

If Takeda's team members wanted Little Mac to look like Howard Phillips, they failed. Little Mac had black hair; Phillips's hair was red. Their faces were also unlike.*

Nintendo, a company that worked hard to maintain a clean image, came to regret its association with Tyson. After winning and unifying the heavy-weight crown in 1987, Tyson became involved in a well-publicized divorce from actress Robyn Givens. During the proceedings, Tyson was accused of beating Givens. When Nintendo's three-year agreement with Tyson ended, the company quietly removed his name and image from the game and re-released it as *Punch-Out!* with a new champion named "Mr. Dream."

Both *Mike Tyson's Punch-Out* and *The Legend of Zelda* became million-sellers.

Metroid

Metroid, the third major game to be released by Nintendo in 1987, was a futuristic adventure in which players controlled a space explorer named Samus. Created by Nintendo's Research and Development Team 1—the team led by Gunpei Yokoi, the man who created the hardware for *Donkey Kong*—*Metroid* was a difficult game to beat. It involved a lot of precision jumping, one of the tougher skills in video games. It featured several large side-scrolling and vertically scrolling maps and stands out for having some of the most innovative and challenging levels of any NES game. It was also one of the first games to feature a female hero. Samus wore a large space helmet throughout the game. She could have been a man, a child, or a robot. Once she destroyed the final enemy character, a creature called "Mother Brain," she removed her helmet. Only then did players find out that Samus was a woman.

Metroid became a symbol of Nintendo's ability to make adult-oriented games. In later years, Nintendo tried to attract older consumers to Game Boy and Super NES by releasing *Metroid* versions for those systems.

The Library of Licensees

Nintendo's third-party licensees also provided impressive games in 1987. Konami, a company that would distinguish itself as one of Nintendo's four

* Glass Joe, the first opponent in the game, looked a bit more like Phillips and has the same hair color and length. It is possible that Arakawa was mistaken.

most influential licensees, made good use of its five-game allotment in 1987. A successful arcade company with such past hits as *Frogger* and *Time Pilot*, Konami's first offerings included *Gradius*, a side-scrolling space shooter; *Track & Field* and *Rush 'N Attack*, two decent translations of arcade games; *Castlevania*, a side-scrolling adventure in which players controlled a whip-toting vampire hunter; and *Double Dribble*, a basketball simulation.

Konami sold more than 1 million copies of *Gradius*, its first NES title, in Japan before shipping it to the United States. The game contained a secret code that would enable players to equip their spaceship with an array of weapons. To get the weapons, players had to hit the directional pad on their controllers up twice, down twice, left, right, left, right, "B," "A," and then "Start" buttons. Konami used the same secret code in many of its later games.

Data East, another licensee with a strong arcade pedigree, used its game allotment to convert popular arcade games into home cartridges. Data East's first offerings included *Tag Team Wrestling*, *Karate Champ* (the first side-view martial-arts tournament game), *Burgertime* (which had been released for ColecoVision, Intellivision, and several Atari systems in the early 1980s), and *Karnov*.

Taito, which along with Konami was one of the original four licensees, released home versions of three arcade games in 1987—*Elevator Action*, *Legend of Kage*, and *Arkanoid*. In later years, *Arkanoid* became somewhat of a collectors' item because it had an adapter featuring a knob that enabled NES controllers to move paddles across the bottom of the screen. *Arkanoid* was basically an updated version of the Atari game *Breakout*.

Some companies rushed to publish NES translations of arcade games that they licensed from other companies. SNK Corporation licensed the NES rights to the arcade hits *Ikari Warriors* and *Ikari Warriors II: Victory Road* from a company called Irem. Sun Soft Corporation licensed a 1983 driving simulation called *Spy Hunter* from Bally/Midway.

Of all of Nintendo's early licensees, however, the one with the most staying power in the industry was Capcom. With an unmistakably strong arcade presence and a particularly aggressive marketer at the helm of its U.S. affiliate, Capcom released a mixture of arcade translations and original games that attracted a strong following.

