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Digital Gaming and the Media Playground

At least since the days of Johannes Vermeer, the Dutch master of photorealism painting in the seventeenth century, humans have sought to create real-looking visual experiences; that is, virtual reality (VR). Part of the technical challenge has been generating three-dimensional (3-D) images—something Vermeer couldn't quite do with a two-dimensional painting. By the 1830s, inventors had developed stereoscopes, binocular devices with left-eye and right-eye views of the same image that, when combined by human vision, created the depth of a third dimension. From the mid-1800s through the 1930s, viewing collections of stereo cards—of places like Egypt's Sphinx, New York's Flatiron Building, or Yosemite Valley—was a popular home entertainment. From the 1940s onward, plastic View-Master devices were popular toys for viewing a wheel of 3-D images of tourist attractions, television scenes, and cartoons.

Since that time, of course, there have been advances into 3-D film (first in the 1950s, with viewers wearing cardboard glasses with red and blue lenses, and now with more advanced digital 3-D, as seen in movies like *Avatar*) and amusement park experiences (which often add motion effects).

Mark Ralston/AFP/Getty Images

Now we have 3-D television in addition to digital 3-D films. Still, the ultimate goal for enthusiasts of virtual reality has been to immerse themselves in a digital world. A recent breakthrough might finally accomplish this: the Oculus Rift.

In 2014, Facebook purchased a small virtual reality company called Oculus VR, which invented the Oculus Rift, a virtual reality headset. Oculus invites us to "Step into the Rift. The Rift is unlike anything you've ever experienced. Whether you're stepping into your favorite game, watching an immersive VR movie, jumping to a destination on the other side of the world, or just spending time with friends in VR, you'll feel like you're really there."[1] The device is scheduled to be released in 2016, and it has already received rave reviews. TechRadar reported that when combining the Oculus headset with Oculus Touch handsets, "total immersion" was complete. "I was not only able to pick up objects, I could shoot guns, slingshots, punch objects, pull heads off robots, and light sparklers on fire with a lighter,"[2] the reviewer wrote.

But Facebook CEO Mark Zuckerberg's bigger bet is that virtual reality will be the next generation of gaming style and then the leading interface for everything else in the media business, describing Oculus as a potential platform for experiences like sporting events and virtual classrooms.[3] Facebook envisions digital games as a way for virtual reality to enter every part of our lives. After all, why would we want to "share" our experiences via two-dimensional posts on Facebook when we can be there—virtually—on the Facebook of the future?

Thomas Samson/AFP/Getty Images

Still, the leading edge of virtual reality has always been entertainment. Competing with the Oculus Rift are the Sony Project Morpheus and the HTC Vibe, VR headsets and controllers for gaming also scheduled for release in 2016. Another competitor takes users out of the house. The VOID, a virtual reality play park, plans to open in 2016 in a suburb of Salt Lake City, and then expand with a chain of locations (the company calls them Virtual Entertainment Centers) around the world.[4] Players will wear an Oculus-like head-mounted virtual reality display, plus a virtual reality vest and virtual reality gloves. The environment is a VR game played out like laser tag in real space—a series of 60-by-60-foot rooms with digital overlays creating any number of scenes, such as a haunted castle, a futuristic battlefield, or a dinosaur safari. The haptic feedback in the vest means players can "feel" laser blasts, fire bursts, and creature attacks.

For those who find this new tech too complicated, another option combines the advancements of smartphones with the low tech of a craft project: Google Cardboard, which turns a smartphone into an old-fashioned stereoscope or ViewMaster through a cardboard viewer and accompanying app. Google says, "Google Cardboard brings immersive experiences to everyone in a simple and affordable way. Whether you fold your own or buy a Works with Google Cardboard certified viewer, you're just one step away from experiencing virtual reality on your smartphone."[5]

And here we are, once again, on the quest to experience virtual reality—holding our smartphone to our eyes with a cardboard viewer, at home with an advanced headset device, or in a virtual theme park, running through a completely digital world. We may have finally reached it.

▲ *ELECTRONIC GAMES OFFER PLAY, ENTERTAINMENT, AND SOCIAL INTERACTION.* Like the Internet, they combine text, audio, and moving images. But they go even further than the Internet by enabling players to interact with aspects of the medium in the context of the game—from deciding when an onscreen character jumps or punches to controlling the direction of the "story." This interactive quality creates an experience so compelling that vibrant communities of fans have cropped up around the globe. And the games have powerfully shaped the everyday lives of millions of people. Indeed, for players around the world, digital gaming has become a social medium as compelling and distracting as other social media. The U.S. Supreme Court has even granted digital gaming First Amendment freedom of speech rights, ensuring its place as a mass medium.

In this chapter, we will take a look at the evolving mass medium of digital gaming and:

- Examine the early history of electronic gaming, including its roots in penny arcades
- Trace the evolution of electronic gaming, from arcades and bars into living rooms and our hands
- Discuss gaming as a social medium that forms communities of play
- Analyze the economics of gaming, including the industry's major players and various revenue streams
- Raise questions about the role of digital gaming in our democratic society

Getty Images

THE SUPER MARIO BROTHERS, Mario and Luigi, have been video game mainstays for over thirty years. In addition to the various Mario Brothers games (including the influential Nintendo original, released in 1985), the characters have appeared in cartoons, comic books, a live-action movie, and an enormous variety of sequel and spin-off games, including games centered on fighting, racing, and puzzle solving.

The Development of Digital Gaming

When the Industrial Revolution swept Western civilization two centuries ago, the technological advances involved weren't simply about mass production. They also promoted mass consumption and the emergence of *leisure time*—both of which created moneymaking opportunities for media makers. By the late nineteenth century, the availability of leisure time had sparked the creation of mechanical games like pinball. Technology continued to grow, and by the 1950s, computer science students in the United States had developed early versions of the video games we know today.

In their most basic form, digital games involve users in an interactive computerized environment where they strive to achieve a desired outcome. These days, most digital games go beyond a simple competition like the 1975 tennis-style game of *Pong*: They often entail sweeping narratives and offer imaginative and exciting adventures, sophisticated problem-solving opportunities, and multiple possible outcomes.

But the boundaries were not always so varied. Digital games evolved from their simplest forms in the arcade into four major formats: television, handheld devices, computers, and the Internet. As these formats evolved and graphics advanced, distinctive types of games emerged and became popular. These included action games, sports games, shooter games, family entertainment games, role-playing games, adventure games, racing games, strategy games, fighting games, simulation games, computerized versions of card games, fantasy sports leagues, and virtual social environments. Together, these varied formats constitute an industry that analysts predict will reach $107 billion in annual revenues worldwide by 2017—and one that has become a socially driven mass medium.[6]
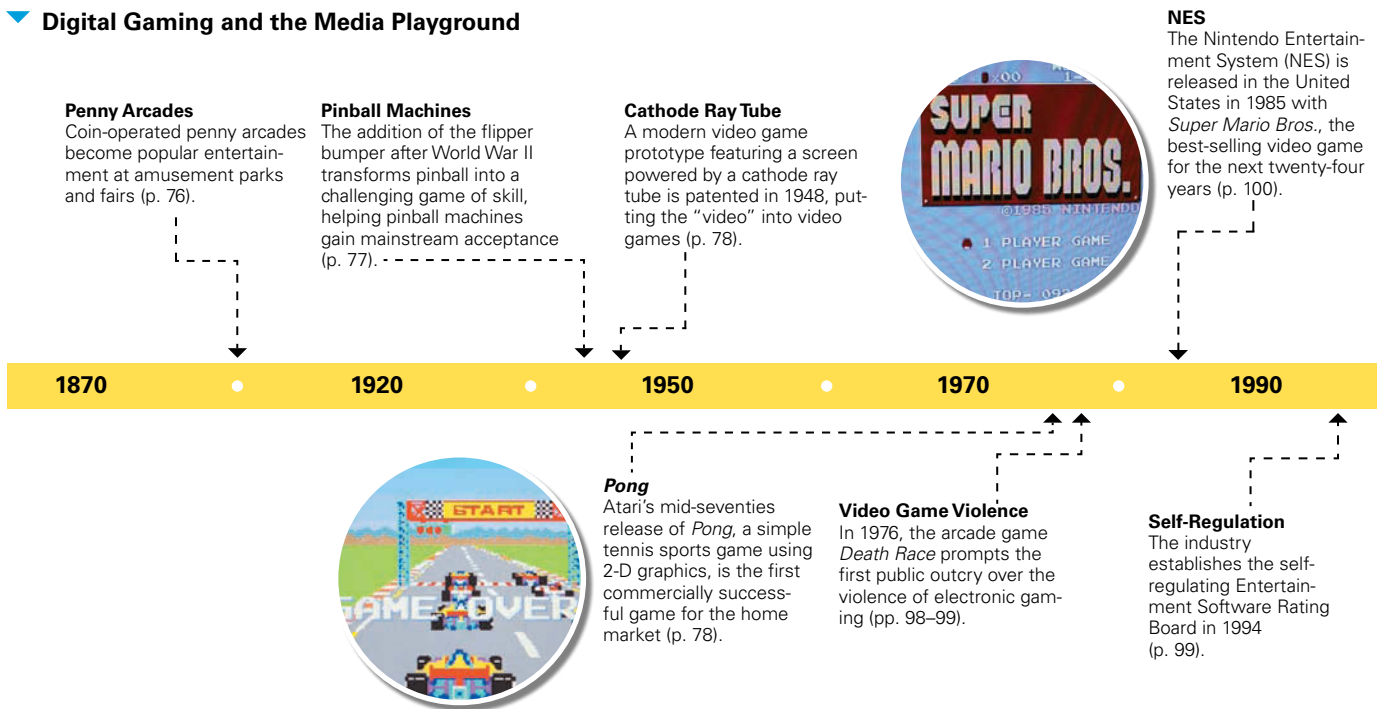
Mechanical Gaming

In the 1880s, the seeds of the modern entertainment industry were planted by a series of coin-operated contraptions devoted to cashing in on idleness. First appearing in train depots, hotel lobbies, bars, and restaurants, these leisure machines (also called "counter machines") would find a permanent home in the first thoroughly modern indoor playground: the **penny arcade**.[7]

Arcades were like nurseries for fledgling forms of amusement that would mature into mass entertainment industries during the twentieth century. For example, automated phonographs used in arcade machines evolved into the jukebox, while the kinetoscope (see Chapter 7) set the stage for the coming wonders of the movies. But the machines most relevant to today's electronic gaming were more interactive and primitive than the phonograph and kinetoscope. Some were strength testers that dared young men to show off their muscles by punching a boxing bag or arm wrestling a robotlike Uncle Sam. Others required more refined skills and sustained play, such as those that simulated bowling, horse racing, and football.[8]

Another arcade game, the bagatelle, spawned the **pinball machine**, the most prominent of the mechanical games. In pinball, players score points by manipulating

▼ **Digital Gaming and the Media Playground**

Penny Arcades
Coin-operated penny arcades become popular entertainment at amusement parks and fairs (p. 76).

Pinball Machines
The addition of the flipper bumper after World War II transforms pinball into a challenging game of skill, helping pinball machines gain mainstream acceptance (p. 77).

Cathode Ray Tube
A modern video game prototype featuring a screen powered by a cathode ray tube is patented in 1948, putting the "video" into video games (p. 78).

NES
The Nintendo Entertainment System (NES) is released in the United States in 1985 with *Super Mario Bros.*, the best-selling video game for the next twenty-four years (p. 100).

| 1870 | • | 1920 | • | 1950 | • | 1970 | • | 1990 |

Pong
Atari's mid-seventies release of *Pong,* a simple tennis sports game using 2-D graphics, is the first commercially successful game for the home market (p. 78).

Video Game Violence
In 1976, the arcade game *Death Race* prompts the first public outcry over the violence of electronic gaming (pp. 98–99).

Self-Regulation
The industry establishes the self-regulating Entertainment Software Rating Board in 1994 (p. 99).

the path of a metal ball on a playfield in a glass-covered case. In the 1930s and 1940s, players could control only the launch of the ball. For this reason, pinball was considered a sinister game of chance that, like the slot machine, fed the coffers of the gambling underworld. As a result, pinball was banned in most American cities, including New York, Chicago, and Los Angeles.[9] However, pinball gained mainstream acceptance and popularity after World War II with the addition of the flipper bumper, which enables players to career the ball back up the play table. This innovation transformed pinball into a challenging game of skill, touch, and timing—all of which would become vital abilities for video game players years later.

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MODERN GAMING EVENTS and obsessions can be traced back to the emergence of penny arcades in the late nineteenth century. Today, pinball machines remain in many bars and arcades, and pinball expos are held all over the country.
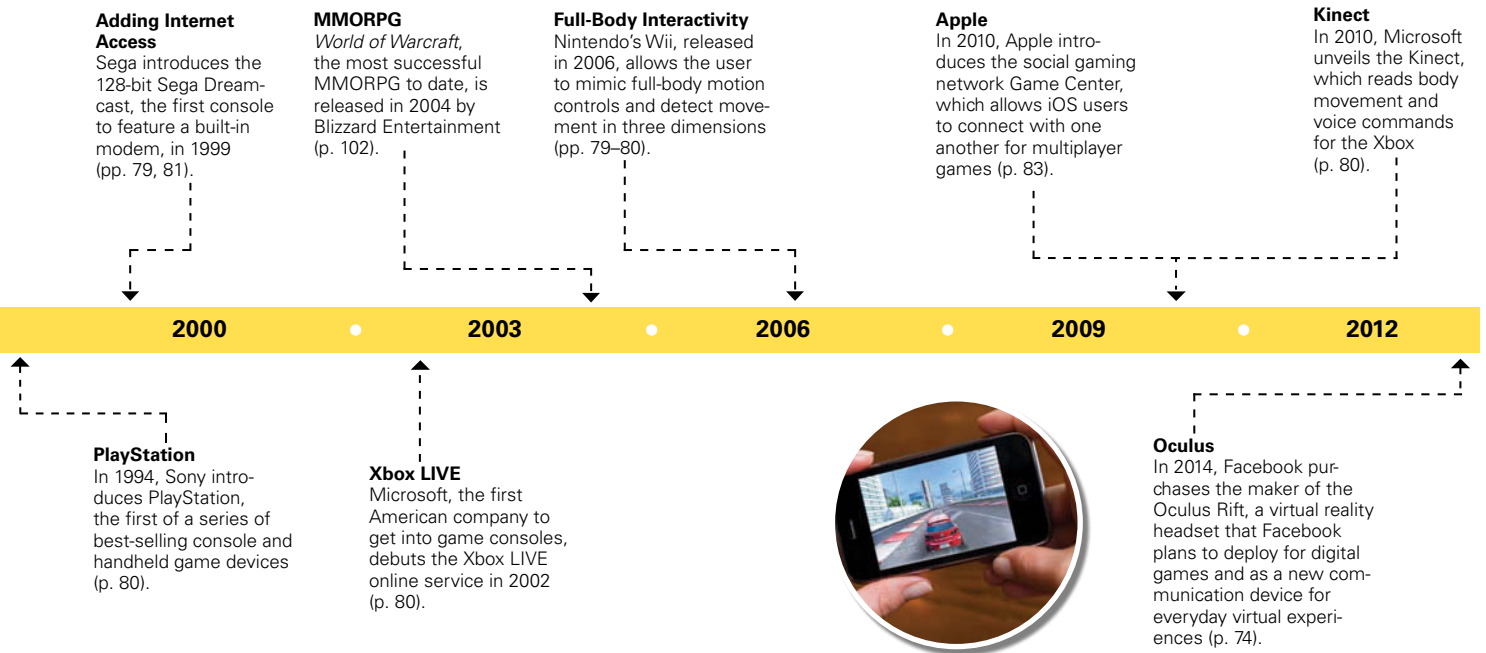
Adding Internet Access
Sega introduces the 128-bit Sega Dreamcast, the first console to feature a built-in modem, in 1999 (pp. 79, 81).

