* was a music-based rhythm game featuring popular songs "played" on a special guitar-shaped controller (based on a Gibson SG and developed in conjunction with publisher RedOctane) utilizing five "fret buttons" and a "strum bar." The guitar is also tilt-sensitive, which the player can use to trigger "star power," a bonus multiplier that adds an element of showmanship and replayability. The idea of playing guitar along with your favorite songs without requiring years of practice and lessons struck a chord (pun intended) with gamers. *Guitar Hero* was a critical and commercial success and spawned two quick sequels *Guitar Hero II* and *Guitar Hero Encore: Rocks The 80s*. MTV Networks acquired Harmonix in September 2006 for $175 million and after the releases of *Rocks The 80s*, Harmonix's production on the *Guitar Hero* series ended.

Activision acquired RedOctane in June of 2006 for $99.9 million in cash and stock, and with it the *Guitar Hero* franchise. Development shifted to Activision-owned Neversoft (which had been very succesful with the *Tony Hawk* skateboarding franchise) who began work on *Guitar Hero III: Legends of Rock* rebuilding the engine from the ground up.

Harmonix may not have been steering the *Guitar Hero* franchise anymore, but they weren't done with music-based games and custom controllers by a long shot. In *2001: A Space Odyssey*, the arrival of a large black monolith from space sparked the next stage in evolution for early man. In November 2007, that evolutionary step for the rhythm game arrived in the form of a plastic drum set. Harmonix released *Rock Band*, which incorporated the guitar controller of *Guitar Hero* (although this time a Fender-branded Stratocaster lookalike), the microphone of games like *Karaoke Revolution* and *SingStar*, and a drum set based off existing electronic drum kits. The game re-creates the communal experience of being in a band, again without requiring years of practice or lessons (depending on skill level) to successfully play popular songs.

One could argue that the microphone brought the game into the mainstream, as someone can sing well independently of the game and still perform well in it, thus making it accessible, whereas using the guitar controller well results only in being able to play games well that use a guitar controller. The microphone, however, carries the same social stigmas and rewards as a real microphone does: perform well and everyone hears you, perform poorly and *everyone* hears you (and everyone has a well-formed opinion before playing the game about whether they can sing or not). The drumset is a different story because it blurs the line between game controller and its analagous real-life counterpart by effectively teaching you skills in one that are necessary for mastery of the other, and it does this while not attaching a social stigma for poor performance (after all, it's only a game).

Rock Band, and its eventual sequel, *Rock Band 2*, has helped thrust rhythm games to the forefront of all gaming and into the mainstream spotlight. Also of note is that *Rock Band* features one of the strongest DLC (Downloadable Content) components of any video game and offers multiple new songs (playable in both *Rock Band* and *Rock Band 2*) for sale each week through the online service of whichever system you play on.

Spurred by the success of *Rock Band,* as well as their own need to evolve their franchise, Activision and Neversoft released *Guitar Hero World Tour* in October 2008, which incorporated a similar drumset and microphone, and it features analogous gameplay to *Rock Band* (with some subtle differences). Like Harmonix's franchise, *Guitar Hero World Tour* features DLC song offerings each week. Unlike *Rock Band*, *Guitar Hero World Tour* features a "Music Studio" that enables players to create their own tracks (without vocals) and share them online. Chart positions and sales figures will vary, but the combined numbers for Harmonix's current and past franchises are impressive with many millions of games sold and many millions of songs downloaded, representing more than $2 billion in sales thus far—a number sure to become quickly out of date as sequels with new capabilities and songs are released.

The Rise and Fall of the Video Game Mascot

Shortly after the dawn of video game history came the mascots. Pac-Man and Frogger were popular, but the first real breakout character was Mario. Starring as "Jumpman" in the arcade game *Donkey Kong*, Mario soon starred in titles of his own. *Super Mario Bros.*, which came as a pack-in with the NES, rocketed Mario to the heights of popularity—the Italian plumber even became more well known to kids of the era than Mickey Mouse.

Others mascots would follow, first being Sega's Sonic the Hedgehog. Conceived as competition for Mario, Sonic became the flagship character for Sega. Soon after its release, *Sonic the Hedgehog* replaced *Altered Beast* as the Sega Genesis pack-in title. Sonic was the first of the anthropomorphic animal characters, such as Crash Bandicoot, Spyro the dragon, and Blinx.

As Mario was to Nintendo, and Sonic was to Sega, Crash Bandicoot became the original mascot for the Sony PlayStation. Featured in a variety of games and humorous commercials, Crash was never quite as popular as his competing console hawkers were. In recent years, long since making the leap from the PlayStation (Vivendi Universal currently owns the rights to the character), Crash has been seen on Nintendo's systems and Microsoft's Xbox.

Another mascot of mythic proportions (no pun intended) is Lara Croft, the braided heroine of the *Tomb Raider* games. She has appeared in more than a dozen *Tomb Raider* games covering the various platforms and PC. She is a strong female character that nevertheless comes under a lot of criticism for her overtly sexualized persona. Despite the criticism, she has become immensely popular, and has had two live-action movies (*Tomb Raider* and *Tomb Raider: Cradle of Life*) that chronicle her adventures, as well as books and comic books.

Other mascots have become popular to varying degrees over the years. Nintendo has the lion's share with Samus Aran, star of the *Metroid* series (and one of the few nonsexualized females in video games); Link, the yellow-haired hero of Hyrule in the *Zelda* series; Kirby, the pink ball-shaped creature who stars in his own cartoon now; Donkey Kong, the original arcade ape; and Pikachu, the electrifying yellow hero of the *Pokémon* games, movies, and cartoon series. Sony has had its own sets of heroes with *Jak and Daxter*, Solid Snake from *Metal Gear Solid*, *Ratchet and Clank*, Kratos from *God of War*, and Spyro the dragon. It is worth noting that many of Sony's once-exclusive mascots have since appeared on other systems. Microsoft has just a few mascots for its relatively recent systems, including the Master Chief from the *Halo* series and Marcus Fenix and Dominic "Dom" Santiago from the *Gears of War* series.

Many consider the heyday of the mascots to be over. There are several reasons why mascots may not be as popular as they once were. One is the possible oversaturation of existing characters. At the apex of a character's popularity, there seems to be no upper limit to how much attention a mascot can garner and sustain, but when a character is not at its apex, this same attention level can appear to be far too much. In the

1980s, after the initial introduction of characters such as Sonic and Mario, everyone jumped on board the mascot bandwagon. Everything from soft drink to pizza chain mascots made it into video games, creating an influx of characters without much depth to them that the public didn't get behind (cheapening all mascots as a result).

Another possibility is the advancing age of the audience: the audience that first fell in love with Mario's adventures in 1985 has had roughly two decades to grow up and move on to other concerns. An audience not present for a character's defining games may not view the character in the same light as those present for the character's introduction (as in the case of *Tomb Raider* where Angelina Jolie's movie representation of Lara Croft may far overshadow the games that made the character popular in the mid-1990s).

Marketing can also be a factor in the popularity of the mascots. If a particular console is skewed toward an older audience and doesn't possess any strong mascots, it benefits them to characterize the mascots and other consoles using them as "kiddy." Calling a system "kiddy" is a disingenuous way of denigrating a particular system, as it has no technological basis in the capability of the console.

Perhaps the largest factor in the perceived decrease in popularity of the video game mascot is the increased realism and immersion level in video games. Most mascots have appeared as brightly colored third-person characters manipulated within the games, while the trend is toward games where the player is the main character in the game, seeing through the eyes of an on-screen persona (as in most first-person shooters) or treating the character as a sort of alter ego (*Grand Theft Auto*). As technology advances, the opportunities for immersion increase as the game playing field becomes far more realistic. The president of Nintendo, Satoru Iwata, underlined the problem at his E3 2003 speech when he pledged that Mario would never start shooting hookers. While on the one hand, this promise takes a stand in addressing the trend of increasing violence in games, it also points to the idea that the video game mascot might just be of a different era—an era now gone.