Capcom is another coin-op company, a very good coin-op company. They were especially good at creating the games and doing the smart marketing. Sometime, from inventory-risk point of view, they made mistakes by being too aggressive, and they ended up in trouble back in those days.

—Minoru Arakawa

Fighting for Survival

Nintendo and Sega were neighbors during the 1987 Winter Consumer Electronics Show. Sega's big product at the show was a pair of 3D glasses for the Master System. The glasses were designed by Mark Cerny, the young game designer who created *Marble Madness* for Atari Coin-op. Now working for Sega, Cerny moved to Japan shortly after leaving Atari.

Sega's 3D glasses reflected their creator's gift for sensible design. They were molded out of durable plastic, lightweight, and large enough to fit over prescription eyewear. The glasses were not meant to replace the television but rather to enhance it. Players watched the game through the glasses, and transparent liquid crystal displays within the eyepieces focused the picture on the screen and added 3D effects.* Cerny's glasses were one of the big hits of the trade show.

We were showing off what we felt was the next step in this technology, these 3D glasses that used a shuttering effect. Next to us . . . right next to us because we were side by side, Nintendo was showing their knitting machine. They actually had a big to-do for knitting potholders and stuff like that.

I remember seeing Howard Lincoln and Arakawa in the hallway between our booths, and I started laughing and said that I felt that I was taking two steps forward in technology and I didn't know where they were going with the pot holders.

—Bruce Lowry, former president, Sega Consumer Products

*Ten years after Sega released its 3D Glasses, a number of smaller companies released products that utilized the identical technology to enhance PC games.

Sega had a number of small victories during this period. Macy's and FAO Schwartz carried the Master System right alongside the NES, and Target stores promoted the console quite heavily. Film critics Siskel and Ebert compared the NES and Master System on a special holiday program, concluding that they preferred Sega's hardware. Ebert, who wore corrective eyeglasses, even commented that he could wear his glasses under the 3D Glasses.

These were fleeting victories at best, however. Nintendo controlled somewhere between 86 to 93 percent of the market by the end of 1987. By the time Sega had sold 100,000 Master Systems, Nintendo had already sold more than 2 million NES units and the gap was widening. Nintendo had better market awareness and more money for advertising. Sensing that an established marketing partner with inroads into the American toy industry might have more luck competing with Nintendo, Sega Enterprises CEO Hayao Nakayama pulled the plug on the in-house consumer division in the beginning of 1988 and signed a two-year licensing agreement with Tonka Toys. Neither Bruce Lowry nor Bob Harris, who was vice president of sales and marketing, wanted to move to Tonka's Minnesota headquarters; and both ended up leaving Sega.

While we had gotten into all the retailers they [Nintendo] did, we simply did not have the resources to compete against Nintendo's huge marketing budget, and the decision was made to look for a partner. We hooked up with Tonka, and they took over the distribution and put a tremendous amount of money into marketing dollars. They put over \$30 million into marketing.

—Bruce Lowry

Another Big Year

Toy sales generally drop sharply after the holidays, but Nintendo sales remained strong in January and February of 1988. With more than seven million users, the demand for new games remained steady all year long. So did the requests for game hints and information about upcoming titles. Nintendo tried to satisfy consumer curiosity with a free quarterly newsletter called *Nintendo Fun Club News*, but the newsletter wasn't enough. It began

as a 12-page, two-color publication in the spring of 1987, but by winter it had expanded to 32 full-color pages. After releasing the spring 1988, issue of *Nintendo Fun Club News*, Arakawa decided it was time for Nintendo to publish a full magazine. The magazine was named *Nintendo Power*.