MMORPG
World of Warcraft, the most successful MMORPG to date, is released in 2004 by Blizzard Entertainment (p. 102).

Full-Body Interactivity
Nintendo's Wii, released in 2006, allows the user to mimic full-body motion controls and detect movement in three dimensions (pp. 79–80).

Apple
In 2010, Apple introduces the social gaming network Game Center, which allows iOS users to connect with one another for multiplayer games (p. 83).

Kinect
In 2010, Microsoft unveils the Kinect, which reads body movement and voice commands for the Xbox (p. 80).

| 2000 | • | 2003 | • | 2006 | • | 2009 | • | 2012 |

PlayStation
In 1994, Sony introduces PlayStation, the first of a series of best-selling console and handheld game devices (p. 80).

Xbox LIVE
Microsoft, the first American company to get into game consoles, debuts the Xbox LIVE online service in 2002 (p. 80).

Oculus
In 2014, Facebook purchases the maker of the Oculus Rift, a virtual reality headset that Facebook plans to deploy for digital games and as a new communication device for everyday virtual experiences (p. 74).

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THE *ODYSSEY²*, a later model of the *Odyssey* console, was released in 1978 and featured a full keyboard that could be used for educational games.

The First Video Games

Not long after the growth of pinball, the first video game patent was issued on December 14, 1948, to Thomas T. Goldsmith and Estle Ray Mann for what they described as a "Cathode Ray Tube Amusement Device." The invention would not make much of a splash in the history of digital gaming, but it did feature the key component of the first video games: the cathode ray tube (CRT).

CRT-powered screens provided the images for analog television and for early computer displays, where the first video games appeared a few years later. Computer science students developed these games as novelties in the 1950s and 1960s. But because computers consisted of massive mainframes at the time, the games couldn't be easily distributed.

However, more and more people owned televisions, and this development provided a platform for video games. The first home television game, called *Odyssey*, was developed by German immigrant and television engineer Ralph Baer. Released by Magnavox in 1972 and sold for a whopping $100, *Odyssey* used player controllers that moved dots of light around the screen in a twelve-game inventory of simple aiming and sports games. From 1972 until *Odyssey*'s replacement by a simpler model (the *Odyssey 100*) in 1975, Magnavox sold roughly 330,000 consoles.[10]

In the next decade, a ripped-off version of one of the *Odyssey* games brought the delights of video gaming into modern **arcades**. These establishments gather multiple coin-operated games together and can be thought of as a later version of the penny arcade. The same year that Magnavox released *Odyssey*, a young American computer engineer named Nolan Bushnell formed a video game development company, called Atari, with a friend. The enterprise's first creation was *Pong*, a simple two-dimensional tennis-style game, with two vertical paddles that bounced a white dot back and forth. The game kept score on the screen. Unlike *Odyssey*, *Pong* made blip noises when the ball hit the paddles or bounced off the sides of the court. *Pong* quickly became the first video game to become popular in arcades.

In 1975, Atari began successfully marketing a home version of *Pong* through an exclusive deal with Sears. This arrangement established the home video game market. Just two years later, Bushnell started the Chuck E. Cheese pizza–arcade restaurant chain and sold Atari to Warner Communications for an astounding $28 million. Although Atari folded in 1984, plenty of companies—including Nintendo, Sony, and Microsoft—followed its early lead, transforming the video game business into a full-fledged industry.

Arcades and Classic Games

By the late 1970s and early 1980s, games like *Asteroids*, *Pac-Man*, and *Donkey Kong* filled arcades and bars, competing directly with traditional pinball machines. In a way, arcades signaled electronic gaming's potential as a social medium, because many games allowed players to play with or compete against each other, standing side by side. To be sure, arcade gaming has been superseded by the console and computer. But the industry still attracts fun-seekers to businesses like Dave and Buster's, a gaming–restaurant chain operating in more than fifty locations, as well as to amusement parks, malls, and casinos.

To play the classic arcade games, as well as many of today's popular console games, players use controllers like joysticks and buttons to interact with graphical elements on a video screen. With a few notable exceptions (puzzle games like *Tetris*, for instance), these types of

video games require players to identify with a position on the screen. In *Pong*, this position is represented by an electronic paddle; in *Space Invaders*, it's an earthbound shooting position. After *Pac-Man*, the **avatar** (a graphic interactive "character" situated within the world of the game) became the most common figure of player control and position identification. In the United States, the most popular video games today assume a first-person perspective, in which the player "sees" the virtual environment through the eyes of an avatar. In South Korea and other Asian countries, many real-time strategy games take an elevated three-quarters perspective, which affords a grander and more strategic vantage point on the field of play.

Consoles and Advancing Graphics

Today, many electronic games are played on home **consoles**, devices specifically used to play video games. These systems have become increasingly more powerful since the appearance of the early Atari consoles in the 1970s. One way of charting the evolution of consoles is to track the number of bits (binary digits) that they can process at one time. The bit rating of a console is a measure of its power at rendering computer graphics. The higher the bit rating, the more detailed and sophisticated the graphics. The Atari 2600, released in 1977, used an 8-bit processor, as did the wildly popular Nintendo Entertainment System, first released in Japan in 1983. Sega Genesis, the first 16-bit console, appeared in 1989. In 1992, 32-bit computers appeared on the market; the following year, 64 bits became the new standard. The 128-bit era dawned with the marketing of Sega Dreamcast in 1999. With the current generation of consoles, 256-bit processors are the standard.

Of course, more detailed graphics have not always replaced simpler games. Nintendo, for example, offers many of its older, classic games for download onto its newest consoles even as updated versions are released, for the nostalgic gamers as well as new fans. Perhaps the best example of enduring games is the *Super Mario Bros.* series. Created by Nintendo mainstay Shigeru Miyamoto in 1983, the original *Mario Bros.* game began in arcades. The 1985 sequel *Super Mario Bros.*, developed for the 8-bit Nintendo Entertainment System, became the best-selling video game of all time (holding this title until 2009, when it was unseated by Nintendo's *Wii Sports*). Graphical elements from the *Mario Bros.* games, like the "1UP" mushroom that gives players an extra life, remain instantly recognizable to gamers of all ages. Some even appear on nostalgic T-shirts, as toys and cartoons, and in updated versions of newer games.

Through decades of ups and downs in the electronic gaming industry (Atari folded in 1984, and Sega no longer makes video consoles), three major home console makers now compete for gamers: Nintendo, Sony, and Microsoft. Nintendo has been making consoles since the 1980s; Sony and Microsoft came later, but both companies were already major media conglomerates and thus well positioned to support and promote their interests in the video game market.

Nintendo released a new kind of console, the Wii, in 2006. The device supported traditional video games like

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POPULAR ARCADE GAMES in the 1970s and 1980s were simple two-dimensional games with straightforward goals, like driving a racecar, destroying asteroids, or gobbling up little dots. Today, most video games have more complex story lines based in fully fleshed-out worlds.

THE ATARI 2600 was followed by the Atari 400, Atari 800, and Atari 5200, but none matched the earlier success of the 2600 model.

Photo by SSPL/Getty Images

New Super Mario Bros. However, it was the first of the three major consoles to add a wireless motion-sensing controller, which took the often-sedentary nature out of gameplay. Games like *Wii Sports* require the user to mimic the full-body motion of bowling or playing tennis, while *Wii Fit* uses a wireless balance board for interactive yoga, strength, aerobic, and balance games. Although the Wii has lagged behind Xbox and PlayStation in establishing an online community, its controller enabled a host of games that appealed to broader audiences, and upon its release, it became the best-selling of the three major console systems. In 2012, Nintendo introduced the Wii U, which features the GamePad: a controller with an embedded touchscreen, on which games can be played without a television set (making it like a handheld video player).

Veteran electronics manufacturer Sony has the PlayStation series, introduced in 1994. Its current console, the PlayStation 4 (PS4, launched in 2013), boasts more than 150 million users on its free online PlayStation Network. Sony's PlayStation Plus is a paid subscription service that adds additional features, such as game downloads, to the PlayStation Network. Sony introduced PlayStation Move, its handheld remote motion-sensing controller, in 2010.

Microsoft's first foray into video game consoles was the Xbox, released in 2001; it was linked to the Xbox LIVE online service in 2002 and released as Xbox 360 in 2005. Xbox LIVE lets its 48 million subscribers play online and enables users to download new content directly to its console. In 2013, Microsoft released the Xbox One, with an upgraded Kinect (a motion-sensing controller first introduced in 2010), as an advanced gaming device and voice-controlled entertainment system. By 2014, Sony's PlayStation 4 and Microsoft's Xbox One were the most popular of the new generation of consoles, with the Wii U lagging in third place in sales.

Each of the three major digital game consoles has its niche. Sony's PlayStation is mostly about gaming, although like the other two consoles, it offers television entertainment features. Microsoft's Xbox is also about gaming, but Microsoft wants its console to be the entertainment hub of the house. Wii features more devices and family-oriented games (the *Super Mario Bros.* are still an omnipresent franchise for Nintendo). All three of the consoles have motion-controlled sensors, online networks, and Internet entertainment links to services like Netflix and Hulu.

Although the major consoles share some game content, not every popular game is multi-platform (that is, one that is released on all three platforms)—so game offerings become a major selling point for a particular system. For example, *Destiny* (by Activision Blizzard), *Assassin's Creed IV: Black Flag* (by Ubisoft), and *Child of Light* (by Ubisoft) come in versions for all three consoles (and personal computers running Microsoft Windows, too). But the console makers also create or license games just for their own platform: *Titanfall* and *Halo 5: Guardians* for the Xbox One, *inFAMOUS Second Son* for the PlayStation 4, and *Mario Kart 8* for the Wii.

Gaming on Home Computers

Like the early console games, very early home computer games often mimicked (and sometimes ripped off) popular arcade games, like *Frogger*, *Centipede*, *Pac-Man*, and *Space Invaders*. Computer-based gaming also featured certain genres not often seen on consoles, like digitized card and board games. The early days of the personal computer saw the creation of electronic versions of games like Solitaire, Hearts, Spades, and Chess, all simple games still popular today. But for a time in the late 1980s and much of the 1990s, personal computers held some clear advantages over

THE ORIGINAL *MARIO BROS*. GAME made its arcade debut in 1983, but it was the 1985 home console sequel *Super Mario Bros.* that made the series a household name. *Super Mario* titles have been developed for the original Nintendo, Super Nintendo, Nintendo 64, GameCube, Game Boy, Wii, and 3DS, for which *Super Mario Bros. 3* was released in 2014.
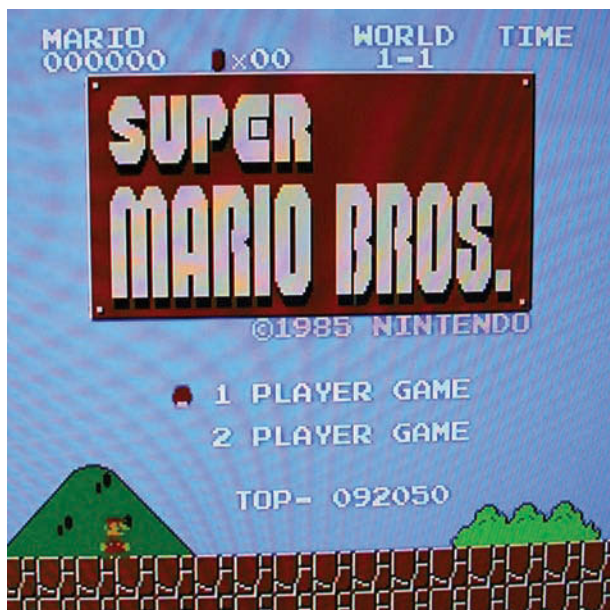
Jamaway/Alamy Images

console gaming. The versatility of keyboards, compared with the relatively simple early console controllers, allowed for ambitious puzzle-solving games like *Myst*. Moreover, faster processing speeds gave some computer games richer, more detailed three-dimensional (3-D) graphics. Many of the most popular early first-person shooter games, like *Doom* and *Quake*, were developed for home computers rather than consoles.

As consoles caught up with greater processing speeds and disc-based games in the late 1990s, elaborate personal computer games attracted less attention. But more recently, PC gaming has experienced a resurgence, due to the advent of free-to-play games (like *Spelunky* and *League of Legends*), subscription games (such as *World of Warcraft* and *Diablo 3*), and social media games (such as *Candy Crush Saga* on Facebook)—all trends aided by the Internet. With powerful processors for handling rich graphics, and more stable Internet connectivity for downloading games or playing games via social media sites and other gaming sites, personal computers can adeptly handle a wide range of activities.

KRT/Newscom

DOOM, an early first-person shooter game that influenced later hits like *Halo,* was first developed for home computers. The first game was released in 1993. It has spawned several sequels and a 2005 feature film.

The Internet Transforms Gaming

With the introduction of the Sega Dreamcast in 1999, the first console to feature a built-in modem, gaming emerged as an online, multiplayer social activity. The Dreamcast didn't last, but online connections are now a normal part of console video games, with Internet-connected players opposing one another in combat, working together against a common enemy, or teaming up to achieve a common goal (like sustaining a medieval community). Some of the biggest titles have been first-person shooter games like *Counter-Strike*, an online spin-off of the popular *Half-Life* console game. Each player views the game from the first-person perspective but also plays on a team as either a terrorist or a counterterrorist.

The ability to play online has added a new dimension to other, less combat-oriented games, too. For example, football and music enthusiasts playing already-popular console games like *Madden NFL* and *Rock Band* can now engage with others in live online multiplayer play. And young and old alike can compete against teams in other locations in Internet-based bowling tournaments using the Wii.

The Internet enabled the spread of video games to converged devices, like tablets and mobile phones, making games more portable and creating whole new segments in the gaming industry. The connectivity of the Internet also opened the door to social gaming, virtual worlds, and massively multiplayer online games.

MMORPGs, Virtual Worlds, and Social Gaming

It is one of the longest acronyms in the world of gaming: **massively multiplayer online role-playing games (MMORPGs)**. These games are set in virtual worlds that require users to play

through an avatar of their own design. The "massively multiplayer" aspect of MMORPGs indicates that electronic games—once designed for solo or small-group play—have expanded to reach large groups, like traditional mass media do.

The fantasy adventure game *World of Warcraft* is the most popular MMORPG, peaking at 12 million subscribers in 2010 and leveling off to 7.1 million subscribers in 2015. Users can select from twelve different "races" of avatars, including dwarves, gnomes, night elves, orcs, trolls, goblins, and humans. To succeed in the game, many players join with other players to form guilds or tribes, working together toward in-game goals that can be achieved only with teams. *Second Life*, a 3-D social simulation set in real time, also features social interaction. Players build human avatars, selecting from an array of physical characteristics and clothing. They then use real money to buy virtual land and to trade in virtual goods and services.