The Studios

In the games industry, hits, innovation, and great design do not necessarily mean that a company will experience long-term success. Indeed, the history of video games is littered with once-successful companies that no longer exist. It takes a particular combination of success and business savvy to last. Here is a necessarily brief overview of some of the many notable studios and publishers.

Activision and Infocom

Formed by four former Atari programmers and Jim Levy, a former music industry executive, Activision was the first third-party game developer. David Crane, Larry Kaplan, Bob Whitehead, and Alan Miller were among Atari's best and brightest, but

they'd become disillusioned with practices at Atari. The new company created some of the best-known Atari 2600 games ever, including such hits as Bob Whitehead's *Chopper Command*, Carol Shaw's *River Raid*, and David Crane's *Pitfall!* (Activision prided itself on giving its designers credit, featuring them in much of its marketing—a practice that Atari had eschewed.) A lawsuit from Atari resulted in Activision and all other third-party companies agreeing to pay royalties on each game sold, but Activision had become so successful that this hardly damaged its bottom line.

After Activision's initial success, they merged with popular text adventure creator Infocom. Infocom had created the beloved *Zork* franchise, as well as other popular text-based games, but had fallen on difficult financial times. The merger soon created issues for the combined companies, however, when new CEO Bruce Davis took over. Davis had been against the merger and made changes that eventually led to the closing of Infocom's studios in Massachusetts, losing most of the Infocom staff in the process.

A name change to Mediagenic, a change in focus to business software, an eventual bankruptcy, a merger, and a name change back to Activision lead us to the early 2000s, where Activision continued to make and distribute popular PC and console game titles like *Doom 3*, *Tony Hawk's Underground*, and *Spider-Man.*

The mid to late 2000s were a period of tremendous consolidation and growth in the industry in general and for Activision in particular. Acquisitions for Activision included studios like Treyarch, Infinity Ward, Vicarious Visions, and more, culminating (at least for now) in the 2008 merger with Vivendi to become Activision Blizzard. In 2007, Activision finally beat EA to become the number one third-party publisher in 2007 (based in large part on the strength of the *Guitar Hero* franchise). A continued series of strong franchises (*Guitar Hero*, *Call of Duty*, and now *World of Warcraft*) and smart acquisitions make Activision one of the top companies in the business today.

Electronic Arts

Originally starting life as Amazin' Software, Electronic Arts (EA) was founded in 1982 by former director of product marketing for Apple Computer, Trip Hawkins. Acquiring $2,000,000 in venture capital and putting up $200,000 of his own money, Hawkins was able to bring to life ideas he'd had for seven years. The business plan developed by Trip was visionary and had three key elements: first, that the creative talent at the company would be treated like artists, involved in the marketing, and generally revered more than at other companies in the industry; second, that they would develop proprietary tools and technology that would enable them to quickly develop their titles cross-platform; and third, that they would handle the distribution to stores. Hawkins brought many of his former colleagues at Apple onboard and the company was off and running. Nobody liked the name Amazin' Software, though, and at an early company retreat—and inspired by Hollywood's United Artists—the company was renamed to Electronic Arts.

In May 1983, Electronic Arts released its first five titles: *Hard Hat Mack* for the Atari 800 and Apple II; *Archon* for the Atari 800; *Pinball Construction Set* for the Atari 800 and Apple II; *Worms* for the Atari 800; and *M.U.L.E.* for the Atari 800. The last four of these are seminal titles in the history of video games. *Archon* was an innovative chess-like game with action elements to it. *Pinball Construction Set* allowed you to create your own pinball playing fields. *Worms*, the first entry in the venerable series, was a strategic war game with worms as your troops. *M.U.L.E.* was an economic simulation set on a space colony that was masquerading as a game.

While EA wouldn't develop its own internal games until 1988's *Skate or Die!*, they had a knack for finding external development houses with great ideas. Some other early classic EA titles include *One on One: Dr. J vs. Larry Byrd* (1983), *The Seven Cities of Gold* (1984), *The Bard's Tale* (1984), *Mail Order Monsters* (1985), Bullfrog's *Populous* (1989), and Maxis' *SimCity* (1991). True to Trip's business plan, these titles were developed for multiple computer platforms and eventually consoles.

Trip Hawkins left EA in 1991 to help found the 3DO company, a console and game maker that eventually filed for bankruptcy in 2003. Larry Probst became the next CEO of EA, guiding it to reach profits of $1 billion in 1994—the first for a video game publisher. The outspoken Probst has been criticized for his reluctance to create games such as Take Two Interactive's ultraviolent (but ultrasuccessful) *Grand Theft Auto* Series. Despite that, in 2005 EA is expected to reach $3 billion in profit.

Under Probst's leadership, EA has found a knack for acquiring external development houses that rivals Microsoft's. In 1992, they acquired Richard Garriot's Origin Studios, creators of the *Ultima* series. In 1995, they added Peter Molyneux's Bullfrog (makers of *Populous*, *Dungeon Keeper*, and *Magic Carpet*) to their list of studios. In 1997, Maxis (all things *Sims*) joined their stable. Finally, in 1998, Westwood Studios (creators of the *Command and Conquer* series) came on board. Consolidating their external studios, EA now publishes some of the most famous franchises in games through their four brands (EA Games, EA Sports, EA Casual Entertainment, and *The Sims*).

The economic crisis of 2008 has hit the gaming industry hard, despite some record successes in the same time period. EA is currently one of the partial casualties of this economic downturn and has announced pending layoffs and studio closures. The full extent of this crisis and the inevitable rebound are unknown as of this writing, but EA has many strong franchises in their arsenal that will certainly weather the storm. Some of these franchises include *James Bond 007*, *The Lord of the Rings*, *Madden NFL*, *Tiger Woods Golf*, *Need for Speed*, *Medal of Honor*, *Battlefield*, *Harry Potter*, *The Sims*, *Spore*, and *Rock Band*.

Interplay

Formed in 1983, Interplay Productions created a few odds-and-ends game products and ports until striking it big with *The Bard's Tale* in 1985. *The Bard's Tale* was a dungeon crawl similar to the *Wizardry* series, but featured innovative quasi-3D graphics.

Two sequels followed in the immensely popular series, further expanding on adventures in the town of Skara Brae.

In 1987, Interplay created one of the finest entries ever into the CRPG (Computer Role-Playing Game) genre using the *Bard's Tale* engine. *Wasteland* was set in a post-apocalyptic desert world, the universe created by the tabletop role-playing game *Mercenaries, Spies, and Private Eyes*. The innovative game allowed players to solve problems in the game based on their variety of skills, not just brute force. *Wasteland* has become a steady staple of "best of" lists since its release.

Founder Brian Fargo realized around that time that they could make more money by publishing their own games. The company released *William Gibson's Neuromancer* and *Battle Chess* on their own label in 1988. In 1990, amidst financial troubles, they released *Castles*, which did well enough that they could release their next hit— *Star Trek: 25th Anniversary*. Amazingly, *25th Anniversary* broke the curse of licensed *Star Trek* games, and became very successful, eventually being rereleased in a CD-ROM version with voiceovers recorded by the original actors.

In 1997, they released *Fallout*, the spiritual successor to *Wasteland*. *Fallout* showcased a retro-futuristic style that was a marvel of art direction. Coupled with a combination of real-time and turn-based gameplay and a strong dash of humor, *Fallout* was a classic CRPG that, in turn, spawned its own sequel (*Fallout 2*). Like *Wasteland* before it, *Fallout* has become a steady fixture in lists of the best games of all time.

One of Interplay's most important and lucrative partnerships was with a Canadian company called BioWare. Formed by three medical doctors, BioWare has specialized in creating superb CRPGs, including the *Baldur's Gate* series, *Neverwinter Nights*, and *Star Wars: Knights of the Old Republic*—the latter two published by Infogrames and LucasArts, respectively. The *Baldur's Gate* series, in particular, spawned several immensely popular games, including *Baldur's Gate: Tales of the Sword Coast*, *Baldur's Gate II: Shadows of Amn*, and *Baldur's Gate II: Throne of Baal*.