There were quite a few publishers making video game magazines in Japan, and no one was doing one in the United States, so we decided to do it ourselves. I felt Gail Tilden was the perfect person to do the editing on the magazine. She had just had a baby and wasn't in the office, so I called her up and asked her to start our publishing department. She accepted, and she came with the baby in her arms two weeks after she got out of the hospital.

—Minoru Arakawa

Nintendo Power, which was released bi-monthly, was larger and far more sophisticated than *Nintendo Fun Club News*. Each issue was approximately 100 pages long and featured game maps, tips from game counselors, and descriptions of upcoming games. *Nintendo Power* ran no advertisements, though it glibly plugged products made by Nintendo. By 1989, more than one million people subscribed to *Nintendo Power*.

One of *Nintendo Power*'s most popular features was "NES Achievers," a two-page spread that listed the names of people who either completed or got exceptionally high scores on popular NES and Game Boy games. The competition to get on this list was fierce and not always restricted to kids.

I had my name in *Nintendo Power Magazine* several times for top score on *Game Boy Tetris*. It got to the point that they wouldn't print my name again, so I had to use a fake name. . . . my first name backwards and my last name backwards. Evets Kainzow.

I saw the fake name in there one day, and I thought it was somebody else and said, "Oh, my God, his score is better than mine!" I was trying to figure it out, then I noticed that Evets Kainzow lived in Saratoga, and I remembered sending it in.

—Steven Wozniak, cofounder, Apple Computers

Inventing the Ultimate Video Game

As Nintendo's popularity grew, so did complaints about video games interfering with school studies. Rather than taking a defensive approach, the public relations team from Hill and Knowlton recommended that Nintendo take a proactive stance and proposed an event that would cast the company in a pro-education light.

There was a fair amount of backlash starting to develop about this time, and people felt that video games were an insidious stealer of children's energies and creativity. There were a lot of things we did to try to put a more human face on Nintendo, including sponsoring a contest that promoted the process of inventing and creativity among kids.

—Richard Brudvik-Lindner

The contest was called the "Invent the Ultimate Video Game" competition. Kids of all ages were invited to submit original ideas for video games to be judged by Nintendo. They did not have to make an actual game; they simply needed to send documentation explaining their ideas. Of the more than 10,000 entries received, 10 finalists were selected and flown to Washington, D.C., in February 1989, to exhibit their ideas at an event that would be held in the rotunda of the Senate office building. Many of the games that were selected had a decidedly educational theme. A female finalist, for instance, came up with a game that simulated a presidential election. The winner of the competition was fifteen-year-old Jeffrey Scott Campbell of Aurora, Colorado, who received the grand prize: a \$3,000 scholarship.

I presented the trophies at the competition and talked with a lot of reporters. This one TV reporter came up to me, and we spoke for quite a while. We had a friendly conversation, then he said, "Are you ready to do the interview?"

I said yes, and he put his microphone in my face and said, "Why is it that video games are so bad for kids?"

I thought for a few seconds, then I said, "They're not."

He said, "Let's try this again," and asked the same question. Then I thought for a few seconds and said, "They're not." He wanted to get me arguing, and

I thought this was the best way to make sure that he did not get any useable tape from me.

—Howard Phillips

Not a Political Statement

In 1988, Konami released an NES side-scrolling shooter game called *Contra*. The game started out like a fairly typical war game with soldiers running through a jungle, shooting at enemies. Before long, however, the action moved out of the jungle and into a futuristic-looking fortress filled with alien creatures and lasers. (Despite the picture of an alien standing between two soldiers on the box, some people saw the title and thought the game referred to the guerrillas Ronald Reagan had sent aid to in Nicaragua.) Toys “R” Us refused to carry the game, stating that it was too violent. When Minoru Arakawa called Toys “R” Us headquarters and told the buyers that the violence in the game was within acceptable limits, the retailers picked up the game. It sold exceptionally well.