MMORPGs like *World of Warcraft* and simulations like *Second Life* are aimed at teenagers and adults. One of the most overlooked areas (at least by adults) in online gaming is the children's market. *Club Penguin*, a moderated virtual world purchased by Disney, enables kids to play games and chat as colorful penguins. Disney later developed additional *Club Penguin* games for handheld players. Toy maker Ganz developed the online *Webkinz* game to revive its stuffed-animal sales. Each Webkinz stuffed animal comes with a code that lets players access the online game and care for the virtual version of their plush pets. In 2009, as Webkinz sales declined, Ganz started *Webkinz Jr.* to market bigger, more expensive plush animals to preschoolers. *Woozworld* offers a virtual shopping world and chat for the tween market, ages nine to fourteen. All these virtual worlds offer younger players their own age-appropriate environment to experiment with virtual socializing, but they have also attracted criticism for their messages of consumerism. In many of these games, children can buy items with virtual currency or acquire "bling" more quickly through a premium membership. The games also market merchandise to their young players, such as stuffed animals, movies, and clothing.

Online fantasy sports games also reach a mass audience with a major social component. Players—real-life friends, virtual acquaintances, or a mix of both—assemble teams and use actual sports results to determine scores in their online games. But rather than experiencing the visceral thrills of, say, *Madden NFL 15*, fantasy football participants take a more detached, managerial perspective on the game—a departure from the classic video game experience. Fantasy sports' managerial angle makes it even more fun to watch almost any televised game because players focus more on making strategic investments in individual performances scattered across the various professional teams than they do on rooting for local teams. In the process, players become statistically savvy aficionados of the game overall, rather than rabid fans of a particular team. In 2015, over 56 million people played fantasy sports in the United States and Canada; the Fantasy Sports Trade Association currently estimates a market size of more than $3.6 billion.[11]

The increasingly social nature of video games has made them a natural fit for social networking sites. Game apps for Facebook have drawn millions of fans. London-based game developer King is the maker of several of the most popular games on Facebook, including *Candy Crush Saga*, *Farm Heroes Saga*, and *Pet*

THE GAMEMAKER KING has made massive casual-gaming hits out of *Candy Crush Saga* and *Bubble Witch Saga.* The company's sales were $2.4 billion in 2014, with over 530 million active users playing its games.
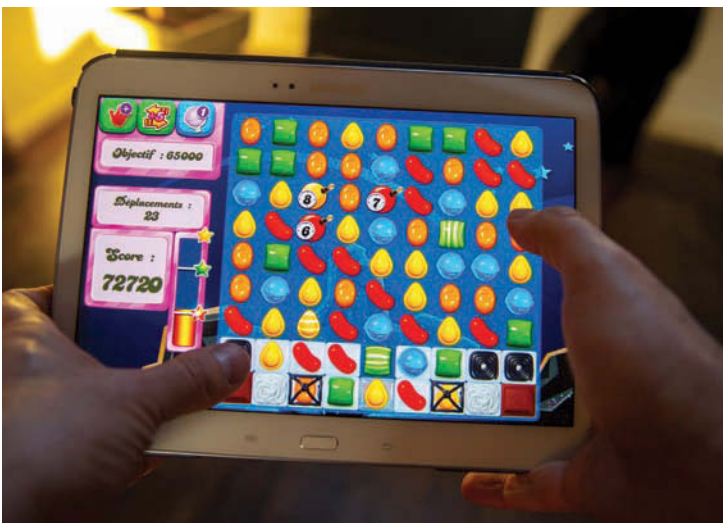
AFP/Getty Images

Rescue Saga. Facebook reported in 2014 that over 375 million people play games on its social network site each month.[12]

Convergence: From Consoles to Mobile Gaming

Digital games made their initial appearance on computers and consoles and were very much wedded to those platforms. Today, though, games can be consumed the same way music and so many books, television shows, and films are consumed: just about anywhere and in a number of different ways. And video game consoles are increasingly part of the same technological convergence that gives devices like smartphones and tablets multiple functions.

Consoles Become Entertainment Centers

Video game consoles, once used exclusively for games, now work as part computer, part cable box. They've become powerful entertainment centers, with multiple forms of media converging in a single device. For example, the Xbox One and PS4 can function as DVD players and digital video recorders (with hard drives of up to 500 gigabytes) and offer access to Twitter, Facebook, blogs, and video chat. The PS4 can also play Blu-ray discs, and all three competing console systems (PS4, Xbox, and Wii) offer connections to stream programming from sources like Netflix and Hulu. Microsoft's Xbox—which has Kinect's voice recognition system, allowing viewers to communicate with the box—has been the most successful in becoming a converged device for home entertainment.

Portable Players and Mobile Gaming

Simple handheld players made games portable long before the advent of Internet-connected touchscreen mobile devices. Nintendo popularized handheld digital games with the release of its Game Boy line of devices and sold nearly 120 million of them from 1989 to 2003 with games like *Tetris*, *Metroid*, and *Pokémon Red/Blue*.[13] The early handhelds gave way to later generations of devices offering more advanced graphics and wireless capabilities. These include the top-selling Nintendo 3DS, released in 2011, and PlayStation Portable (PSP), released in 2005 and succeeded by the PlayStation Vita in 2012. Both brands are Wi-Fi capable, so players can interface with other users to play games or browse the Internet.

While portable players remain immensely popular (the Nintendo 3DS sold more than 154 million units through 2014), they face competition from the widespread use of smartphones and touchscreen tablets like iPads. These devices are not designed principally for gaming, but their capabilities have provided another option for casual gamers who may not have been interested in owning a handheld console. Manufacturers of these converged devices are catching on to their gaming potential: After years of relatively little interest in video games, Apple introduced Game Center in 2010. This social gaming network enables users to invite friends or find others for multiplayer gaming, track their scores, and view high scores on a leader board—which the 3DS and PSP do as well. With more than 700 million iPhones and 225 million iPads sold worldwide by 2015 (and millions more iPod Touch devices in circulation), plus more than 260,000 games (like *Blek* and *Minecraft—Pocket Edition*) available in its App Store, Apple is transforming the portable video game business with its devices, games, and distribution system.[14] Handheld video games have made the medium more accessible and widespread. Even people who wouldn't identify themselves as gamers may kill time between classes or waiting in line by playing *Don't Touch the White Tile 4* on their phones.

Google Play (formerly the Android Market) rivals Apple's App Store in number of apps and provides a substantial platform for gaming on Android mobile phones and tablet devices

HANDHELD GAMING used to require a specific piece of hardware, like the classic Game Boy. But as technology has grown more sophisticated, handheld games can be played on smaller, more versatile devices, like smartphones and PDAs, and some handheld gaming systems can provide more than just games.

© Alex Segre/Alamy

like the Kindle, Galaxy, and Nexus. Microsoft got a later start with its Windows phones and Surface tablet, so its game offerings lag far behind those of the Android and Apple stores.

This portable and mobile gaming convergence is changing the way people look at digital games and their systems. The games themselves are no longer confined to arcades or home television sets, while the mobile media have gained power as entertainment tools, reaching a wider and more diverse audience. Thus gaming has become an everyday form of entertainment, rather than the niche pursuit of hard-core enthusiasts.

With its increased profile and flexibility across platforms, the gaming industry has achieved a mass medium status on a par with film or television. This rise in status has come with stiffer and more complex competition, not just within the gaming industry but across media. Rather than Sony competing with Nintendo, or TV networks competing among themselves for viewers, or new movies facing off at the box office, media must now compete against other media for an audience's attention. Recent statistics mark how far the digital game industry has come: Global box office revenue for the film industry hit a record $36.4 billion in 2014. (The movie industry makes billions more on DVD, streaming, television licensing, and merchandising deals.) In that same year, the worldwide digital game marketplace, including hardware, software, online games, and mobile games, reached $91.5 billion.[15]

The Media Playground

To fully explore the larger media playground, we need to look beyond electronic gaming's technical aspects and consider the human faces of gaming. The attractions of this interactive playground validate electronic gaming's status as one of today's most powerful social media. Electronic games occupy an enormous range of styles, from casual games like *Tetris*, *Angry Birds*, *Bejeweled*, and *Fruit Ninja*—described by one writer as "stupid games" that are typically "a repetitive, storyless puzzle that could be picked up, with no loss of potency, at any moment, in any situation"—to full-blown, Hollywood-like immersive adventure games like *Final Fantasy*.[16] No matter what the style, digital games are compelling entertainment and mass media because they pose challenges (mental and physical), allow us to engage in situations both realistic and fantastical, and allow us to socialize with others as we play with friends and form communities inside and outside of games. (See "Case Study: *Watch Dogs* Hacks Our Surveillance Society" on page 85 for more on the narrative power of video games.)

Video Game Genres

Electronic games inhabit so many playing platforms and devices, and cover so many genres, that they are not easy to categorize. The game industry, as represented by the Entertainment Software Association, organizes games by **gameplay**—the way in which the rules structure how players interact with the game—rather than by any sort of visual or narrative style. There

Watch Dogs Hacks Our Surveillance Society

by Olivia Mossman

With the revelations of government surveillance brought to light by WikiLeaks and Edward Snowden, many Americans are now aware of the possibility that their phone calls are being overheard, their Internet searches observed, and other surveillance conducted without their permission. But what if individual American citizens had the same kind of almost-omniscient hacking powers? Would they use these powers for good?

A new open-world action-adventure game aims to help players discover their stance on modern-day technologies and hacking. *Watch Dogs*, created by Ubisoft and released in 2014, allows players to take the persona of "Aiden Pearce," a hacker in a vaguely futuristic Chicago. The *New York Times* called the game "impossibly well-timed for the year of Edward Snowden."[1]

The Aiden character uses hacking, government records, and surveillance to track down the killer of his niece. However, the game eerily puts into perspective a "futuristic," technologically connected world that looks even more similar to current society than the game designers planned. Players will see a Chicago that is heavily monitored by technology, and while some of the game still uses fantastical versions of smart systems, *Watch Dogs* also predicts where society is headed. In fact, when game developers began constructing the video game in 2009, smartphones were only just emerging. Now they are Aiden's primary weapon and a keystone of society. In reality, the interconnectivity of Chicago is not far from the vision of *Watch Dogs*. A report by video gaming Web site Polygon explains how Chicago's surveillance systems are

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primarily used for fighting crime but have increased in number, decreased in size, and infiltrated the city, even using facial recognition to assist in catching culprits.[2] As Aiden, players can access people's history, identity, and personal accounts for their own self-gain. To actually control the character with such power will no doubt have an impact on players' views of the National Security Agency, its gathering of information through its PRISM program, and their own habits regarding personal disclosure.

Watch Dogs offers another element that is more fact than fiction: It requires users to use game information to make moral decisions. As the game promo says, when playing as Aiden Pearce, you "use your hacking abilities for good or bad—it's up to you."[3] Unlike games such as *Grand Theft Auto*, in which a player in a car can mindlessly run down nameless pedestrians, *Watch Dogs* gives the main character a means to reflect on whom he chooses to kill and why. Each player has the ability to hack information about each individual, giving the player access to the name and backstory of each

computerized, nonplayer character, turning the "extras" into "people."[4]

With this context, killing or hacking game characters with names, faces, and stories is not as easy as it is in other games. Would players hack into the Webcam of a rich woman who had recently lost her daughter, and then steal money from her bank account to line their own character's pockets? To avoid getting arrested in a car chase, would players knowingly run over a civilian who is a tobacco executive but also volunteers his time and money at homeless shelters? The game makes players question what truly matters, which evils are "worse," and whether they would sacrifice themselves for others. Even the multiplayer version of the game allows players to hack into another *real* player's game, giving them the option to "kill" a real player's character. In *Watch Dogs*, players determine their own morality and act on it—and as in real life, there are consequences for these decisions. ◢
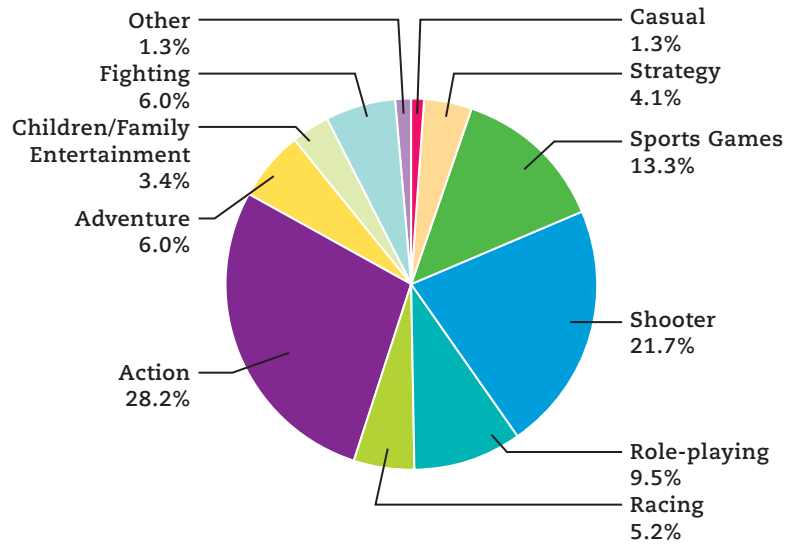
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FIGURE 3.1

TOP VIDEO GAME GENRES BY UNITS SOLD, 2014

Data from: Entertainment Software Association, "Essential Facts about the Computer and Video Game Industry," 2015.

Note: Percentages were rounded.

Other 1.3%
Fighting 6.0%
Children/Family Entertainment 3.4%
Adventure 6.0%
Action 28.2%
Racing 5.2%
Role-playing 9.5%
Shooter 21.7%
Sports Games 13.3%
Strategy 4.1%
Casual 1.3%

are many hybrid forms, but the major gameplay genres are discussed in the following sections. (See Figure 3.1 for a breakdown of top video game genres.)

Action and Shooter Games

Usually emphasizing combat-type situations, **action games** ask players to test their reflexes and to punch, slash, shoot, or throw as strategically and accurately as possible so as to make their way through a series of levels. Some action games feature hand-to-hand combat (*Street Fighter*, *Marvel vs. Capcom*); others feature more sophisticated weaponry and obstacles, such as bladed spears against groups of enemy combatants (*Hidden Blade*, *Bushido Blade*). Shooter games offer a selection of guns and missiles for obliterating opponents.

Most *shooter games* have a **first-person shooter (FPS)** perspective, which allows players to feel as though they are actually holding the weapon and to feel physically immersed in the drama. (See Table 3.1 for more on major video game conventions.) *Doom*, for example, released in 1993, was one of the first major FPS breakthroughs, requiring players to shoot their way through a military base on Mars's moon, killing the demons from Hell first using a pistol, then moving up to a chainsaw, shotgun, chain gun, rocket launcher, plasma rifle, and finally the coveted BFG 9000, all the while negotiating pits of toxic slime and locating the "exit door" that leads to the next level. *Halo*, Microsoft's impressive launch title for the Xbox in 2001, has become the top FPS game of all time. In the *Halo* series (the fifth sequel was released in 2015), players assume the identity of "Master Chief," a super-soldier living in the twenty-sixth century and fighting aliens, with the ultimate goal of uncovering secrets about the ring-shaped world, Halo. The weapons allotted to Master Chief all require the player to think strategically about how and when to launch them. Plasma weapons need time to cool between firings; guns need both ammunition and time to reload; fragmentation grenades bounce and detonate immediately; plasma grenades attach to the target before exploding. Players have to negotiate all these (and many more) variables as they move through various futuristic landscapes in order to unlock the secrets of Halo.