In the late 1990s, despite the success of *Baldur's Gate*, Interplay's fortunes began to wane. After becoming a public company in 1998, Interplay then announced losses covering several years. The company divested itself of its publisher duties and signed with Vivendi Universal. Soon after, Titus Interactive gained control of the company, prompting the departure of founder Fargo. The company was de-listed from the NASDAQ, threatened with eviction from their offices, and, for a brief time, was shut down following these and other financial troubles.

Interplay has seen something of a resurgence since that time. Thanks to the sale of the *Fallout* IP to Bethesda Softworks (who subsequently released the critically acclaimed *Fallout 3* for PC, PS3, and Xbox 360) and sale of a controlling interest of stock to a Luxembourg company, Interplay has been reborn. Their current plans include releasing some of their Sega and N64 games on the Wii Virtual Console, as well as releasing a new *Earthworm Jim* game with series creator Doug TenNapel serving as creative consultant. In addition, they are planning sequels to *Dark Alliance*, *Descent*, *MDK*, and a *Fallout* MMO.

LucasArts

LucasArts started in 1982 as the Games Group, an offshoot of Lucasfilm Ltd. Using $1 million in seed money from Atari, they set to work on creating two games, *Ballblazer* and *Rescue on Fractalus*. The games were completed, but before they could be released, they were pirated. In the meantime, Jack Tramiel had taken over at Atari, and the Games Group didn't like the terms he was offering. In 1984, Epyx published the games, and Lucasfilm Games (as they were now known) had its unique and innovative product on the shelves.

While their early games were creative and well made, it wasn't until 1987, with the release of *Maniac Mansion*, that LucasArts began to define itself. *Maniac Mansion* was essentially the first point-and-click adventure game. All the game verbs were located on the screen, so interaction was accomplished by clicking on combinations of on-screen items and words—no typing was needed. The engine used to create the game was called SCUMM (Script Creation Utility for *Maniac Mansion*), and typified the sense of humor that went into the games themselves. SCUMM was used for the next 10 years in every adventure game made by LucasArts until *The Curse of Monkey Island* was produced in 1997. With SCUMM, LucasArts built a powerful reputation as a maker of witty and original adventure games.

LucasArts wasn't known only for its adventure games, though. In the early years, they had produced a few strategic simulations, and, after working on adventure game ports, programmers Larry Holland and Noah Falstein were anxious to return to their roots. In 1988, they released *Battlehawks 1942*, the first in a series of World War II air combat games. They followed up with *Their Finest Hour: The Battle of Britain* and then the classic *Secret Weapons of the Luftwaffe*.

In 1992, rights to produce games set in the *Star Wars* universe reverted to LucasArts from Brøderbund, and Holland seized the opportunity to apply his combat simulation experience to a new genre. *Star Wars X-Wing* was the result of this first effort—a space combat game that skillfully captured the feel of the beloved movies and put you in the pilot's seat of an X-Wing fighter. *Star Wars TIE Fighter* followed, which told the story from the Empire's point of view, providing shades of gray to the evil Empire. The next game in the series, *Star Wars X-Wing VS. TIE Fighter*, brought the series to the Internet in an ambitious multiplayer experience—complete with death match and cooperative missions. The final game in the venerable series was *Star Wars X-Wing Alliance*, which allowed the player to pilot the Millennium Falcon for the first time.

LucasArts has had other notable games in other genres. They brought The Force to the first-person shooter with *Dark Forces*, released in 1995. Sequels to *Dark Forces* followed in the form of the *Jedi Knight* series and saw the lead character, Kyle Katarn, go from mercenary to Jedi Knight to Jedi Master, adding light sabers and force powers to his arsenal along the way. The 1998 *Grim Fandango* saw them revisiting familiar territory with an amazing 3D adventure game featuring skeletal Manny Calavera on his journey through the land of the dead. The popularity of the action game *Star*

Wars Rebel Assault (which was released only on CD-ROM) is credited with helping bring CD-ROM drives to the masses. More recently, LucasArts has had success with several different franchises within the *Star Wars* universe including the hit RPG *Knights of the Old Republic* and its sequel (created by BioWare and Obsidian Entertainment respectively), the MMORPG *Star Wars Galaxies*, the real-time strategy game *Star Wars: Empire at War*, *Lego Star Wars*, and *Star Wars: The Force Unleashed*. LucasArts also has several non–*Star Wars* properties of varying degrees of popularity, including Indiana Jones (with the hit *Lego Indiana Jones*), *Mercenaries*, *Fracture,* and *Thrillville*. Much anticipated as of this writing is an upcoming *Star Wars* game utilizing the Wii Remote in lightsaber duels.

Blizzard

Starting life in 1991 as Silicon & Synapse, the company later to be known as Blizzard Entertainment was founded by Mike Morhaime, Allen Adham, and Frank Pearce. Using ties with Brian Fargo at Interplay, they spent their first three years creating console games like *The Lost Vikings* and *Rock & Roll Racing*. They were acquired in 1994 by Davidson & Associates and soon thereafter released the game *Warcraft*—their first big hit. *Warcraft* was one of the first real-time strategy games (along with Westwood's *Command & Conquer*), and helped to define the genre.

The development house Condor had been shopping around a game idea called *Diablo*—and finding no takers—when they talked to their old friends at Blizzard. Blizzard liked the idea, and contracted Condor to make it happen. While Condor was working on *Diablo*, Blizzard was applying the finishing touches on the sequel to their biggest success. *Warcraft II* was released in 1995, and was a blockbuster hit. In 1996, they purchased Condor and renamed it Blizzard North. Blizzard has had an unprecedented number of blockbuster hits since then, each game outselling the last; their latest game, the MMORPG *World of Warcraft* and its two expansion packs, has become the fastest selling PC game in history and as of December 2008 has 11.5 million subscribers, easily making it the most popular MMORPG ever.

id Software

id Software formed on February 1, 1991, when the game development group at Softdisk (a monthly software newsletter) quit nearly en masse.

John Carmack, Adrian Carmack (no relation), John Romero, and Tom Hall had created a shareware game called *Commander Keen*. *Keen* was distributed by Apogee, who had figured out that splitting a game into three parts and charging for the second and third parts was a way to make shareware pay off well. Seeing the success of *Keen*, Scott Miller of Apogee encouraged the id team to create a 3D game. In December 1991, they completed some final obligations to Softdisk and began work on a 3D game. The game was *Wolfenstein 3D*, a first-person shooter based on *Castle Wolfenstein*. Within the first month after release, Miller paid the id team $100,000 in royalties on the smash hit.

Inspired by the movies *Evil Dead* and *Aliens*, id parted ways with Apogee and created the phenomenon *DOOM*. While not the first first-person shooter (Carmack's contributions to Softdisk earning that place in history), *DOOM* became the ultimate expression of it. Featuring a state-of-the-art graphics engine, *DOOM* was a compelling combination of action, puzzle-solving, art, multiplayer LAN play, and inspired level design. Like their previous products, *DOOM* was distributed using the shareware model that had helped make *Commander Keen* and *Wolfenstein 3D* lucrative.

Each successive product since *DOOM* has been a showcase of genius programming and 3D engine design, with id making massive profits licensing their engines to other game companies. On the heels of *DOOM* followed success with *DOOM II*, *Quake*, *Quake II*, *Quake III: Arena*, and their latest, *DOOM III*, a dark, atmospheric return to the demon- and zombie-filled world of their first giant success. Upcoming titles include *Rage* and *Doom 4*.

A Brief Overview of Genres

Most modern video games can be assigned to a particular genre, or classified as a hybrid of two or more genres. These genres have come about over the years, often as a result of trial-and-error, but more often as an evolution. The following is a description of some important genres and the games that either introduced or popularized them.

Adventure

In the adventure game genre, there have been two important subgenres: the text-based adventure and the graphical adventure. For text-based breakouts, one need look no further than *Zork* by Infocom. On the graphical adventure side, one of the series that defined the genre was the *King's Quest* series from Roberta Williams at Sierra.

Action

The action game is the superset of many other genres. First-person shooters, action-adventure, combat simulations, fighting games, even platform games are all parts of the action genre. Games in the action genre are typified by fast-paced combat and movement. Some of the earliest examples of video games such as *Spacewar*, *Pong*, and *Space Invaders* defined the genre and were also its earliest successes.

Action-Adventure

Action-adventure games are similar to adventure games, but incorporate action elements. Nintendo's *The Legend of Zelda* was the first breakout hit of the genre, but there have been many more since. Recent games like *Jak 3*, *Metroid Prime 3*, and *Resident Evil 5* continue the tradition of action with strong puzzle solving.

Platformer

The original platform games involved the character running and jumping in a side-scrolling playing field. While the definition has been expanded now to include 3D playing fields, the genre is still fairly true to its roots. Some of the most famous platformers have been *Super Mario Bros.*, *Sonic the Hedgehog*, *Pitfall!*, and *Super Mario 64*.

Fighting

In fighting games, the player fights other players or the computer with martial arts or swordplay. These games originated in the arcades, where players could signify their intent to challenge one another by placing quarters on the top of the cabinet. *Double Dragon* is one of the most famous games from the genre, allowing players to fight side by side through a scrolling landscape. *Street Fighter* and *Mortal Kombat* are two of the most famous of the 2D fighting games in which players choose characters and fight against each other (called a *versus fighter*), while *Virtua Fighter*, *Soul Calibur*, and *Tekken* are the leading examples of the 3D version of this subgenre.

First-Person Shooter

The first-person shooter is an action game that places the player "behind the eyes" of the game character. In the games, the player is able to wield a variety of weapons and dispatches enemies by shooting them. The genre took hold with id Software's *Wolfenstein 3D* and *Doom*.

Real-Time Strategy (RTS)

In a typical RTS, the goal is for the player to collect resources, build an army, and control his units to attack the enemy. The action in these games is fairly fast-paced and because of the continuous play, strategic decisions must be made quickly. While 1984's *The Ancient Art of War* and 1989's *Herzog Zwei* were early examples of the genre, the games that popularized it were Westwood's *Dune 2* and *Command and Conquer* and Blizzard's *Warcraft*.

Turn-Based Strategy

These games are similar to real-time strategy games (indeed, they were the precursors to them), but the players take turns in which they make their moves. For example, most board games (like Chess and Checkers) are turn based. In the era of the RTS, turn-based games are less frequently made, but there are some notable games in the genre, namely *Civilization*, *X-COM*, *Master of Orion*, and *Jagged Alliance*.

Role-Playing Game (RPG)

The video game version of pen and paper games like *Dungeons & Dragons* differs from its tabletop counterpart mostly in its ability to create a world that doesn't require imagination. Most differentiations from the formula are hybrids with other genres. Some of the most famous RPGs to grace computer and TV screens are the *Final Fantasy* series, the *Baldur's Gate* series, and *Wasteland*.

Massively Multiplayer Online Role-Playing Game (MMORPG)

The MMORPG or MMO is a role-playing game set in a persistent virtual world populated by thousands of players simultaneously connected over the Internet. The MMO was predated by text-based games called Multi-User Dungeons/Dimensions (MUDs), but in modern times it is largely graphical. In the games, the player is represented by an on-screen character called an *avatar*. The first modern MMO was *Meridian 59* in 1996. The first popular implementation, however, was *Ultima Online* in 1997. *World of Warcraft* is currently the king of the genre with more than 11 million subscribers.

Stealth

Stealth games (sometimes called *sneakers*) are characterized by their focus on subterfuge and their planned-out, deliberate gameplay. They are generally similar to first-person or third-person shooters, but are less action-oriented and more methodical in nature. The first stealth game was the original *Metal Gear* in 1987, but other notable stealth games include the *Thief* series, the *Metal Gear* series, and the *Splinter Cell* series.

Survival Horror

Survival horror is a subgenre of action-adventure and first-person shooter games. Typically, they involve exploring abandoned buildings or towns where various monsters and undead creatures lurk. The survival elements are stressed by never giving the player quite enough bullets or health, thus increasing the tension. The horror aspect defines the theme and pacing, commonly directing the player to explore quiet, deserted, bloodstained hallways until a monster comes crashing through a window, or a seemingly lifeless corpse begins to stir. Players are often startled and can become visibly shaken from the experience, much like a good horror movie. While 1992's *Alone in the Dark* is recognized as the first in the genre, *Resident Evil* in 1996 popularized the "survival horror" term and set the bar for subsequent games.

Simulation

Simulation games are based on the simulation of a system. This system can be anything from the workings and economy of the railroads (such as in *Railroad Tycoon*) to a combat scenario where the player controls large movements of troops, or even single fighter craft. *SimCity* is one of the breakout simulation games, allowing you to micro-manage a city. *Wing Commander* and *X-Wing* are two of the defining space combat

simulation games. *Microsoft Flight Simulator* is one of the most famous airplane simulation games. In recent years, *The Sims* is one of the more popular games in the genre, with its complex simulation of human life and social interactions.

Racing

Racing games involve competing in a race in vehicles ranging from racecars to motorcycles to go-karts. This genre is a little different from others in that the games essentially try to re-create as best they can a real-world activity. The first breakout racing game was *Pole Position* from Atari.

Sports

The sports game genre covers a myriad of games that simulate the sporting experience. As with racing games, sports games are mostly an attempt to re-create the complex interactions in a real sport. Some of the breakout series in the genre have been *John Madden Football* and *Tiger Woods Golf*.

Rhythm

Rhythm games gauge a player's success based on his ability to trigger the controls in time to the beat of music. Some games, such as Konami's *Dance Dance Revolution (DDR)*, require the player to step on floor pads in time to music, while Nintendo's *Donkey Konga* for the Nintendo GameCube comes with a specialized bongo drum controller—although not all rhythm games require specialized controllers. For example, *PaRappa the Rapper* is regarded as the first significant rhythm game, appearing on the PlayStation in 1996, and it only required the standard controller. Currently, the *Guitar Hero* and *Rock Band* franchises are responsible for the tremendous popularity of this type of game.

Puzzle

Puzzle games combine elements of pattern matching, logic, strategy, and luck—often with a time element. *Tetris* is easily the most popular puzzle game ever, and serves as a fine example of the genre with its frenetic pattern-matching action.

Mini-Games

Mini-games are typically short, simple games that exist within a larger traditional game. They are sometimes used as a reward for completing a challenge or unlocked by discovering a secret. Alternately, the larger game can be a thin veil for a collection of mini-games, as in the *Mario Party* series or the *Wario Ware* series. The *Wario Ware* series is of special note since each title contains more than 100 games, with each lasting only several seconds. Many games on the Internet used for advertising purposes could also be described as mini-games.

Traditional

Traditional games include computerized versions of card games and board games. The first traditional game implemented on a computer screen was *Noughts and Crosses* (tic-tac-toe) by A. S. Douglas at the University of Cambridge in 1952. Throughout the years, chess has long been a staple of traditional video games, with *Chessmaster* being the most recognized series. In 1988, Interplay developed *Battle Chess*, which was just normal chess, but when each piece took another, there was a unique (and often humorous) animation of the "battle." Sierra's *Hoyle* series is one of the most dedicated efforts to bring traditional games to a computer format, with its faithful translations of card, board, casino, word, table, and puzzle games.

Educational

Educational games are designed to teach grade-school concepts to children and young adults in an entertaining manner. The first notable educational game was *Oregon Trail*, originally designed in 1971 for teletype machines at Carleton College, but made popular in the 1980s and 1990s by a version running on Apple computers in public schools. Other notable games in this genre include the *Carmen Sandiego* series and *Mavis Beacon Teaches Typing*.