Maze games like *Pac-Man* also fit into the "action" genre, involving maze navigation to avoid or chase adversaries. Finally, *platform games* gained notoriety through the very successful *Super Mario Bros.* series. Using quick reflexes and strategic time management, players move Mario and Luigi between various platform levels of the Mushroom Kingdom in order to rescue
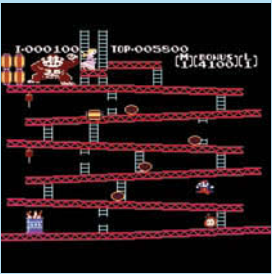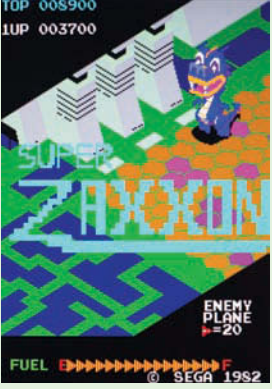
Convention	Description	Examples	Visual Representation
Avatars	Onscreen figures of player identification	Pac-Man, Mario from the *Mario Bros.* series, Sonic the Hedgehog, Link from *Legend of Zelda*	
Bosses	Powerful enemy characters that represent the final challenge in a stage or the entire game	Ganon from the *Zelda* series, Hitler in *Castle Wolfenstein*, Dr. Eggman from *Sonic the Hedgehog*, Mother Brain from *Metroid*	
Vertical and Side Scrolling	As opposed to a fixed screen, scrolling that follows the action as it moves up, down, or sideways in what is called a "tracking shot" in the cinema	Platform games like *Jump Bug*, *Donkey Kong*, and *Super Mario Bros.*; also integrated into the design of *Angry Birds*	
Isometric Perspective *(or Three-Quarters Perspective)*	An elevated and angled perspective that enhances the sense of three-dimensionality by allowing players to see the tops and sides of objects	*Zaxxon*, *StarCraft*, *Civilization*, and *Populous*	
First-Person Perspective	Presents the gameplay through the eyes of your avatar	First-person shooter (FPS) games like *Quake*, *Doom*, *Halo*, and *Call of Duty*	
Third-Person Perspective *(or Over-the-Shoulders Perspective)*	Enables you to view your heroic avatar in action from an external viewpoint	*Tomb Raider*, *Assassin's Creed*, and the default viewpoint in *World of Warcraft*	

(top to bottom) © Jamaway/Alamy; © Jamaway/Alamy; © Jamaway/Alamy; © ArcadeImages/Alamy; KRT/Newscom; KRT/Newscom

Princess Toadstool (later called Princess Peach) from Bowser. Action and shooter games are the best-selling game genres, accounting for nearly 50 percent of all game units sold.[17]

Adventure Games

Developed in the 1970s, **adventure games** involve a type of gameplay that is in many ways the opposite of action games. Typically nonconfrontational in nature, adventure games such as *Myst* require players to interact with individual characters and the sometimes-hostile environment in order to solve puzzles. In the case of *Myst* (released in 1991), the player is "the Stranger" who travels to different worlds and finds clues to solve various puzzles that, if solved correctly, lead to the "deserted" island of Myst. The genre peaked in popularity in 1993 and has spawned derivative genres, such as *action-adventure* (*Zelda, Metroid*) and *survival horror* games (*Resident Evil*), which are inspired by horror fiction.

Role-Playing Games

Role-playing games (RPGs) are typically set in a fantasy or sci-fi world in which each player (there can be multiple players in a game) chooses to play as a character that specializes in a particular skill set (such as magic spells or "finesse"). Players embark on a predetermined adventure and interact with the game's other inhabitants and each other, making choices throughout the game that bring about various diverse outcomes. *Neverwinter Nights* (2002), for example, challenges its players to collaboratively collect four Waterdhavian creatures needed to stop the Wailing Death plague, defeat the cult that is spreading the plague, and finally thwart an attack on the city of Neverwinter. The game is derived from *Dungeons & Dragons*, one of the most popular face-to-face, paper-and-pencil role-playing games. More complex role-playing games, like the *Final Fantasy* series, involve branching plots and changing character destinies. MMORPGs are obviously a subgenre of this game category. Sandbox (or open-world) RPGs, such as the *Grand Theft Auto* series and *Minecraft*, tend to offer the greatest leeway in how players may roam through a game's environment and create their own narratives. Other subgenres, such as MOBA games (multiplayer online battle arena games, which can combine RPG elements with real-time strategy; see below), make up some of the most successful digital games on the market. A good example is *League of Legends*, a free-to-play PC game in which players control "champions" who gain levels by winning player-versus-player battles against opposing champions. The game has become immensely popular, with more than 27 million players worldwide each day, and has spawned university leagues and live tournaments in which top players from around the world compete for large cash prizes.[18]

Strategy and Simulation Games

Strategy video games often involve military battles (real or imaginary) and focus on gameplay that requires careful thinking and skillful planning to achieve victory. Unlike FPS games, the perspective in **strategy games** is omniscient, with the player surveying the entire "world," or playing field, and making strategic decisions—such as building bases, researching technologies, managing resources, and waging battles—that will make or break this world. No doubt the most popular *real-time strategy* (*RTS*) game is Blizzard's *StarCraft*, which is played competitively throughout South Korea and televised to large audiences. Taking place during the twenty-sixth century in a distant part of the Milky Way galaxy, *StarCraft* involves three races (one human) that are at war with one another. To develop better strategic advantages, players download and memorize maps, study up on minute game details (such as race characteristics), and participate in *StarCraft*-centered advice boards.

Like strategy games, **simulation games** involve managing resources and planning worlds, but these worlds are typically based in reality. A good example is *SimCity*, which asks players to build a city given real-world constraints, such as land-use zoning (commercial, industrial,

residential), tax rates (to tax or not to tax), and transportation (buses, cars, trams). A player may also face unanticipated natural disasters, such as floods or tornadoes. Another example is *The Oregon Trail*, an educational simulation game that aims at reproducing the circumstances and drastic choices faced by white settlers traveling the two-thousand-mile journey from Independence, Kansas, to the Willamette Valley in Oregon. Throughout the game, players make choices to help their ox-driven wagon parties survive numerous potential horrors, including measles, dysentery, typhoid, cholera, snakebites, drowning, physical injuries, floods, mountains, heat, and cold, all the while maintaining provisions and predicting weather conditions. First developed by educators in 1971, *The Oregon Trail* has been played by millions of students.

Casual Games

This category of gaming, which encompasses everything from *Minesweeper* to *Angry Birds* to *Words with Friends*, includes games that have very simple rules and are usually quick to play. The historical starting point of **casual games** was 1989, when the game *Tetris* came bundled with every new Game Boy (Nintendo). *Tetris* requires players to continuously (frantically, for some) rotate colored blocks and fit them into snug spaces before the screen fills up with badly stacked blocks. There is no story to *Tetris*, and no real challenge other than mastering the rather numbing pattern of rotating and stacking, a process that keeps getting faster as the player achieves higher levels. For many people, the ceaseless puzzle is like a drug: Millions of people have purchased and played *Tetris* since its release. Today, *Tetris* has given way to *Angry Birds*, *Candy Crush Saga*, and other such games that have exploded in popularity due in large part to the rise in mobile devices.

Sports, Music, and Dance Games

"There is apparently a video game for every sport except for competitive mushroom picking," commented a *Milwaukee Journal* editorial in 1981.[19] Today, there really does seem to be a game for every sport. Gaming consoles first featured 3-D graphics in the early to mid-1990s with the arrival of Sega Saturn and Sony's PlayStation in 1994. Today's game technology—with infrared motion detectors, accelerometers (devices that measure proper acceleration), and tuning fork gyroscopes (devices that determine rotational motion)—allows players to control their avatar through physical movements, making the 3-D sports game experience even more realistic. Players in a soccer game, for example, might feel as though they are in the thick of things, kicking, dribbling, shooting, and even getting away with a foul if referees aren't watching. In sports games, players engage in either competitive gameplay (player versus player) or cooperative gameplay (two or more teammates working together against the artificial intelligence, or AI, opponents within the game).

One of the most consistently best-selling sports games is *Madden NFL*, which is based on famed NFL football player and former coach John Madden. Among the game's realistic features are character collisions, with varying speeds and trajectories that differ based on player control; sophisticated playbooks and player statistics; and voice commentary, which allows players to hear the game as if it were a real TV broadcast. With Xbox Kinect functionality, players can even select and alter screen actions with the power of their own voice (*they* are Madden, screaming from the sidelines).

Other experiential games tie into music and dance categories. *Rock Band*, developed by Harmonix Systems and published by Mad Catz, allows up to four players to simulate the popular rock band performances of fifty-eight songs—from the Pixies and OK Go to Black Sabbath and the Rolling Stones—as well as more than fourteen hundred additional downloadable songs for $1.99 apiece. Each instrument part (lead guitar, bass, drums, and vocal) can be played at one of four difficulty levels (Easy, Medium, Hard, and Expert), and if players don't keep up, they "fail" out of the song, and their instruments are muted. The gameplay is

Gautier Stephane/Sagaphoto.com/Alamy

▲

THE *JUST DANCE* SERIES has become a popular experiential game; it has also provided a new revenue stream for the music industry, which can license songs for use with the game.

derivative of *Guitar Hero* (vertical scrolling, colored music notes, and karaoke-like vocals), but the experience of *Rock Band*—with four players; a variety of venues, from clubs to concert halls; and screaming fans (who are also prone to boo)—is far more "real." Dance-oriented video games, such as *Dance Dance Revolution* and *Just Dance*, use motion-detecting technology and challenge players to match their rhythm and dance moves to figures on the screen.

Communities of Play: Inside the Game

Virtual communities often crop up around online video games and fantasy sports leagues. Indeed, players may get to know one another through games without ever meeting in person. They can interact in two basic types of groups. **PUGs** (short for "pick-up groups") are temporary teams usually assembled by matchmaking programs integrated into the game. The members of a PUG may range from elite players to **noobs** (clueless beginners) and may be geographically and generationally diverse. PUGs are notorious for harboring ninjas and trolls—two universally despised player types (not to be confused with ninja or troll avatars). **Ninjas** are players who snatch loot out of turn and then leave the group; **trolls** are players who delight in intentionally spoiling the gaming experience for others.

Because of the frustration of dealing with noobs, ninjas, and trolls, most experienced players join organized groups called **guilds** or **clans**. These groups can be small and easygoing or large and demanding. Guild members can usually avoid PUGs and team up with guildmates to complete difficult challenges requiring coordinated group activity. As the terms *ninja*, *troll*, and *noob* suggest, online communication is often encoded in gamespeak, a language filled with jargon, abbreviations, and acronyms relevant to gameplay. The typical codes of text messaging (OMG, LOL, ROFL, and so forth) form the bedrock of this language system.

Players communicate in two forms of in-game chat—voice and text. Xbox LIVE, for example, uses three types of voice chat that allow players to socialize and strategize, in groups or one-on-one, even as they are playing the game. Other in-game chat systems are text-based, with chat channels for trading in-game goods or coordinating missions within a guild. These methods of communicating with fellow players who may or may not know one another outside the game create a sense of community around gameplay. Some players have formed lasting friendships or romantic relationships through their video game habit. Avid gamers have even held in-game ceremonies, like weddings or funerals—sometimes for game-only characters, sometimes for real-life events.

Communities of Play: Outside the Game

Communities also form outside games, through Web sites and even face-to-face gatherings dedicated to electronic gaming in its many forms. This phenomenon is similar to the formation of online and in-person groups to discuss other mass media, like movies, TV shows, or books. These communities extend beyond gameplay, enhancing the social experience gained through the games.

Collective Intelligence

Mass media productions are almost always collaborative efforts, as is evident in the credits for movies, television shows, and music recordings. The same goes for digital games. But what is unusual about game developers and the game industry is their interest in listening to gamers

and their communities in order to gather new ideas and constructive criticism and to gauge popularity. Gamers, too, collaborate with one another to share shortcuts and "cheats" to solving tasks and quests, and to create their own modifications to games. This sharing of knowledge and ideas is an excellent example of **collective intelligence**. French professor Pierre Lévy coined the term *collective intelligence* in 1997 to describe the Internet, "this new dimension of communication," and its ability to "enable us to share our knowledge and acknowledge it to others."[20] In the world of gaming, where users are active participants (more than in any other medium), the collective intelligence of players informs the entire game environment.

For example, collective intelligence (and action) is necessary to work through levels of many games. In *World of Warcraft*, collective intelligence is highly recommended. According to the beginner's guide, "If you want to take on the greatest challenges *World of Warcraft* has to offer, you will need allies to fight by your side against the tides of darkness."[21] Players form guilds and use their play experience and characters' skills to complete quests and move to higher levels. Gamers also share ideas through chats and wikis, and those looking for tips and cheats provided by fellow players need only Google what they want. The largest of the sites devoted to sharing collective intelligence is the *World of Warcraft* wiki (www.wowwiki.com). Similar user-generated sites are dedicated to a range of digital games, including *Age of Conan*, *Assassin's Creed*, *Grand Theft Auto*, *Halo*, *Mario*, *Metal Gear*, *Pokémon*, *Sonic the Hedgehog*, and *Spore*.

The most advanced form of collective intelligence in gaming is **modding**, slang for "modifying game software or hardware." In many mass communication industries, modifying hardware or content would land someone in a copyright lawsuit. In gaming, modding is often encouraged, as it is yet another way players become more deeply invested in a game, and it can improve the game for others. For example, *Counter-Strike*, a popular first-person shooter game, is a mod of the game *Half-Life*. *Half-Life* is a critically acclaimed science-fiction first-person shooter game (a physicist fighting aliens), released by Valve Corporation in 1998 for PCs and later for PlayStation. The developers of *Half-Life* encouraged mods by including software development tools with it. By 1999, *Counter-Strike*, in which counterterrorists fight terrorists, emerged as the most popular among many mods, and Valve formed a partnership with the game's developers. *Counter-Strike* was released to retailers as a PC game in 2000 and an Xbox game in 2004, eventually selling more copies than *Half-Life*. Today, many other games, such as *The Elder Scrolls*, have active modding communities.

Game Sites

Game sites and blogs are among the most popular external communities for gamers. IGN (owned by Ziff Davis), GameSpot (owned by CBS), GameTrailers (MTV Networks/Viacom), and Kotaku (Gawker Media) are four of the leading Web sites for gaming. GameSpot and IGN are apt examples of giant industry sites, each with sixteen to nineteen million unique, mostly male, eighteen- to thirty-four-year-old visitors per month—a desirable demographic to major media corporations. Penny Arcade is perhaps the best known of the independent community-building sites. Founded by Jerry Holkins and Mike Krahulik, the site started out as a Webcomic focused on video game culture. It has since expanded to include forums and a Web series called *PA* that documents behind-the-scenes work at Penny Arcade. Penny Arcade organizes a live festival to celebrate gamers and gamer culture called the Penny Arcade Expo, as well as a children's charity called Child's Play.