Serious

The serious game genre has emerged in the past couple of years as a cheaper and more entertaining way of teaching real-world events or processes to adults. These games are usually privately funded for specific uses, with the U.S. government and medical professionals being the largest users. For example, game developers can develop training simulators relatively cheaply, while infusing the simulation with entertainment value. The fun value is important so that users are motivated to replay the game often and thus become better trained. The Game Developers Conference has recognized the strong interest in serious games and in 2004 added a two-day Serious Games Summit as part of its annual event, focusing on "the intersection of games, learning, policy, and management." [GDC]

Summary

While the history of video games tells a story of men and women driven by innovation and creativity, it also tells the story of bad business moves and failure to capitalize on opportunities. Innovation doesn't necessarily lead to success, and success doesn't necessarily lead to longevity. True success and longevity in the video game world often rely on a combination of creativity, business acumen, and luck. Just as in any emerging media, there is an evolution that takes place, as genres are defined and capabilities are explored. The consoles and computers of the year 2000 enable ways of game playing that weren't possible in the early 1980s, while some classic games still remain
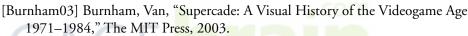
classic games despite featuring outdated technology. Ultimately, as advanced as video games have become and as much money as the industry generates, the medium must still be considered in its infancy. This does not invalidate the lessons learned from the designers and companies that have made a success in it, but serves to inform the future.

Exercises

1. A graphical computer version of tic-tac-toe (*Noughts and Crosses*) was developed by A. S. Douglas at the University of Cambridge in 1952. Why do many historians not consider this the first video game? Research the game on the Internet and make an argument why it should be regarded as the first video game.
2. Why was Atari successful with the 2600 while Fairchild and RCA both bowed out of the console race early?
3. Do you believe that the video game mascot is in decline? If so, why? If not, why not?
4. Having read stories of companies that were both successful and unsuccessful, what are some of the elements that would lead to having a successful video game company and some pitfalls to watch out for?

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1.2 ∎ Games and Society

In This Chapter

Overview

Twenty years ago, the study of video games might have been greeted with scorn or derision. After all, who would have considered simplistic games like *Pong* and *Breakout* anything more than a novelty? At most, they were perceived as primitive extensions of board and card games. However, in the three plus decades since then, what was seen as a mildly diversionary collection of dots on a TV screen has become a cultural phenomenon of massive proportions and certainly one worth examining in greater detail.

Clearly, the enormous fiscal and cultural success of video and computer games is too long-lived to be a fluke or a fad. The presumption has to be that they fulfill some social or personal need, and that this fulfillment has enabled their enduring success. However, what is this social or personal need, and what power does it have? Are video games merely a reflection of culture and society, or do they exert undue influence on that culture and society? Surely, the answer is somewhere in between, but the answer to this question is critical in determining how societies reconcile their relationships with video games. Are they to be feared or embraced? What laws, if any, should regulate them? Are children or adults susceptible to violent content within video games?

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How do particular societies and cultures view games and react to their content, and how does that change when that game has been produced by a different culture or society?

Moreover, the classification of video games can be a tricky business. Clearly, they are intended to be entertainment, but what kind of entertainment? Are they an art form, like paintings or literature? Or are they an entertainment medium, like television or movies? Are they to be considered an activity or sport, like tennis or ping-pong, because of their capability to sharpen reflexes and improve hand-eye coordination? Or does the interactive nature of the gaming experience require a new classification? Whatever the classification, do video games constitute speech, and thus fall subject to the protections and laws governing speech? How should a society reconcile these very different portrayals of video games? While consumers, lawmakers, and judges hammer out these thorny issues, society keeps humming along, and the consumption and integration of video games into daily life continues, often creating or highlighting newer and thornier issues.

At the extreme of this absorption into daily life is the phenomenon of massively multiplayer online games (MMORPGs) such as *EverQuest* or *Lineage*. The nature of these games is such that they can be remarkably immersive and time consuming. Because of this, within these MMORPGs, video games and society combine to form a completely new environment with its own unique cultural flavor and its own set of societal rules. People will play, chat, cooperate, compete, and argue with other humans in a place that knows no borders or time zones. No study of games and society could be complete without the acknowledgment and study of how these societies form and operate, and the view that this "blank slate" provides into the inner workings of more traditional societies.

Why Do People Play Video Games?

An examination of this question could easily fill a book, and, in fact, UCLA psychology professor Patricia Marks Greenfield (among others) wrote a book in 1984 that addresses it [Green01]. Her approach was anthropological in nature because research into this emerging field was nearly nonexistent at the time. In *Mind and Media: The Effects of Television, Video Games, and Computers*, she concluded that video games are appealing to people, in part, because they provide real-time gameplay, goals, and stages. Additionally, they encourage communication by facilitating cooperation. Even this very brief summary of her work yields some important insights. As the games themselves have evolved, however, the concept of these fundamental appealing elements should evolve as well. Greenfield anticipated these potential changes by suggesting that every game will offer different things to different players in terms of their appeal. In this spirit, "real-time gameplay" will be expanded to "real-time interaction," and "facilitating cooperation" will be expanded to "facilitating community." These expanded elements and their varied implementations provide a basis for the rest of this chapter.
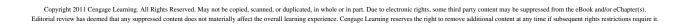
Audience and Demographics

At this point, it is useful to determine who in society is playing games and how this information is known. While video games are ostensibly about fun and entertainment, every published video game is, at its core, a business venture designed to make money. As such, it is targeted toward a particular audience or demographic. The demographics within a society can guide what kinds of games are financially feasible to produce, and timing, above all, is crucial. For example, in the late 1990s, several game development companies were created to capitalize on what was seen as a rapidly emerging preteen female market, despite evidence that only a small percentage of these individuals had previously sought out video games aimed at their age group and gender. Unfortunately for many of these companies, they could not grow the demographic at the time and were forced to close doors after conceding that there wasn't a viable market there. Fast-forward to late 2000s, and that audience is now there and buying games in droves for systems like the Nintendo DS and Wii.

Sometimes it is possible to create a new video game genre and thus capture a previously unknown or untapped demographic. In 1997, the game *Deer Hunter* showed that it was possible to make game players out of people who normally did not play games. This game was produced exclusively for Wal-Mart at its request. Wal-Mart understood the demographics of its customers and was confident that there would be demand for a hunting game that ran on lower-end computers. The game was developed in a mere three months and went on to sell several million copies and spawn a whole genre of hunting games. For a short time, the games industry was baffled and dumbfounded, but came to accept the new demographic.

In more recent times, the meteoric rise of the rhythm games (in the form of *Guitar Hero* and *Rock Band*) has resulted in an expanded demographic (while at the same time expanding what is meant by a video game). The accessories for those two games alone dominate aisles of consumer electronic stores. Finally, Nintendo's Wii has enjoyed amazing success in no small part due to an expanded demographic that includes the elderly, thanks to its innovative controller and a pack-in game (*Wii Sports*) that allows those with limited mobility to experience sports they can no longer experience in "real life." Sports games weren't enough to entice that audience previously, but a sports game with a motion-sensitive controller and analagous motions to the real sport provided an enticing combination and broadened the genre and subsequently the demographic.

Demographics can give you the broad strokes of who is out there buying and playing games. Of course, there will be exceptions (the soccer mom who plays nothing but first-person shooters), but, in general, demographics can show informative trends. For instance, a broad brushstroke view of gamers indicates that games with cute, cartoony images tend to be geared toward children. On the other hand, if a game featured violent gameplay or sexual innuendos in the context of cute, fuzzy creatures, there might be some demographic issues.

Interestingly, this exact situation occurred in 2001 with the Nintendo 64 game *Conker's Bad Fur Day*. The UK company that developed the game, Rare, originally designed a cute, harmless platform game centered on a bushy-tailed squirrel named Conker. An early version of the game was demonstrated at a trade event, but the press angrily derided the developer for making another happy-go-lucky children's game. As a result, the team at Rare took the criticism to heart and retooled the game to make it adult-oriented; however, they retained the main character and the cartoonish style. Using English wit, sexual innuendos, and a gratuitous amount of toilet humor, the final game spoofed such R-rated movies as *The Terminator*, *Saving Private Ryan*, *The Godfather*, *Reservoir Dogs*, and *The Matrix*. In one of the most demented gameplay moments, the player would direct Conker to drink from a beer keg so that he could then urinate on fire demons. While the game was applauded by critics for being extremely innovative and well done, the cartoony main character failed to appeal to an older demographic and sales were dismal. In the end, Nintendo also had to go to considerable effort to ensure that parents did not accidentally purchase the game for someone under 17. By an odd twist of fate, Nintendo later sold the development company Rare to Microsoft, which then remade the game as *Conker: Live and Reloaded* for the original Xbox (which had a considerably older demographic than the Nintendo 64).

Understanding what (beyond some very basic elements) will appeal and be desirable to particular demographics and societies can be tricky (indeed, fortunes are won and lost on such things). Demographics research is one tool that can shed light on how a society uses and interacts with games. While not being a crystal ball, it can provide answers to the question of who within society is currently playing games.

The Entertainment Software Association

Where can demographic data be found? The Entertainment Software Association, which is composed of many leading gaming industry companies and professionals, performs a yearly survey of representative U.S. households to determine gaming and purchasing habits [ESA08]. These numbers provide some insight into who is buying and playing video games.

ESA Statistics for the United States in 2008

- The average game player's age is 35 (up from 29 in 2003) [ESA04].
- The average game buyer's age is 40 (up from 36 in 2003).
- 40 percent of gamers are women, although individual consoles will skew those numbers.
- 44 percent of online game players are women (up from 40% in 2003).
- 65 percent of American households play video games.

While it's important to remember that these are generalities of a particular market (U.S.) during a particular year, it is remarkable that 65 percent of all American households play video games. Markets do fluctuate, and certainly, the statistics were very different five years before this survey (and very different five years before that), but just as certainly, video games have achieved great mainstream acceptance within society. Also of note is that while in the past video games have typically been targeted toward a male audience, clearly the most successful current games and systems target a healthy mix of genders and ages to truly reach the mass market. Massively multiplayer online games and rhythm games have been particularly adept at providing compelling entertainment for both males and females, and the Wii has expanded the demographic to embrace an older audience.

ESRB

The Entertainment Software Rating Board [ESRB04], a self-regulatory body created in 1994 for the interactive software industry by the ESA, provides ratings for video games much like the Motion Picture Association of America provides ratings for movies. Recently, they've significantly expanded their ratings system, so in addition to a rating geared toward ages (EC for Early Childhood, E for Everyone, E10+ for Everyone 10 and older, T for Teen, M for Mature, and AO for Adults Only), they've provided Content Descriptors to describe particular kinds of activity in games, as well as more specifics on the kinds of violence a game may contain (e.g., Cartoon Violence, Intense Violence, Violence). An ESRB rating, while technically voluntary, is always required by console manufacturers, the majority of game publishers, and most large retail stores within the United States.

More 2007 ESRB Statistics

- 57 percent of all games rated received an E for Everyone rating.
- 28 percent of all games rated received a T for Teen rating.
- 15 percent of all games rated received an M for Mature rating.
- In 2007, 80 percent of the top 20 best-selling console games were rated E or T, while 75 percent of the top 20 best-selling computer games were rated either E or T.

So, how does one interpret the ESRB and ESA data? Does the fact that 57 percent of all games were rated E mean that these are necessarily the most popular games, or just the most frequently made? The *Grand Theft Auto* series of games is a huge success—despite its M for Mature rating. Of course, looking at the average age of game buyers from the ESA data (40 years old) versus the average age of game players (35 years old), one might reasonably conclude that parents make up a significant portion of the game-buying public. Consequently, of course, games are going to be made to appeal to everyone from the young to the old.

Societal Reaction to Games

Societal reaction to games is often not favorable. Even given the $9.5 billion the industry experienced in sales in 2007, there is a prevailing idea that games are just kid stuff. Even gaming industry professionals, pulling down close to six-figure salaries, have a difficult time explaining what they do for a living to those not in the industry (fighting the idea that all they do is play games all day). Clearly, the numbers support the fact that it's primarily adults buying and playing games, but there are significant issues that arise because of this perception of games as child's play.

In addition, violence in video games has garnered an incredible amount of attention because of concerns with youth violence. As with television and movies, parents are concerned with their children being exposed to violent images in video games. Throw in a few school shootings (where the assailants were known to play video games or sometimes just wrongly assumed to have done so) into the mix, and the perception is formed that games are detrimental to children in our society. Is this perception well deserved or unfair? If part of the popularity of games is because they have goals and stages, what happens when those goals and stages are violent in nature?

Legal Issues

An exhaustive history of controversial video games is beyond the scope of this chapter (and has been done very well on the Web in at least two places: an article on the Gamespot Web site [Gonzalez03] and one by University of Bucknell computer science student Jason Yu [Yu01]). However, a few "notorious" games spurred Congress or community to action, and we'll briefly survey some of them here.

In 1992, Sega released a game called *Night Trap* to a largely unaware public. The game, likely destined for the bargain bin on its own merits, gained a certain celebrity for its "mature" content. Although the game featured nothing more controversial than your average B-grade movie, it was pulled from stores. In the game, you were tasked with saving the lives of five coeds living in a house haunted by vampires (and not cast in the role of the killer as was often mistakenly reported). Through a series of closed-circuit cameras, you were able to view events in the house, spring traps on the vampires, and catch the occasional lingerie pillow fight. Certainly, the game achieved notoriety far beyond what was warranted by the crude gameplay and vaguely titillating content.

Segue to another 1992 game called *Mortal Kombat*. Between its gruesome "fatalities" and the virtual gouts of blood, this fighting game was notable for its gameplay, but notorious for its quasi-realistic depictions of violence. While the arcade debut didn't garner much negative attention, the decision to bring it into the home shined a harsh spotlight on the game.

As a reaction to games like *Mortal Kombat* and *Night Trap*, Senator Joseph Lieberman (D-Connecticut) started hearings in late 1993 to call the video games industry on the carpet. The ultimatum to video game manufacturers was delivered: regulate yourselves or the government will do it for you. Lieberman, joined in March 1994 by Senator Herbert Kohl (D-Wisconsin), held a meeting attended by top video game

officials where video game companies presented the senators with a 12-point plan for self-regulation. This was the birth of the ESRB.

In late 1994, another game destined for notoriety was created in Texas by (now legendary) id Software. The game *Doom* featured fast-paced action as you wandered around a demon-infested space station destroying the zombified former occupants (as well as various hell-spawned monsters) with a variety of armaments littering the hallways. It, and its predecessor, *Wolfenstein 3D*, were some of the earliest entries into the first-person shooter genre of games. It was a hugely successful game, and was one of the first to popularize a method of distribution where the first "chapter" of the game was free and players purchased the game only if they wanted to play the subsequent two chapters. It skated by the 1993–1994 hearings without mention, but was the subject of controversy a few years later.

On April 20, 1999, one of the most devastating school shootings in U.S. history occurred at Columbine High School, just west of Denver, Colorado. The two teenage gunmen were known to play *Doom*. Once more, video games were at the forefront of controversy. Several lawsuits followed, against id Software and other video game companies, alleging that their games had influenced the two perpetrators. Since then, all lawsuits have been dropped [AP0302].