Conventions

In addition to online gaming communities, there are conventions and expos where video game enthusiasts can come together in person to test out new games and other new products, play old games in competition, and meet video game developers. One of the most significant is the

Electronic Entertainment Expo (E3), which draws more than 45,000 industry professionals, investors, developers, and retailers to its annual meeting. E3 is the place where the biggest new game titles and products are unveiled, and it is covered by hundreds of journalists, televised on Spike TV, and streamed to mobile devices and Xbox consoles.

The Penny Arcade Expo (PAX) is a convention created by gamers for gamers, held each year in Seattle and Boston. One of its main attractions is the Omegathon, a three-day elimination game tournament in which twenty randomly selected attendees compete in games across several genres, culminating in the championship match at the convention's closing. Other conventions include BlizzCon (operated by Blizzard Entertainment to feature developments to their games, including their top franchises: *World of Warcraft*, *Diablo*, and *StarCraft*) and the Tokyo Game Show, the world's largest gaming convention, with more than 200,000 attendees annually.

Damian Dovarganes/AP Images

THE ELECTRONIC ENTERTAINMENT EXPO hosts an enormous variety of game developers and related companies (as well as performances from musicians such as Rita Ora, Drake, and deadmau5) at its annual gathering. Here, Microsoft shows off a specially prepared version of its popular *MineCraft* game designed for its augmented-reality HoloLens project.

Trends and Issues in Digital Gaming

The ever-growing relationship between video games and other media, such as books, movies, and television, leaves no doubt that digital gaming has a permanent place in our culture. Like other media, games are a venue for advertising. A virtual billboard in a video game is usually more than just a digital prop; as in television and the movies, it's a paid placement. And like other media, games are a subject of social concern. Violent and misogynistic content has from time to time spurred calls for more regulation of electronic games. But as games permeate more aspects of culture and become increasingly available in nonstandard formats and genres, they may also become harder to define and, therefore, regulate.

Electronic Gaming and Media Culture

Video Games at the Movies
Alice, the hero of the *Resident Evil* film series, fights zombies in this clip. **Discussion:** In what ways does this clip replicate the experience of game play? In what ways is a film inherently different from a game?

Beyond the immediate industry, electronic games have had a pronounced effect on media culture. For example, fantasy league sports have spawned a number of draft specials on ESPN as well as a regular podcast, *Fantasy Focus*, on ESPN Radio. Fantasy football has even inspired an adult comedy called *The League* on the cable channel FXX. In the case of the Web site Twitch, streaming and archived video of digital games being played *is* the content. In just three years, the site became so popular that Amazon bought it for almost $1 billion to add to its collection of original video programming.

Like television shows, books, and comics before them, electronic games have inspired movies, such as *Lara Croft: Tomb Raider* (2001), the *Resident Evil* series (2001–present, including a sixth installment due in 2016), and *Need for Speed* (2014). *Tron* (1982), a movie inspired by video games, spurred an entire franchise of books, comic books, and arcade and console video games in the 1980s; and it was revived a generation later with an Xbox LIVE game in 2008, a movie sequel (*Tron: Legacy*) in 2010, and a Disney television series. For many Hollywood blockbusters today, a video game spin-off is a must-have item. Box-office hits like *Transformers: Dark of the Moon* (2011), *Brave* (2012), *The Amazing Spider-Man 2* (2014), and *Maleficent* (2014) all have companion video games for consoles, portable players, or mobile devices.

Books and electronic games have also had a long history of influencing each other. Japanese manga and anime (comic books and animation) have also inspired video games, such as *Akira*, *Astro Boy*, and *Naruto*. *Batman: Arkham Asylum*, a top video game title introduced in 2009, is based closely on the *Batman* comic-book stories, while *The Witcher*, an action role-playing game for PCs, is based on Polish fantasy writer Andrzej Sapkowski's saga, *The Witcher*. Perhaps the most unusual link between books and electronic games is the *Marvel vs. Capcom* series. In this series, characters from Marvel comic books (Captain America, Hulk, Spider-Man, Wolverine) battle characters from Capcom games like *Street Fighter* and *Resident Evil* (Akuma, Chun-Li, Ryu, Albert Wesker).

HIGH-PROFILE MOVIES LIKE *MINIONS* (2015) inspire an increasing number of game tie-ins. In the past, these games would often trail their movie counterparts by months; for *Minions*, simpler mobile games were released concurrently with the movie. The process was reversed in 2016 with the release of a movie based on the *Angry Birds* mobile game.

Electronic Gaming and Advertising

Commercialism is as prevalent in video games as it is in most entertainment media. **Advergames**, like television's infomercials or newspapers and magazines' advertorials, are video games created for purely promotional purposes. The first notable advergame debuted in 1992, when Chester Cheetah, the official mascot for Cheetos snacks, starred in two video games for the Sega Genesis and Super Nintendo systems—*Chester Cheetah: Too Cool to Fool* and *Chester Cheetah: Wild Wild Quest*. In late 2006, Burger King sold three advergame titles for Xbox and Xbox 360 consoles for $3.99 each with value-meal purchases. One title, *Sneak King*, required the player to have the Burger King mascot deliver food to other characters before they fainted from hunger. More recent is the innovative interactive Web commercial "Magnum Pleasure Hunt," for gourmet Magnum chocolate ice cream bars. In this platform game, the user manipulates the constantly jogging, barefoot "Magnum Girl" up and over the game's Internet-based environments (such as Bing travel pages, YouTube videos, and luxury hotel Web sites). A player earns points by strategically timing Magnum Girl's jumps so that she connects with—or consumes—the game's many chocolate bonbons, and Magnum's specialty chocolate bar is the final reward for Magnum Girl's (and the player's) hard work. **In-game advertisements** are more subtle; ads are integrated into the game as billboards, logos, or storefronts (e.g., a Farmers Insurance airship floating by in *FarmVille* or Dove soap spas appearing in *The Sims Social*), or advertised products appear as components of the game (e.g., in the game *Splinter Cell: Chaos Theory*, a large glowing billboard for Axe deodorant becomes an obstacle for the player to overcome).[22]

Some in-game advertisements are static, which means the ads are permanently placed in the game. Other in-game ads are dynamic, which means the ads are digitally networked and can be altered remotely, so agencies can tailor them according to release time, geographical location, or user preferences. A movie ad, for example, can have multiple configurations to reflect the movie's release date and screening markets. Advertisers can also record data on users who come in contact with a dynamic ad, such as how long they look at it, from what angle, and how often, and can thus determine how to alter their ad campaigns in the future. The Xbox Kinect has taken dynamic advertising one step further with its newest consoles, enabling players to engage with the in-game ads using motion and voice control to learn more about a product.

Google's game advertising strategy, launched in 2008, is to place increasing numbers of ads in well-known social game titles, like *Frogger* and *Dance Dance Revolution*—an indication of the tremendous potential growth in social gaming. All in-game advertising is estimated to generate $7.2 billion in global revenue in 2016.[23]

Addiction and Other Concerns

Though many people view gaming as a simple leisure activity, the electronic gaming industry has sparked controversy. Parents, politicians, the medical establishment, and media scholars have expressed concern about the addictive quality of video games, especially MMORPGs, and have raised the alarm about violent and misogynistic game content—standard fare for many of the most heavily played games.

Addiction

No serious—and honest—gamer can deny the addictive qualities of electronic gaming. In fact, an infamous *South Park* episode from 2006 ("Make Love, Not Warcraft") satirized the obsessive, addictive behavior of video game playing. In a 2011 study of more than three thousand third through eighth graders from Singapore, one in ten were considered pathological gamers, meaning that their gaming addiction was jeopardizing multiple areas of their lives, including school, social and family relations, and psychological well-being. Indeed, the more the children were addicted, the more prone they were to depression, social phobias, and increased anxiety, which led to poorer grades in school. Singapore's high percentage of pathological youth gamers is in line with numbers reported in other countries, including the United States, where studies found 8.5 percent of gamers to be addicted. In China, the number is 10.3 percent, and in Germany, 11.9 percent.[24]

Gender is a factor in game addiction: A 2013 study found that males are much more susceptible to game addiction. This makes sense, given that the most popular games—action and shooter games—are heavily geared toward males.[25] These findings are also not entirely surprising, given that many electronic games are addictive not by accident but by design. Just as habit formation is a primary goal of virtually every commercial form of electronic media, from newspapers to television to radio, cultivating compulsiveness is the aim of most game designs. From recognizing high scores to incorporating various difficulty settings (encouraging players to try easy, medium, and hard versions) and levels that gradually increase in complexity, designers provide constant in-game incentives for obsessive play.

This is especially true of multiplayer online games—like *Halo*, *Call of Duty*, and *World of Warcraft*—that make money from long-term engagement by selling expansion packs or charging monthly subscription fees. These games have elaborate achievement systems with hard-to-resist rewards that include military ranks like "General" or fanciful titles like "King Slayer," as well as special armor, weapons, and mounts (creatures your avatar can ride, including bears, wolves, or even dragons), all aimed at turning casual players into habitual ones.

This strategy of promoting habit formation may not differ from the cultivation of other media obsessions, like watching televised sporting events. Even so, real-life stories, such as that of the South Korean couple whose three-month-old daughter died of malnutrition while the negligent parents spent ten-hour overnight sessions in an Internet café raising a virtual daughter, bring up serious questions about video games and addiction.[26] South Korea, one of the world's most Internet-connected countries, is already sponsoring efforts to battle Internet addiction, along with China, the Netherlands, and Australia.

Meanwhile, industry executives and others cite the positive impact of digital games, such as the mental stimulation and educational benefits of games like *SimCity*, the health benefits of *Wii Fit*, and the socially rewarding benefits of playing games together as a family or with friends.

Violence and Misogyny

The Entertainment Software Association (ESA)—the main trade association of the gaming industry—likes to point out that nearly half of game players are women, that nearly

three-quarters of games sold are rated in the family- and teen-friendly categories, and that the average age of a game player is thirty. While these statements are true, they also mask a troubling aspect of some of game culture's most popular games: their violent and sexist imagery.

Most games involving combat, guns, and other weapons are intentionally violent, with representations of violence becoming all the more graphic as game visuals reach cinematic hyperrealism. The most violent video games, rated M for "Mature," often belong to the first-person shooter, dark fantasy, or survival horror genres (or a combination of all three) and cast players in a variety of sinister roles—serial killers, mortal combat soldiers, chain-gun-wielding assassins, nut jobs going "postal," father-hating sons, mutated guys out for revenge, not-quite-executed death-row inmates, and underworld criminals (to name a few)—in which they earn points by killing and maiming their foes (sometimes monsters but often "ordinary people") through the most horrendous means possible. In this genre of games, violence is a celebration, as is clear from one Top 10 list featuring the most "delightfully violent video games of all time."[27]

That some games can be violent and misogynistic is not a point of dispute. But the possible effects of such games have been debated for years, and video games have been accused of being a factor in violent episodes, such as the Columbine High School shootings in 1999. Earlier research linked playing violent video games to aggressive thoughts or hostility, but those effects don't necessarily transfer to real-world environments. Instead, more recent studies suggest that the personality traits of certain types of players should be of greater concern than the violence of video games. For example, a study in the *Review of General Psychology* noted that individuals with a combination of "high neuroticism (e.g., easily upset, angry, depressed, emotional, etc.), low agreeableness (e.g., little concern for others, indifferent to others' feelings, cold, etc.), and low conscientiousness (e.g., break rules, don't keep promises, act without thinking, etc.)" are more susceptible to the negative outcomes measured in studies of violent video games.[28] For the vast majority of players, the study concluded, violent video games have no adverse effects.

There is less research on misogyny (hatred of women) in video games. One of the most extreme game narratives is from *Grand Theft Auto 3*, in which male characters can pick up female prostitutes, pay money for sex, get an increase in player "health," and then beat up or kill the hooker to get their money back. Although women are close to half of the digital game audience in the United States, it's likely that many aren't engaged by this story. The source of the problem may be the male insularity of the game development industry—for reasons that are unclear, few women are on the career path to be involved in game development. According to the National Center for Women & Information Technology, "Women hold 56% of all professional occupations in the U.S. workforce, but only 25% of IT occupations." And even as the digital game industry gets bigger, the impact of women gets smaller. "In 2009, just 18% of undergraduate Computing and Information Sciences degrees were awarded to women; in 1985, women earned 37% of these degrees."[29] (See "Global Village: Global Controversy: The Gender Problem in Digital Games" on pages 96–97 for more on violence and misogyny in video games.)

GAMES IN THE *GRAND THEFT AUTO* series typically receive a rating of "Mature," indicating they should not be sold to players under seventeen. However, the ratings do not distinguish between overall game violence and misogynistic attitudes.
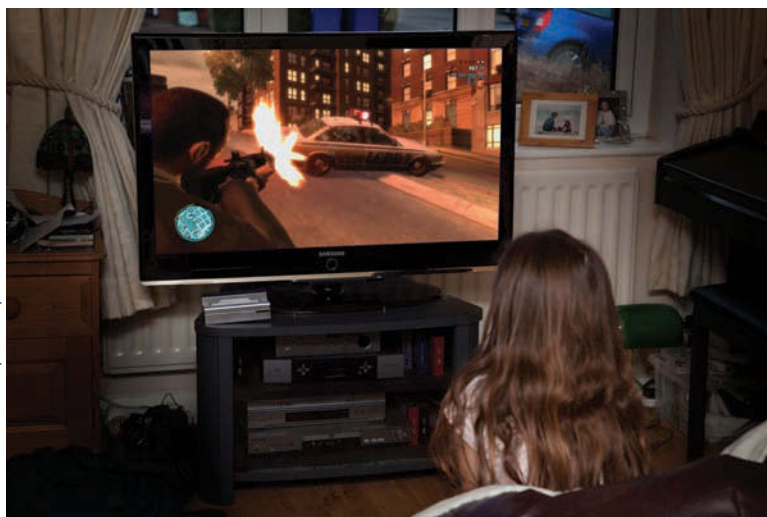
David J. Green–Lifestyle/Alamy

Global Controversy: The Gender Problem in Digital Games

Anita Sarkeesian has a well-documented love of playing video games, from *Mario Kart* and *Rock Band* to *Plants vs. Zombies* and *Half-Life 2*. But that hasn't stopped her from becoming one of the most outspoken—and targeted—critics of how video games depict and treat women. In 2012, a successful Kickstarter campaign helped her launch her *Tropes vs. Women in Video Games* video series. As Sarkeesian explained, she was moved to examine video games because as a girl growing up and playing the games, she saw that so many of the troubling stereotypes about women were enmeshed in games and gaming culture.

"The games often reinforce a similar message, overwhelmingly casting men as heroes and relegating women to the roles of damsels, victims or hypersexualized playthings," Sarkeesian said. "The notion that gaming was not for women rippled out into society, until we heard it not just from the games industry, but from our families, teachers and friends. As a consequence, I, like many women, had a complicated, love–hate relationship with gaming culture."[1]

"Love–hate" is probably also a good way to describe the reaction to Sarkeesian's critique of games. On the one hand, she has gained critical acclaim and visibility for her videos and writing, appearing in the *New York Times*, *Businessweek*, and *Rolling Stone*, as well as on *The Colbert Report*. On the other hand, since she began releasing her videos on digital games, she has been the target of a global campaign of incredibly graphic and violent threats of rape, torture, and murder on social media. This ongoing online harassment reached a new low in the fall of 2014, when another of her Feminist Frequency video releases coincided with what has become known as the #GamerGate controversy.

The story surrounding the event that ostensibly touched off the #GamerGate firestorm began when a computer programmer, Eron Gjoni, had a bad breakup with game designer Zoe Quinn. Gjoni then went online with their breakup in a 9,425-word blog post, claiming that Quinn had had an affair with a writer at Kotaku, an influential gamers' Web site that features information about a variety of games. The post went viral (as Gjoni

intended). Male gamers who believed Gjoni assumed that the affair had led to a favorable review of Quinn's most recent game on Kotaku, pointing to this as indicative of a larger trend of shady journalistic ethics in the gaming press. They organized their criticisms under the hashtag #GamerGate. Very quickly, however, any supposed concerns over journalistic ethics were overshadowed by those focused on "slut-shaming" Quinn. As *Boston* magazine said, "Zoe Quinn's ex-boyfriend was obsessed with destroying her reputation—and thousands of online strangers were eager to help."[2] The misogynistic attacks by supporters of #GamerGate exploded into a global barrage of anonymous threats and attacks on a number of high-profile women in the gaming industry, including Sarkeesian, game developer Brianna Wu, and journalists Katherine Cross and Maddy Myers. A Reddit discussion board identified #GamerGate supporters in nearly every country around the world.[3]

It was at this point that Sarkeesian (and other critics) spoke up and pointed out that the deeply disturbing threats that female gamers and critics were experiencing proved her point about a deeper problem in the gaming culture, which in turn reflected broader cultural misogyny. In response to this criticism, many supporters of #GamerGate started behaving even worse.

Soon Sarkeesian and others weren't just receiving anonymous and graphic threats in places like Twitter, disturbing enough on its own, but found themselves victims of doxing and swatting. To "dox" someone means to steal private or personal information (from addresses
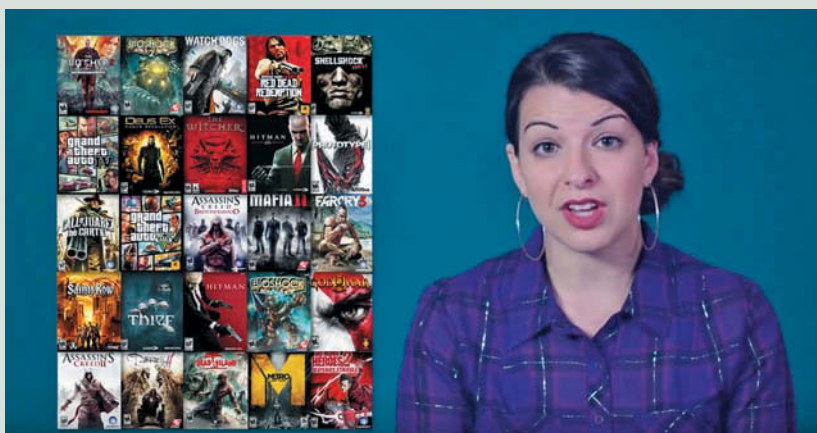
and personal phone numbers to social security and credit card information in some cases) and make it public. To "swat" someone means to call in an anonymous tip to a police department where a victim lives in an attempt to provoke a raid—particularly by an armed SWAT team—on the person's home. In one such incident, approximately twenty Portland police officers were dispatched to the scene of a supposed armed hostage situation when the target of the hoax saw someone bragging about it on a message board and called the police before the situation could escalate.[4] Quinn and Wu both had to flee their homes after being doxed and receiving threats that identified where they lived.

In another case, before a scheduled speech by Sarkeesian at Utah State University, an anonymous person threatened to carry out the biggest school shooting ever if the video game critic spoke. Sarkeesian canceled her speech after campus police said Utah's gun laws prohibited them from turning away any audience member who showed up with a gun. Sarkeesian went into hiding for a time, afraid to return to her home because of the various threats. Her Wikipedia page has been vandalized several times with pornographic pictures, and her Feminist Frequency Web site has been the target of Denial of Service attacks.

But Sarkeesian is far from giving up. In an ironic twist, the hatred leveled at the critic has brought many supporters her way as well. For example, in the first quarter of 2014, her crowdfunded Feminist Frequency Web site received $1,500 in donations. In the last quarter of 2014 (after #GamerGate really started heating up), donors sent almost $400,000 to Feminist Frequency (which is now officially a nonprofit organization dedicated to providing commercial-free videos critiquing the portrayal of women in video games and mass media). Sarkeesian also quadrupled Feminist Frequency's followers on Twitter to a quarter of a million by the end of 2014.[5]

Moreover, because the gaming news media was largely ignoring the misogyny of #GamerGate, Sarkeesian, Wu, and others began to speak out to mainstream news organizations, and coverage spread to Canada, the United Kingdom, Sweden, and elsewhere. With the #GamerGate controversy subject to greater international media scrutiny, the discussion began to change. "We finally shamed [the gaming news media] into finally addressing #GamerGate," Wu said in a university speech. After being subjected to more than fifty death threats and constant bullying, and still feeling "damaged from this experience," Wu perseveres. "We are making this better. We took #GamerGate and we turned it around in its tracks."[6]

Media Literacy and the Critical Process

First-Person Shooter Games: Misogyny as Entertainment?

Historical first-person shooter games are a significant sub-genre of action games, the biggest-selling genre of the digital game industry. *Call of Duty: Modern Warfare 3* (set in a fictional WWIII) made $775 million in its first five days. And with thirteen million units sold by 2012, Rockstar Games' critically acclaimed *Red Dead Redemption* (*RDR*, set in the Wild West) was applauded for its realism and called a "tour de force" by the *New York Times*.[1] But as these games proliferate through our culture, what are we learning as we are launched back and forth in time and into the worlds of these games?

1 DESCRIPTION. *Red Dead Redemption* features John Madsen, a white outlaw turned federal agent, who journeys to the "uncivilized" West to capture or kill his old gang members. Within this game, gamers encounter breathtaking vistas and ghost towns with saloons, prostitutes, and gunslingers; large herds of cattle; and scenes of the Mexican Rebellion. Shootouts are common in towns and on the plains, and gamers earn points for killing animals and people. The *New York Times* review notes that "*Red Dead Redemption* is perhaps most distinguished by the brilliant voice acting and pungent, pitch-perfect writing we have come to expect from Rockstar."[2]

2 ANALYSIS. *RDR* may have "pitch-perfect writing," but a certain tune emerges. For example, African Americans and Native Americans are absent from the story line (although they were clearly present in the West of 1911). The roles of women are limited: They are portrayed as untrustworthy and chronically nagging wives, prostitutes, or nuns—and they can be blithely killed in front of sheriffs and husbands without ramifications. One special mission is to hogtie a nun or prostitute and drop her onto tracks in front of an oncoming train. One gamer in his popular how-to demo on YouTube calls this mission "the coolest achievement I've ever seen in a game."[3]

3 INTERPRETATION. *RDR* may give us a technologically rich immersion into the Wild West of 1911, but it relies on clichés to do so (macho white gunslinger as leading man, weak or contemptible women, vigilante justice). If the macho/misogynistic narrative possibilities and value system of *RDR* seem familiar, it's because the game is based on Rockstar's other video game hit, *Grand Theft Auto* (*GTA*), which lets players have sex with and then graphically kill hookers. *GTA* was heavily criticized for creating an "X-Rated wonderland" and was dubbed "Grand Theft Misogyny."[4] Indeed, Rockstar simply took the *GTA* engine and interface and overlaid new scenes, narratives, and characters, moving from the urban streets of Liberty City to American frontier towns.[5]

4 EVALUATION. The problem with *Red Dead Redemption* is its limited view of history, lack of imagination, and reliance on misogyny as entertainment. Since its gameplay is so similar to that of *GTA*, the specifics of time and place are beside the point— all that's left is killing and hating women. Video games are fun, but what effect do they have on men's attitudes toward women?

5 ENGAGEMENT. Talk to friends about games like *GTA*, *RDR*, and Rockstar's latest, *L.A. Noire*. (Set in 1940s Los Angeles, it also contains scenes with nudity and graphic violence against women.) Comment on blog sites about the ways some games can provide a mask for misogyny, and write to Rockstar itself (www.rockstargames .com), demanding less demeaning narratives regarding women and ethnic minorities.

Regulating Gaming

For decades, concern about violence in video games has led to calls for regulation. Back in 1976, an arcade game called *Death Race* prompted the first public outcry over the violence of electronic gaming. The primitive graphics of the game depicted a blocky car running down stick-figure Gremlins that, if struck, turned into grave markers. Described as "sick and morbid" by the National Safety Council, *Death Race* inspired a *60 Minutes* report on the potential psychological damage of playing video games. Over the next forty years, violent video games would prompt citizen groups and politicians to call for government regulation of electronic games' content.

In 1993, after the violence of *Mortal Kombat* and *Night Trap* attracted the attention of religious and educational organizations, Senator Joe Lieberman conducted a hearing that proposed federal regulation of the gaming industry. Following a pattern established in the movie and music industries, the gaming industry implemented a self-regulation system enforced by an industry panel. The industry founded the **Entertainment Software Rating Board (ESRB)** in 1994 to institute a labeling system designed to inform parents of sexual and violent content that might not be suitable for younger players. Publishers aren't required to submit their games to the ESRB for a rating, but many retailers will only sell rated games, so gamemakers usually consent to the process. To get a rating, the game companies submit scripts that include any dialogue and music lyrics, and also fill out a questionnaire to describe the story and identify possibly offensive content.[30] Currently the ESRB sorts games into six categories: EC (Early Childhood), E (Everyone), E 10+, T (Teens), M (17+), and AO (Adults Only 18+).

In the most recent effort to regulate video games, California passed a law in 2005 to fine stores $1,000 for selling video games rated M or AO to minors. In 2011, the U.S. Supreme Court struck down the law in a 7–2 decision, setting a difficult precedent for the establishment of other laws regulating electronic games.

The Future of Gaming and Interactive Environments

Gaming technology of the future promises a more immersive and portable experience that will touch even more aspects of our lives. The Wii has been successful in harnessing more interactive technology to attract nongamers with its motion-controlled games. Nintendo's latest Wii U system goes a step further—in one game, the controller serves as a shield to block virtual arrows shot by pirates on the TV screen. Microsoft's motion-sensing Xbox Kinect has been a hit since its introduction in late 2010, and with Avatar Kinect, users can control their avatar's motions as the Kinect senses even small physical gestures. In 2012, Sony released its SOEmote facial-tracking and voice-font software with its popular *Everquest II* game, enabling players to give their facial expressions and voices to their avatars. The anticipated release of the Oculus Rift virtual reality headset could further deepen the immersive play of games.

Video games in the future will also continue to move beyond just entertainment. The term *gamification* describes how interactive game experiences are being embedded to bring competition and rewards to everyday activities.[31] Games are already used in workforce training, for social causes, in classrooms, and as part of multimedia journalism. For example, to accompany a news report about texting while driving, the *New York Times* developed an interactive game, *Gauging Your Distraction*, to demonstrate the consequences of distractions (such as cell phones) on driving ability. All these developments continue to make games a larger part of our media experiences.

The Business of Digital Gaming

Today, about 72 percent of households play computer or video games. The entire U.S. video game market, including portable and console hardware and accessories, adds up to about $20.8 billion annually, with global sales reaching $111 billion in 2015. Thanks largely to the introduction of the Wii and mobile games, today's audience for games extends beyond the young-male gamer stereotype. Though the obsessive gamers who frequent GameSpot and IGN are largely youthful and male, the population of casual gamers has grown much more diverse.

According to the video and computer game industry's main trade group, the Entertainment Software Association, the average game player is thirty years old and has been playing games for thirteen years. Women constitute 52 percent of game players. Gamers play across a range of platforms: 51 percent of U.S. households have a video console, 43 percent play games on smartphones, and 37 percent play on a dedicated handheld player. Gamers are social, too: 62 percent of them play games with others, either in person or online.[32] These numbers speak to the economic health of the electronic gaming industry, which has proved recession-proof so far. Digital gaming companies can make money selling not just consoles and games but also online subscriptions, companion books, and movie rights.

The Ownership and Organization of Digital Gaming

For years, the two major components of the gaming industry have been console makers and game publishers. The biggest blockbuster games are still produced and distributed by the leading game publishers, and many are designed to be played on the leading game consoles connected to big television sets. At the same time, the emergence of game platforms on mobile devices and on social networks has expanded the game market and brought new game publishers into the field.

Console Makers

The video game console business is dominated by three major players: Nintendo, Sony, and Microsoft. Nintendo got its start manufacturing Japanese playing cards in 1889. After seventy-seven years, the playing card business was becoming less profitable, and Nintendo began venturing into toy production in the 1960s. By 1974, the toy business evolved into the company distributing Magnavox's *Odyssey* home video console. Nintendo would release its own video game console three years later. In the early 1980s, Nintendo had two major marketing successes. First, the company developed and released the very successful platform game *Donkey Kong* (1981), in which players help Jumpman rescue Lady from the giant ape, Donkey Kong. Developed for multiple consoles, the video game was the Japanese company's breakthrough into the U.S. console market. Second, Nintendo developed the Nintendo Entertainment System (NES) console, which reached U.S. markets in 1985 bundled with the *Super Mario Bros.* platform game. With this package, Nintendo set the standard for video game consoles, Mario and Luigi became household names, and *Super Mario Bros.* became the most successful video series for the next twenty-four years.

Sony, also headquartered in Japan, emerged after World War II as a manufacturer of tape recorders and radios (the name Sony is rooted in the Latin word *sonus*, meaning "sound"). Since then, Sony has been a major player in the consumer electronics industry, producing televisions, VCRs, computers, cameras, and, beginning in the mid-1990s, video game consoles. Its venture into video games came about because of a deal gone bad with Nintendo. Sony had been partnering with Nintendo to create an add-on device to Nintendo's NES that would control music CDs (hence the name they proposed: "play station"). When the partnership fell through, Sony went into direct competition with Nintendo, launching in 1994 the impressive PlayStation console, which doubled the microprocessor size introduced by Sega (from 16 bits to 32 bits) and played both full-motion and 3-D video. Described in the *New York Times* as the "CD-based video game machine," PlayStation was also capable of playing music CDs—a nice retort to Nintendo.[33]

Continuing the console battle, in 1996 Nintendo released Nintendo 64, a doubly powerful 64-bit microprocessor complete with even more realistic images and even clearer 3-D motion graphics. This launch created a buyer's frenzy—for the Nintendo 64 as well as for the *Super Mario 64* game **cartridge** that launched with the console, dubbed by critics "the best video

game ever."[34] Meanwhile, other console makers—such as Sega, Atari, and SNK—were trying to compete, sometimes making incredible technological leaps, like Sega's 128-bit Dreamcast, which came equipped with a built-in modem. Ultimately, these advancements were copied, and then overshadowed, by Nintendo and Sony products.