Another game that has been the focus of legal issues is Rockstar's *Grand Theft Auto: Vice City*. Set in Miami, this first-person action/adventure game puts you in the role of a lackey driver for the mob. A sequel to the equally controversial *Grand Theft Auto III*, the game's innovative brand of gameplay has made it a huge success. The game series is not without its detractors, however. In November 2003, the Haitian Centers Council and Haitian Americans for Human Rights, two Haitian-American rights groups, protested the game in New York City. In *Vice City*, during one of the missions, the player is instructed to "Kill the Haitians." The context of the game places this in the midst of a gang battle between a Cuban gang and a Haitian gang, where to score points with one gang, you are to eliminate members of the other. In early December 2003, Rockstar announced that they would remove the offending line from the game (which they later did). This didn't really quell the controversy, however, when in January 2004 a Federal case against Rockstar Games, Take-Two Interactive, Sony, Wal-Mart, Microsoft, Best Buy, and Target was dropped, only to be taken up again in a Florida court where the plaintiff group, headed by the Haitian-American Coalition of Palm Beach County, hoped to get a more stringent ruling than they would by leaving it at the Federal level. Since that time, numerous lawsuits have been filed against Rockstar and Take-Two because of the *Grand Theft Auto* series of games (many by the infamous, now-disbarred Florida attorney, Jack Thompson). Note that *GTA IV* was one of the best-selling video games of 2008 and that the only long-term result thus far of these lawsuits has been the self-censoring of *GTA: Vice City*.

Finally, in the year 2000, in the state of Missouri, a St. Louis County ordinance was passed that regulated access of video games in the home and arcades. The ESA (then called the Interactive Digital Software Association) filed a lawsuit in response.

In April 2002, Senior U.S. District Judge Stephen N. Limbaugh rejected the Association's argument [AP0402]. After viewing gameplay from *Resident Evil*, *Mortal Kombat*, *Doom*, and *Fear Factor*, he wrote in his decision, "This court reviewed four different video games and found no conveyance of ideas, expression, or anything else that could possibly amount to speech. The court finds that video games have more in common with board games and sports than they do with motion pictures." The 8th Circuit Court of Appeals in St. Louis eventually overturned the decision stating, "Whether we believe the advent of violent video games adds anything of value to society is irrelevant; guided by the first amendment, we are obliged to recognize that 'they are as much entitled to the protection of free speech as the best of literature'" [USDCOA03].

Games and Youth Violence

As you will have noticed, most of the legal battles and threatened legislation in these few, brief examples revolved around fears about the potential effects of violent video games on youth. Is this a reasonable concern? What are the effects of violent video games on children? That's a tricky question, as often anecdotal or skewed evidence is pointed to as definitive.

In the same St. Louis court case mentioned previously, an amicus scholars' brief was filed by 33 media scholars, games researchers, historians, and psychologists. The scholars' brief quoted British psychologist Guy Cumberbatch, who claimed that it was puzzling that anyone could look at the research evidence and be so confident and passionate that harm was caused by the violence on television, film, and video games. While tests of statistical evidence are important, Cumberbatch worried they were being used to torture the data until it confessed to something that could secure publication in a scientific journal. He further claimed that lynch mob mentality has surrounded the debate on media violence with almost any evidence used to prove guilt [FEP02]. There are studies that point to such things as heightened heart rates after playing violent video games or watching violent television programs or movies, but these studies also point to those physical effects quickly fading. If the amicus scholars' brief is correct, then clearly, more thoughtful research needs to be done to determine the effects of violent video games on children.

It begs the question: What exactly is violence as portrayed in video games? Does a violent action correspond exactly with what would be considered a violent action in society? There are many games for children where the on-screen character hits other characters or is hit in cartoonlike fashion, and they are largely not considered violent. Games that depict just the strategic elements of war in *Risk*-like fashion are largely not considered violent either, although war is, by its very nature, unavoidably violent. Is whether an action is violent or not determined in some sense by the realism of the depiction? How does this change over time? Games like *Mortal Kombat* were controversial for their "realistic" depictions of blood, but that 1992 depiction is now laughable compared to any modern depiction of blood.

Root of All Evil, or Good, Old-Fashioned Fun?

On the one hand, the argument by one St. Louis judge concludes that games don't constitute speech (much less protected speech), while on the other hand, the fear in violent games is that they are essentially indoctrinating our youth into violent behavior. Is there a disconnect there, in the idea that games are simultaneously seen as meaningless entertainment, and yet as a source of potentially violent behavior? These arguments would seem opposed to each other, for wouldn't games have to be more than meaningless entertainment to have a lasting effect? If a game currently considered speech is stripped of elements one by one (art, story, gameplay, sound, etc.), which element or elements would need to be stripped away to not consider it speech anymore? Moreover, at what point would it not be able to be considered a game anymore? How would that change depending on the culture you were in and its particular values?

Cultural Issues

Cultural issues are an important consideration during game creation. Things that may be commonplace in one culture can have an entirely different connotation in another culture. If a game is going for a global release versus a domestic release, many things might have to be changed to appeal to or even simply not offend another culture. Even within a culture, there might be people in an intended demographic who don't get the in-jokes, or find the content of a game outright offensive. It's not always clear from the outset what these issues might be, either. History can provide important guideposts in this area, while not necessarily providing all the answers.

Worst . . . Stereotype . . . Ever

Humor is subjective, as anyone who's listened to eggnog-inspired, bad holiday jokes can tell you, and some cultures are a little more sensitive to depictions within games than others (as evidenced by the Haitian-American response to *Grand Theft Auto: Vice City*). Sometimes, when a cultural stereotype is played for humorous effect, the effects may just not hit everyone's funny bone. It's easy to rationalize it away or say, "Well, they just don't get the joke," but a significant uproar can have detrimental effects on a game's sales and community standing.

See the case of the 1997 3D Realms game *Shadow Warrior* and its humorously (but perhaps insensitively) named hero "Lo Wang." The game was riddled with send-ups of cultural stereotypes and rife with politically incorrect references. The Japanese-American community didn't appreciate the lampooning of its culture, and they didn't see it as the good-natured jab it was intended to be. Sales for the game weren't huge, and the controversy didn't last long, but it could be argued that the culture that might have found the most fun with the game was offended instead of amused.

Even the TV show *The Simpsons*, which has a long history of poking fun at literally everything and everyone, got in some trouble when Bart pretended to have Tourette's

Syndrome in one episode. *The Simpsons* has had umpteen years with millions and millions of viewers to build a strong case of being an equal-opportunity offender to all creeds, cultures, races, and religions. However, games don't have that long to establish exactly where they stand, and it can be dangerous and insensitive to be seen as singling out one culture for ridicule.
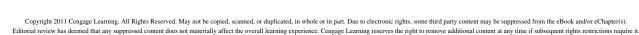
Foreign Diplomacy

A global release brings its own set of issues. Games can be banned outright in some countries for seemingly arbitrary reasons, sometimes even after great lengths have been taken to be culturally sensitive to that specific country. Other times, a game that would seem on its face to be offensive to a particular country can be a huge success, leaving befuddled producers and marketers scratching their heads.

Germany

Germany, sensitive to its past, has stringent regulations on the violent content in its video games. In Germany, there exists a list called the *index* or *banned list.* With restrictions more stringent than most other European countries (or most countries in general), many violent video games have some hoops to jump through upon German release. Some games can avoid being placed on the list by changing a few controversial elements (red blood to green blood, for example). Games depicting Nazi iconography have avoided the list by switching those images to less controversial ones. In cases like *Return to Castle Wolfenstein* (where in addition to changing the Nazi flags to a generic symbol, a Nazi song played by a phonograph within the game was changed to a piece of classical music), that may not be enough, and the game may be placed on the index despite extensive measures taken to be sensitive to the culture. Ultimately, a banned list game cannot be advertised, displayed in stores, or be sold to people under 18, which can make a game incredibly hard to market and sell.