The main rivalry between Nintendo and Sony was more or less resolved by 1997, with Nintendo claiming the market for children up to age fourteen and Sony's PlayStation becoming the console of choice for serious young-adult gamers. By 1997, the newly broadened audience had created an impressive market for the video game industry worth $5.5 billion.[35] PlayStation 2, released in 2000, heightened this trend. As a masterpiece in console engineering, and through Sony's alliance with third-party game publishers who were churning out the world's most innovative titles (*Call of Duty*, *Final Fantasy*), PlayStation 2 would become the most successful console of all time.

And yet into this new world of serious gaming—so securely dominated by Sony PlayStation—came the computer software goliath Microsoft. "The machine, called Xbox," wrote *New York Times* technology writer John Markoff in 2000, "is both a technical tour de force by the world's largest software publisher and a shot fired across the bow of the giant Sony Corporation, which now dominates the $20 billion video game industry."[36] The Xbox, which represented a $500 million commitment from Microsoft, had many firsts: the first console to feature a built-in hard disk drive; the first to be connected to an online service (Xbox LIVE); and the first to have Dolby Digital sound, for a cinematic sound experience. While Xbox could not offer the arsenal of games that PlayStation gamers had access to, the console did launch with one particular game, *Halo*. Game critics and players immediately recognized this sci-fi first-person shooter game—now a multibillion-dollar franchise—as Microsoft's "killer app."[37]

Today, Sony's PlayStation 4 (2013), Microsoft's Xbox One (2013), and Nintendo's Wii U (2012) are the leading consoles, providing the most creative, interactive, hyperrealistic, and stimulating entertainments.

Game Publishers

As the video game industry moves away from consoles and toward streaming services, browsers, smartphones, and tablets, game publishers have had to adapt to technological innovations and predict future media trends, all while still offering good gameplay and stories. In some cases, the game-console makers are also the game publishers (sometimes making the game *proprietary*, meaning it only plays on that company's system). For example, Microsoft famously published its *Halo* game series to drive sales of the Xbox. Similarly, Sony publishes the *Uncharted* game series just for PlayStation, and Nintendo publishes *The Legend of Zelda* series solely for its gaming platforms.

More often, game publishers are independent companies, distributing games that play across multiple platforms. Sometimes the publishers are also the developers of the game—the people who write the actual code for the game. But publishers may also be just the distributors for the game developers (just as film studios may distribute the work of independent filmmakers). Two leading independent game publishing companies, Activision Blizzard and Electronic Arts, have been particularly good at adaptation and innovation, producing the most imaginative and ambitious titles and selling the most games across multiple platforms. King (*Candy Crush Saga*) and Rovio (*Angry Birds*) are two other major players, respectively dominating in social gaming and mobile gaming.

Activision Blizzard was created through the merging of Activision and Vivendi's Blizzard division in 2008. One half of the company—Activision—got its start in the 1970s as the first independent game developer and distributor, initially providing games for the Atari platform (before Activision, console makers like Atari created only proprietary games for their own systems). Activision was unique in that it rewarded its developers with royalty payments and name credits

on game box covers, something that hadn't yet been considered by other game publishing companies, which kept their developers anonymous. As a result, top game designers and programmers migrated to Activision, and Activision began to produce a number of top-selling games, including the *X-Men* series (2000–), the *Call of Duty* series (2003–), and *Guitar Hero* (2006–2011).

Meanwhile, Blizzard Entertainment, established in 1991 as an independent game publisher, has three famous franchises in game publishing: *Diablo* (1996–), *StarCraft* (1998–), and *World of Warcraft* (2004–). Dedicated, as the company says in its mission statement, to "creating the most epic entertainment experiences . . . ever,"[38] and known for its obsession with game quality, artistic achievement, and commitment to its fans, Blizzard has dominated in real-time strategy games and remains one of the most critically acclaimed game publishers in the world. As one company, Activision Blizzard has become a publishing giant in the industry.

Electronic Arts (EA) got its name by recognizing that the video game is an art form and that software developers are indeed artists; the name Electronic Arts is also a tribute to the United Artists film studio, established in 1919 by three actors and one director—Charlie Chaplin, Mary Pickford, Douglas Fairbanks, and D. W. Griffith—who broke away from the studio-dominated film industry (see page 239). Operating under the same principle that Activision pioneered—of recognizing game developers on the package and paying them high royalty fees—EA was able to secure a stable of top talent and begin producing a promising lineup of titles: *Archon*, *Pinball Construction Set*, *M.U.L.E.*, *Seven Cities of Gold*, *The Bard's Tale*, *Starflight*, and *Wasteland*.

The company's big breakthrough, though, was signing a contract with Super Bowl–winning coach and television football commentator John Madden in 1984. The game, *John Madden Football*, was released in 1988, with annual versions coming out every year since 1990. This became the modus operandi for EA: Create a popular game (or, more typically, buy the company that produces the popular game) and then create annual updates until the game stops selling. The *Madden* series has become a billion-dollar enterprise, and EA has since developed a reputation for specializing in sports games, with such series as *FIFA* (soccer) and *NASCAR* (racing). EA also struck gold with *Battlefield*, *Crysis*, *Rock Band*, *Mass Effect*, and *Dragon Age: Origins*.

Unlike Activision Blizzard, EA has quickly moved toward mobile and social gaming platforms. Electronic Arts acquired PopCap Games, the company that produces both *Bejeweled* and *Plants vs. Zombies*, as well as other social media gaming start-ups, and has more than 127 iPhone game apps and 41 Android game apps for direct download. The company has also sought to compete directly with Activision Blizzard's *World of Warcraft* series by developing (through its Canadian subsidiary, BioWare) the lavish MMORPG game *Star Wars: The Old Republic* (2012), the most expensive game made to date, with a price tag approaching $200 million.[39]

One of the newest major game publishers, Zynga, was established in 2007 and specializes in casual games. *FarmVille*, *Draw Something*, *Zynga Poker*, and *Hidden Chronicles* are among its hit games. But in recent years, Zynga's games on the Facebook platform have lost players to competing developers like King (*Candy Crush Saga*, *Bubble Witch Saga*) and Wooga (*Diamond Dash*, *Bubble Island*). Zynga's next step is developing games for mobile devices to decrease its reliance on Facebook.

The most well-known developer and publisher of games for mobile devices is Rovio, founded in Finland in 2003. In 2010, Rovio's *Angry Birds* became an international phenomenon, as millions of players downloaded the game on touchscreen devices for the chance to slingshot-launch birds at pigs hiding in increasingly complex structures. By 2012 (as Rovio released *Angry Birds Space*), the downloads of all of the company's *Angry Birds* titles reached a billion.[40] Like Zynga, Rovio has moved to diversify, and it brought *Angry Birds* to Facebook in 2012.

Other top game publishers around the world include Square Enix (*Deus Ex*, *Final Fantasy*), Ubisoft (*Assassin's Creed*, *Rayman*), Sega (*Sonic the Hedgehog*, *Super Monkey Ball*), THQ (*Saints Row*, *Red Faction*), and Namco Bandai (*Dark Souls*, *Tekken*).

The Structure of Digital Game Publishing

AAA game titles (games that represent the current standard for technical excellence) can cost as much as a blockbuster film to make and promote. For example, Electronic Art's MMORPG *Star Wars: The Old Republic* (2012) took six years of production, with hundreds of programmers, writers, and artists working on the game, as well as an untold number of contract workers. Using recorded voice dialogue rather than text, *Star Wars: The Old Republic* has more voice acting than any previous game, online or off. To get the game ready for its global launch, EA assembled 1.6 million players to test an early version of the game.[41] Development, licensing, manufacturing, and marketing constitute the major expenditures in game publishing (see Figure 3.2).

"Of course I'm angry—look at me."

© Kim Warp/The New Yorker Collection/www.CartoonBank.com.

Development

The largest part of the **development** budget—the money spent designing, coding, scoring, and testing a game—goes to paying talent, digital artists, and game testers. Each new generation of gaming platforms doubles the number of people involved in designing, programming, and mixing digitized images and sounds.

Licensing

Independent gamemakers must also deal with two types of licensing. First, they have to pay royalties to console manufacturers (Microsoft, Sony, or Nintendo) for the right to distribute a game using their system. These royalties vary from $3 to $10 per unit sold. (Of course, if a console manufacturer such as Nintendo makes its own games exclusively for the Wii, then it doesn't have to pay a console royalty to itself.) The other form of licensing involves **intellectual properties**—stories, characters, personalities, and music that require licensing
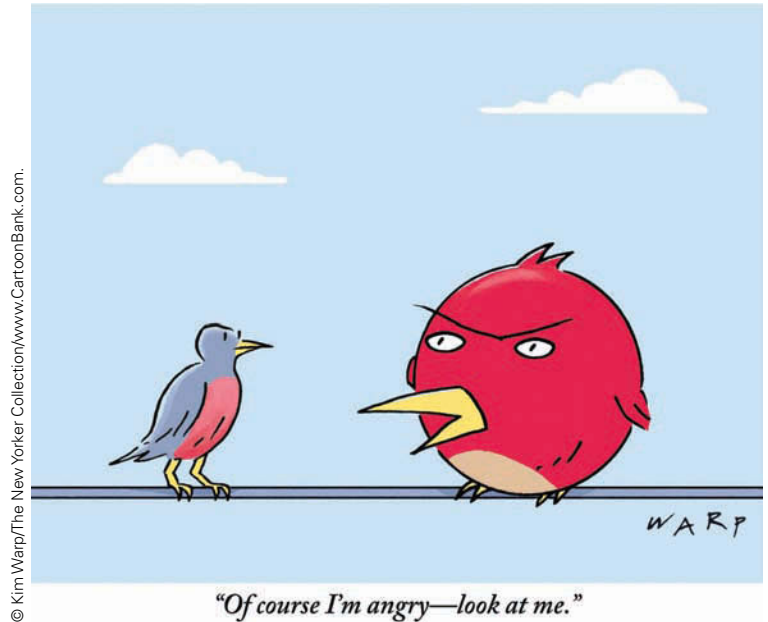
ANGRY BIRDS, Rovio's popular mobile video game, had over 2 billion downloads across all mobile platforms by 2014. With a mention on NBC's *30 Rock*, a tie-in with Twentieth Century Fox's animated film *Rio*, and a *New Yorker* cartoon, these fearsome birds have permeated our media culture. A feature film followed in 2016.
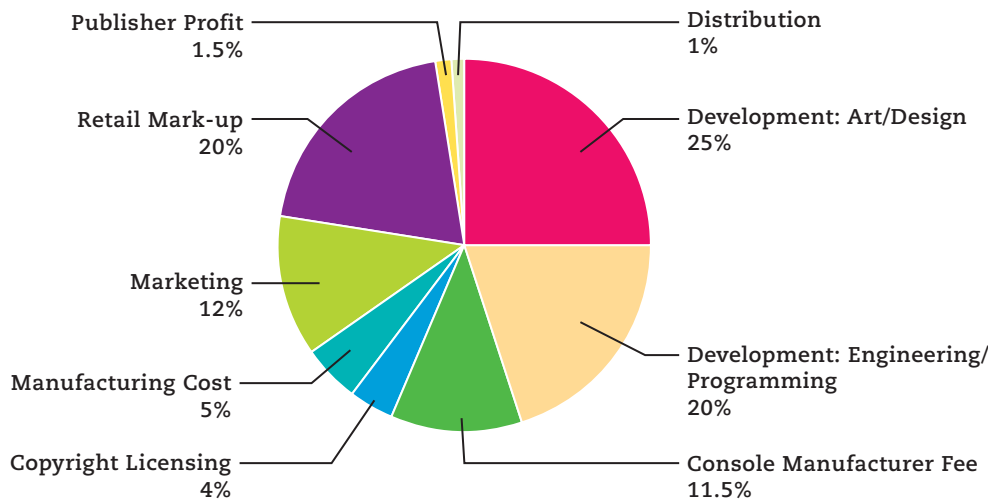
FIGURE 3.2

WHERE THE MONEY GOES ON A $60 VIDEO GAME

Data from: Altered Gamer, *March 30, 2012, www.alteredgamer.com /free-pcgaming/21118-why-are-video -games-so-expensive.*

Publisher Profit 1.5%
Distribution 1%
Development: Art/Design 25%
Retail Mark-up 20%
Development: Engineering/Programming 20%
Marketing 12%
Console Manufacturer Fee 11.5%
Manufacturing Cost 5%
Copyright Licensing 4%

agreements. In 2005, for instance, John Madden reportedly signed a $150 million deal with EA Sports that allowed the company to use his name and likeness for the next ten years.[42]

Marketing

The marketing costs of launching an electronic game often equal or exceed the development costs. The successful launch of a game involves online promotions, banner ads, magazine print ads, in-store displays, and the most expensive of all: television advertising. In many ways, the marketing blitz associated with introducing a major new franchise title, including cinematic television trailers, resembles the promotional campaign surrounding the debut of a block-buster movie. For example, Rockstar Games reportedly spent $150 million for the marketing of its 2013 blockbuster release, *Grand Theft Auto V*. In this case, the marketing budget eclipsed the $115 million development budget.[43] Just as avid fans line up for the midnight release of a new *Spider-Man* or *Hunger Games* movie, devoted gamers mob participating retail outlets during the countdown to the midnight launch of a hotly anticipated new game.

Selling Digital Games

Just as digital distribution has altered the relationship between other mass media and their audiences, it has transformed the selling of electronic games. Although the selling of $60 AAA console games at retail stores is an enduring model, many games are now free (with opportunities for hooked players to pay for additional play features), and digital stores are making access to games almost immediate.

Pay Models

There are three main pay models in the electronic game industry: the boxed game/retail model, the subscription model, and free-to-play.

The *boxed game/retail model* is the most traditional and dates back to the days of cartridges on Atari, Sega, and Nintendo console systems from the 1970s to the 1990s. By the 1990s, games were being released on CD-ROMs, and later DVDs, to better handle the richer game files. Many boxed games are now sold with offers of additional downloadable content, known as DLC in gaming circles. For blockbuster console games, retail sales of boxed games still reign as the venue for a game premiere. As of 2013, the biggest game launch ever—in fact, the biggest launch of *any* media product ever—was the September 17, 2013, release of *Grand Theft Auto V*. The game, published by Rockstar Games, generated more than $1 billion in sales in just three days, more than any other previous game or movie release.[44]

Some of the most popular games are also sold via a *subscription model*, in which gamers pay a monthly fee to play. Notable subscription games include *World of Warcraft* and *Star Wars: The Old Republic*. Subscriptions can generate enormous revenue for game publishers. At its height of popularity, *World of Warcraft* earned more than $1 billion a year for Activision Blizzard.[45] Players first buy the game (either boxed or as a download at $19.99, with expansions costing $29.99–$39.99) and then pay a subscription from $12.99 to $14.99 a month. EA's *Star Wars: The Old Republic* has a similar subscription cost.

Free-to-play (sometimes called *freemium*) is the latest pay model and is common with casual and online games, like *100 Balls*. Free-to-play games are offered online or as downloads for free to gain or retain a large audience. These games make money by selling extras, like power boosters (to aid in gameplay), or in-game subscriptions for upgraded play. In addition to free casual games (like *Angry Birds Seasons*, *Clash of Clans*, and *Temple Run*), popular MMORPG games like Sony Online Entertainment's *EverQuest* and *DC Universe Online* offer free-to-play versions. Even *World of Warcraft*, the largest MMORPG, began offering free-to-play for up to twenty levels of the game in 2011 to lure in new players.