China

China has a long history of banning video games as well. In May 2004, the 2002 PC game *Hearts of Iron* by Swedish company Paradox was banned by China's Ministry of Culture for "distorting history and damaging China's sovereignty and territorial integrity" [CD04]. In part, the game supposedly misrepresented historical facts regarding Japan, Germany, and Italy's participation in World War II. In addition, the game made "Manchuria," "West Xinjiang," and "Tibet" sovereign countries in the in-game maps. All of these are big no-nos according to China's gaming and Internet service regulations. As a result, Web sites were prohibited from releasing the game, sellers were prohibited from selling the game (under threat of legal punishment), and all CD-ROM copies of the game were confiscated. This is just one example from a very long list.
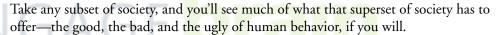
Japan

While Japan has in the past banned games for sexual content, and, in general, they eschew the more violent games, a recent game caused a curious reaction. EA's *Medal of Honor: Rising Sun* depicts, among other things, the Japanese attack on Pearl Harbor. The game covers the Pacific campaign of World War II from 1941–1945. The player's basic goal, as outlined on EA's Web page, is to "stop Japanese forces from achieving control of the Pacific Theatre." The game sold 200,000 copies in Japan in its first two weeks. The game did a good job of depicting nonstereotyped Japanese soldiers as real human beings in an armed conflict, but still, one wouldn't necessarily expect a game depicting this particular conflict to be a huge success in Japan. Japanese gamers were unconcerned with the idea that they were killing their grandfathers, and concentrated instead on the gameplay.

Cultural Acceptance

It's not a simple thing to make clear-cut rules about what will find acceptance within others' cultures. Sometimes, the preemptive tailoring of a game to a specific culture's mores helps, and sometimes it doesn't. Certain cultures will ban a game specifically for a depiction of history that disagrees with what they believe; others will ignore culturally sensitive issues in favor of strong gameplay. Cultural sensitivity is a minefield, where only the strongest instances of offense are clearly problematic.

Society within Games

Take any subset of society, and you'll see much of what that superset of society has to offer—the good, the bad, and the ugly of human behavior, if you will.

Online Behavior: The Good

The hugely popular massively multiplayer online role-playing game (MMORPG) *EverQuest* has seen many different kinds of behavior since its release in 1999. One phenomenon of note, though, was the *EverQuest* Wedding, where characters "wed" other characters in online ceremonies (complete with virtual food, drink, and avatars of their virtual friends). In some ways, this might seem to represent stunted social interaction, but that would be a somewhat pessimistic view. It could also be seen as representing the natural culmination of society—the joining of people together in bonds that, to the people involved, could be serious and genuine. What can be better than the mutual expression of love between two people, virtual or otherwise? Societally speaking, we are built around that very premise.

Online Behavior: The Bad

Online play is not always representative of the best society has to offer, though. More serious than simple antisocial behavior (which we will discuss next), online games can

become so involving to people that their real lives are neglected, or they can't separate the virtual world from the real. Take the case of South Korea's Kim Kyung-Jae, a 24-year-old who collapsed and died after playing online games nearly nonstop (taking breaks only to use the restroom and buy cigarettes) for 86 straight hours [Gluck02]. In another disturbing online gaming-related death, a 17-year-old British Columbia boy was killed after repeatedly trouncing three men in a game of *CounterStrike* at an Internet café. After one too many wins, the three men physically beat the 17-year-old, then left the café, returned with a handgun, and shot him [Devitt03]. Lastly, there is the case of a mentally troubled Wisconsin man who took his life with a shotgun after many months of a 12-hour-a-day *EverQuest* habit. His mother claimed to have found him with an *EverQuest* login screen up on his computer, and started a lawsuit against Sony, wanting warning labels placed on the games. Her belief was that some event online caused him to take his own life, and that Sony should be held partially responsible [Fox02]. While online gaming can't reasonably be held responsible for the behavior of a few emotionally troubled individuals, as more and more online games get more and more popular, statistically speaking, there will be an increase of these types of incidents.

Online Behavior: The Ugly

An interesting psychological phenomenon that has taken root in the online gaming world and in gaming forums is that of *deindividuation*. This is the phenomenon where anonymity allows the person to demonstrate behaviors that he would not be able to exhibit if he were known. A somewhat insidious noncomputer example of this is that of the Ku Klux Klan. Essentially, the white hoods and robes rob the individuals of their identity and thus their compunction to follow societal norms, allowing them to commit acts outside the bounds of accepted behavior. In online games, this behavior, taken to a far less extreme than in the KKK example, nonetheless allows people a certain anonymous "bravado" with which to fuel antisocial desires. In games, this often exhibits as rude or disruptive behavior to other players (excessive taunting, swearing, racial and homophobic epithets, etc.). In real life, these people almost universally would not be able to act this way, but in the anonymity of an online world, they have few perceptible limits on their behavior.

Tools

Society in the online world has come up with ways to deal with these issues. Just as the police in nonvirtual society enforce socially acceptable behavior, moderators and game wardens can help create a sense of stronger community within a game by encouraging social behavior and discouraging disruptive behavior. A game is not going to be fun to members of a particular ethnicity if that particular ethnicity is the target of the invective of some anonymous gamer. Gamers also like the ability to take control of their own destinies, as it were, so tools that allow them to ignore other users or report bad behavior are also a standard in most modern games with online capability.

Some of the more positive tools are those that facilitate communication. Often, games come with multiple tiers of communication. The MMORPG *World of Warcraft* contains the ability to talk on a zone channel (where players can conduct general, game, or nongame chat to players within the same zone); a trade channel (to facilitate the buying and selling of player-created/found goods); a "say" channel with a limited range so players can communicate with those directly near them; a "yell" channel (a larger ranged "say" channel); a group channel (for communication within a joined party); a whisper channel (for private communication between players); and a guild channel (for discussion within player-created guilds). That's quite a few ways that people can do something seemingly simple, like talk with each other, but this reflects the myriad ways in which societal communication works (whispers, private phone calls, interaction with small groups, garage sales, yelling in a public place, social groups and clubs, etc.). In addition, the game features mailboxes where players can send each other messages, money, or goods (for when players are not on simultaneously), further enhancing the societal interaction and sense of cooperation.

In-game tools are only the start, though. There are many MMO fansites on the Internet, with seemingly more popping up every day. These sites contain elements like fan-created stories, game information, forums, newsletters, and fan-created art. Liken it to, for example, golfers, who purchase golfing magazines, wear golfing paraphernalia, spend time reading books about and discussing their favorite hobby. People like to spend time immersed in their favorite hobbies, even when they're not directly doing them. It's not hard to tie this into two of the fundamental reasons posited why people play video games, namely communication and interactivity.

Summary

The tremendous popularity of games can be attributed, in part, to characteristic elements of games that fulfill certain societal and personal needs. Some of these elements are real-time interaction, goals, and stages. Increasing audience and expanding demographics point to the further evolution of video games in their ability to incorporate these elements in a way that fulfills players' needs. Different game elements appeal differently to people. Culture and society have a major impact on the success of games because of this variability.

The success of video games as a fiscal and cultural entity is not without controversy, though, as people struggle to understand this emerging media's effect on society. In some cases, a game may find a niche within a particular culture or society; in others, a game element may inadvertently cause offense. In particular, concerns over the effects of violent games on youth are prevalent, with few comprehensive studies done that can point to clear answers. Lawmakers and judges will continue to hammer out issues of what regulations and restrictions should apply to games, while attempting to answer questions about whether games constitute speech or merely mechanical action.

Ultimately, the evolution and sophistication of games has led to a point where the communities that spring up within and around games act as a microcosm for the larger society. In-game tools and extra-game elements like fansites enable these in-game societies to function at a high level and increase the absorption of video games into society. This absorption is also not without controversy, as some individuals are unable to successfully separate their online lives from their real lives.

Exercises

1. Take the statement: The ultimate measure of a video game's success is the absorption of its characters and symbols into other forms of media, such as television or movies. Defend or refute this statement.

2. Do you agree with the list of appealing video game elements (interactive play, goals, community facilitation, stages)? What would you change, remove, or add to this list?

3. What elements of a game need to be taken away before it can no longer be considered speech? At what point does it no longer become a game?

4. Discuss which is more violent, a game that uses very graphic, but cartoon-like violence, or a game that has mild, but incredibly realistic violence? Is realism the only key, or are there others?

5. Consider your culture and society. What aspects of your culture and society might be offensive to you if lampooned in a game? Would it depend on the overall presentation, or are there always taboo elements despite the presentation?

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