Video Game Stores

Apart from buying boxed game titles at stores like Walmart, Best Buy, and Target, or online stores like Amazon, there is really only one major video game store chain devoted entirely to new and used video games: GameStop. The chain, which started in Dallas, Texas, in 1984 as Babbage's, today operates more than sixty-six hundred company stores in the United States and in fourteen other countries, including Canada, Australia, Austria, Denmark, Finland, France, and Germany.[46] GameStop stores usually appear in shopping and strip malls, and beyond video titles, they also specialize in gaming magazines (including their own proprietary title, *Game Informer*), strategy guides, and video game accessories.

Today, the traditional brick-and-mortar chain GameStop is trying to negotiate the shifting ground of the digital turn. Some of GameStop's digital survival strategies include selling customers access codes to digital game downloads in the stores, selling Android tablets and refurbished iPads, and investing in other digital gaming companies.

Digital Distribution

With the advent and growing popularity of digital game distribution, game players don't need to go to a big-box store or retail game shop to buy video games. All three major consoles are Wi-Fi capable, and each has its own digital store—Xbox Games Store, Wii Shop Channel, and PlayStation Store. Customers can purchase and download games, get extra downloadable content, and buy other media— including television shows and movies—as the consoles compete to be the sole entertainment center of people's living rooms. These console-connected digital stores present the biggest threat to brick-and-mortar game stores.

Although the three major console companies control digital downloads to their devices, several companies compete for the download market in PC games. The largest is Steam, with more than seventy-five million subscribers and about 50 percent of the PC game distribution market.[47] Steam is owned by Valve Corporation, which used the digital store to help distribute its *Counter-Strike* game online starting in 2003. Steam also carries more than three thousand games from a wide range of game publishers. Other companies that sell digital game downloads for PCs include Amazon's Appstore, GameStop, Microsoft's Games Marketplace, Origin (owned by EA), and GameFly.

Of course, the most ubiquitous digital game distributors are Apple's App Store and Google Play, where users can purchase games on mobile devices. Although Google's Android system has surpassed the iPhone in market penetration, Apple customers are more likely to purchase apps, including games. This has drawn more independent developers to work in the Apple operating system. As one technology writer summarized, "Quite simply, developers have long known that Apple device owners are closely locked into the Apple ecosystem, with credit cards on file."[48]

Alternative Voices

The advent of mobile gaming has provided a new entry point for independent game developers. As *Canadian Business* magazine noted, the cost of entry has decreased substantially. "The average cost of making a major console game for Xbox 360 and PlayStation3 is about $20 million, but almost anyone can churn out a new game app for the iPhone. And independent

Richard B. Levine/Newscom

MAJOR GAME FRANCHISES like *Call of Duty* from Activision receive launches that rival the biggest film events (like *The Avengers* or the *Transformers* movies) or book publications (like *Harry Potter* or *The Hunger Games*). In fact, the most popular games can match the grosses of the year's biggest movies in a matter of days, thanks to sky-high demand and higher prices.
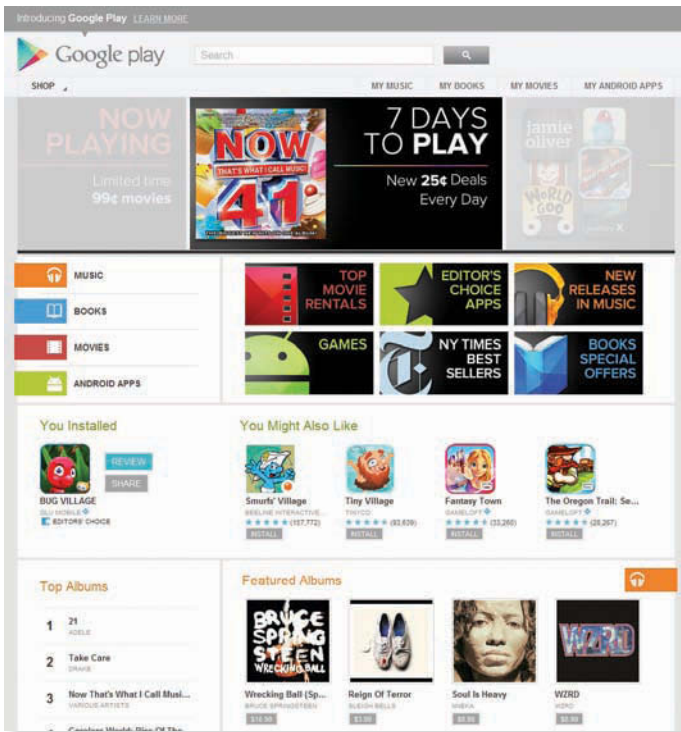
GOOGLE PLAY, formerly known as the Android Market, allows Android users to browse and download their favorite video games directly to their mobile devices. And while it has been shown that Apple customers are more likely to purchase apps, Google Play kept pace with Apple's App Store, with 1.2 million apps available by 2014.

Google, Inc. Reprinted by permission.

developers need only pay Apple's $99 fee for a developer's account to get their creations to the market—no Best Buy or Walmart shelf space required."[49]

But even so, time and money are still required to develop quality games. Many independent game developers and smaller game companies, shunned by big game publishers who are focused on the next big blockbuster games, are finding funding through Kickstarter, the crowdsource fund-raising social media Web site for creative projects. Video game developers make a brief pitch on Kickstarter and then request a modest amount— sometimes just a few thousand dollars—from supporters to get started. "Rather than seeking help from publishers who demand a high rate of return and, thus, a product that appeals to a broad group of gamers, developers can turn directly to their most devoted fans," the *Washington Post* explained. "And if enough of those fans are willing to pony up cash for the promise of a game that suits their tastes, it gets made, regardless of how quirky or niche-oriented it is."[50] (The Oculus Rift virtual reality headset that Facebook bought for $2 billion got its start in a comparatively modest Kickstarter campaign, which raised more than $2.4 million, far exceeding its $250,000 goal.) A number of top games at Apple's App Store—including *Temple Run*, *Tiny Wings*, and *Jetpack Joyride*—are great success stories, started by small independent developers. But the cautionary tale is that it takes incredible persistence against great odds to make a successful game. Rovio made fifty-one failed app games in six years and nearly folded before *Angry Birds* became a worldwide success in 2009.

Digital Gaming, Free Speech, and Democracy

Though 80 percent of retail outlets voluntarily chose to observe the ESRB guidelines and not sell M- and AO-rated games to minors, the ratings did not have force of law. That changed in 2005, when California enacted a law to make renting or selling an M-rated game to a minor an offense enforced by fines. The law was immediately challenged by the industry and struck down by a lower court as unconstitutional. California petitioned the Supreme Court to hear the case. In a landmark decision handed down in 2011, the Supreme Court granted electronic games speech protections afforded by the First Amendment. According to the opinion written by Justice Antonin Scalia, video games communicate ideas worthy of such protection:

Like the protected books, plays, and movies that preceded them, video games communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player's interaction with the virtual world).[51]

DIGITAL JOB OUTLOOK

Media Professionals Speak about Jobs in the Video Game Industry

Ian Williams, Student and Freelance Writer

I started as a QA (Quality Assurance) engineer, and a QA's job is to break things in-game, record how the things were broken, and then pass the information to the content creation team, who would hopefully fix them. It's a common entry-level gig in the industry, one that gives you a broad enough knowledge of how things work to eventually launch something more specialized.

Lisa Brown, Designer, Insomniac Games

Should people learn to code? I think so! Even if you aren't planning on becoming a programmer, it really helps you get a feel and an appreciation for the medium you're working in—and will help you talk to your programmer teammates in the future.

Sarah Ford, Indie Developer

I'm useless with code, so most of my beginner games were made in conjunction with coders and designers, many of whom found my art online and dug it enough to want to work with me. It helps if you think in assets, if you're wanting to get into games art. It's not just about creating a picture of a cool car in a neon cityscape—it's about thinking about all the little parts that make up that scene, from the car to the buildings that create the skyline down to the surface of the road itself.

Andy Grossman, Video Game Developer

Even if you're lucky enough to land that dream job at Valve or Nintendo or Blizzard, and you get to work on a beloved franchise, you'll hate it when you're done. Try enjoying *Halo* after you get reprimanded for slightly coloring Master Chief's helmet off the style guide. You won't. The magic will be gone: An endless universe filled with infinite stories will be replaced by a group of bug logs reporting that Nathan Drake's eyes are missing in cut scenes.

Allison Salmon, Game Developer and Software Engineer, Learning Games Network

I experienced far more discrimination and harassment during my time in college than I did while working in AAA. So I guess some of my advice would be don't let the unfriendliness of certain gamer cultures scare you away from the video game industry.

Keith Stuart, Games Editor, the *Guardian*

We are entering an era of diverse artistic and emotional expression. It's no longer about dumb muscle-heads saving the princess (not that games were ever about just that)—this is a creative medium bursting with interesting, weird, and challenging ideas. In the seventies, kids turned to guitars and the punk movement to express themselves. Now they're just as likely to write and distribute games that reach thousands.

Scalia even mentions *Mortal Kombat* in footnote 4 of the decision:

Reading Dante is unquestionably more cultured and intellectually edifying than playing Mortal Kombat. *But these cultural and intellectual differences are not constitutional ones. Crudely violent video games, tawdry TV shows, and cheap novels and magazines are no less forms of speech than* The Divine Comedy. . . . *Even if we can see in them "nothing of any possible value to society . . . they are as much entitled to the protection of free speech as the best of literature."*

With the Supreme Court decision, electronic games achieved the same First Amendment protection afforded to other mass media. However, as in the music, television, and film industries, First Amendment protections will not make the rating system for the gaming industry go away. Parents continue to have legitimate concerns about the games their children play. Game publishers and retailers understand it is still in their best interest to respect those concerns even though the ratings cannot be enforced by law. ▶

CHAPTER REVIEW

COMMON THREADS

One of our favorite quotes that we like to use in our teaching is from writer Joan Didion, in her book **The White Album.** *She wrote: "We tell ourselves stories in order to live." Telling stories is one of the constants of cultural expression across the mass media. But with digital games, is it still a story—or, better yet, what is it that is being communicated—if we are crafting our own individual narrative as we play through a game?*

Books, television, movies, newspapers, magazines, and even musical recordings tell us stories about the human experience. Digital games, especially ones in which we play as a character or an avatar, offer perhaps the most immersive storytelling experience of any medium.

Gamers have already shifted away from traditional media stories to those of video games. The Entertainment Software Association reported that gamers who played more video games than they had three years earlier were spending less time going to the movies (47 percent of respondents), watching TV (48 percent), and watching movies at home (47 percent).[52] Clearly, video games are in competition with movies and television for consumers' attention. But as we move from the kind of storytelling we experience as audience members of TV and movies to the storytelling we experience as players of games, what happens to the story? Is it still a mass mediated story, or is it something else?

Jon Spaihts, screenwriter of the science-fiction film *Prometheus* (2012), identified an essential difference between the stories and storytelling in games and in films. "The central character of a game is most often a cipher—an avatar into which the player projects himself or herself. The story has to have a looseness to accommodate the player's choices," Spaihts said. Conversely, "a filmmaker is trying to make you look at something a certain way—almost to force an experience on you," he added.[53] Thus the question of who is doing the storytelling—a producer/director or the game player—is a significant one.

Such was the case in the furor over *Mass Effect 3* in 2012. After players spent from 120 to 150 hours advancing through the trilogy, in which they could make hundreds of choices in the sequence of events, the final act took that power away from them with a tightly scripted finish. The players complained loudly, and the cofounder of BioWare, the game's developer, issued an apology: "*Mass Effect 3* concludes a trilogy with so much player control and ownership of the story that it was hard for us to predict the range of emotions players would feel when they finished playing through it. The journey you undertake in *Mass Effect* provokes an intense range of highly personal emotions in the player; even so, the passionate reaction of some of our most loyal players to the current endings in *Mass Effect 3* is something that has genuinely surprised us." BioWare said that it would create a new ending with "a number of game content initiatives that will help answer the questions, providing more clarity for those seeking further closure to their journey."[54]

Certainly the audience of a movie will have a range of interpretations of the movie's story. But what of the stories we are telling ourselves as players of games like *Mass Effect*? Is such personally immersive storytelling better, worse, or just different? And who is doing the storytelling?

KEY TERMS

The definitions for the terms listed below can be found in the glossary at the end of the book. The page numbers listed with the terms indicate where the term is highlighted in the chapter.

penny arcade, 76
pinball machine, 76
arcades, 78
avatar, 79
consoles, 79
massively multiplayer online role-playing
    games (MMORPGs), 81
online fantasy sports, 82
gameplay, 84
action games, 86

first-person shooter (FPS), 86
adventure games, 88
role-playing games (RPGs), 88
strategy games, 88
simulation games, 88
casual games, 89
PUGs, 90
noobs, 90
ninjas, 90
trolls, 90

guilds *or* clans, 90
collective intelligence, 91
modding, 91
advergames, 93
in-game advertisements, 93
Entertainment Software Rating Board
    (ESRB), 99
cartridge, 100
development, 103
intellectual properties, 103

REVIEW QUESTIONS

The Development of Digital Gaming

1. What sparked the creation of mechanical games in both the nineteenth and the twentieth centuries?

2. What technology enabled the evolution of the first video games?

3. How are classic arcade games and the culture of the arcade similar to today's popular console games and gaming culture?

4. What are the three major consoles, and what distinguishes them from each other?

5. What advantages did personal computers have over video game consoles in the late 1980s and much of the 1990s?

The Internet Transforms Gaming

6. How are MMORPGs, virtual worlds, and online fantasy sports built around online social interaction?

7. How has digital convergence changed the function of gaming consoles?

The Media Playground

8. What are the main genres within digital gaming?

9. What are the two basic kinds of virtual communities?

10. How do collective intelligence, gaming Web sites, and game conventions enhance the social experience of gaming and make games different from other mass media?

Trends and Issues in Digital Gaming

11. How have digital games influenced media culture, and vice versa?

12. In what ways has advertising become incorporated into electronic games?

13. To what extent are video game addiction and violent and misogynistic representations problems for the gaming industry?

14. How are digital games regulated?

15. What might video games be like in the future?

The Business of Digital Gaming

16. What are the roles of two major components of the gaming industry: console makers and game publishers?

17. How do game publishers develop, license, and market new titles?

18. What are the three major pay models for selling video games today?

19. How can small, independent game developers get their start in the industry?

Digital Gaming, Free Speech, and Democracy

20. Why did the U.S. Supreme Court rule that games count as speech?

21. Why does the game industry still rate digital games, even if it isn't required by law to do so?

QUESTIONING THE MEDIA

1. Do you have any strong memories from playing early video games? To what extent did these games define your childhood?

2. What role does digital gaming play in your life today? Are you more inclined to play casual games or more involved games, and why?

3. Do you have a story about game addiction, either your own or from someone you know? Explain.

4. Have you ever been appalled at the level of violence, misogyny, or racism in a video game you played (or watched being played)? Discuss the game narrative and what made it problematic.

5. Most electronic games produced have a white, male, heterosexual point of view. Why is that? If you were a game developer, what kinds of game narratives would you like to see developed?

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