Nintendo’s product analysts scrutinized and screened games before approving them for publication on the NES, but some things slipped through. When Jaleco, a company best-known for the million copy–selling baseball simulation *Bases Loaded*, submitted *Maniac Mansion* as a possible NES title, Nintendo made the company change some of the background art. Originally created by LucasArts for the Commodore Amiga, *Maniac Mansion* featured naked Greek statues. Once the statues and a few mildly suggestive lines of dialog were changed, the game was approved. Unfortunately, Nintendo’s screeners had not discovered an Easter egg that was well hidden deep within the game.

You had to sneak into a character named Weird Ed’s room and steal his hamster. You would then run down to the kitchen undetected and put the hamster in the microwave oven, at which point the hamster would explode into a little charred mess complete with sound effects. Then you could hand the charred hamster back to Weird Ed.

That actually was one of the only ways you could die in *Maniac Mansion*. If you pulled off that trick, you would end up as a little tombstone, and then you could move around the game as an invisible ghost-like character.

It was just one of those nice little tricks that was buried in the game, and it was buried so well that they never found it until the first 250,000 copies had sold. When we did the second run, they made us change it.

—Mike Meyers, former product manager, Jaleco

A Holiday for Sequels

As the holiday season approached, Nintendo could not ship in enough inventory to satisfy demands. Orders had been placed for 8.4 million NES consoles. Nintendo was only able to deliver 7 million. Because of the cost of making cartridges, Nintendo executives generally preferred multiple small manufacturing runs and making customers wait for games rather than risking overstocking inventories. This policy made shortages of top products a Nintendo holiday tradition.

Blockbuster releases also generally resulted in holiday shortages. In 1988, Nintendo released two blockbuster games in time for the holidays—the sequels to *Super Mario Bros.* and *The Legend of Zelda*. Excitement over the games grew so feverish that some Nintendo outlets took pre-orders. Both games had fundamental changes in their game play that made them unlike their predecessors. Although both games were good, neither lived up to expectations.

Like *The Legend of Zelda*, *Zelda II: The Adventure of Link* was an adventure game in which players led a young elf through a sprawling kingdom, exploring dungeons and fighting monsters. The game had many of the same monsters and supposedly took place in the same fantasy world as *The Legend of Zelda*, but the earlier game was exploration-based while *The Adventure of Link* focused more on combat.

The second sequel of the 1988 holiday season, *Super Mario Bros. 2*, was even more dissimilar to its predecessor. The only thing it shared with the original *Super Mario Bros.* were the lead characters, a few clever puzzles, and the same cute, innocuous sense of humor. The play mechanics of *Super Mario Bros. 2* were entirely new. *Super Mario Bros.* was a fast-moving game of exploration and precision jumping, in which players always raced against the clock. Much of the action occurred in acrophobic environments, where players sped across tall mushrooms or dangling steel girders. There was always a sense of vertigo, as

one misstep could cost Mario a life. *Super Mario Bros. 2*, on the other hand, took place at a slower and more plodding pace. Players located puzzles in the original *Super Mario Bros.* by jumping and bumping walls and blocks as they ran. Many puzzles in the sequel were hidden under clumps of grass. To find them, players had to pull every plant they passed.

Part of the reason the *Super Mario Bros. 2* bore so little resemblance to the original *Super Mario Bros.* was because it was not a true sequel. The game that was released in the United States as *Super Mario Bros. 2* was originally released in Japan as *Doki Doki Panic*.

Mario 2 was a gap filler. In Japan it was called *Doki Doki Panic* and it had some little Arabian guy. They just took the Arabian guy out and replaced him with Mario, and I think there were some changes to the girl to make her more like a Mario-ish heroine; but they only made very limited changes.

—Howard Phillips

Shigeru Miyamoto, the man who created *Super Mario Bros.*, had little to do with the making of *Doki Doki Panic*. He did create a sequel that was released in Japan. Though Miyamoto's sequel was similar to the original *Super Mario Bros.*, it was determined that the game had elements that might irritate American consumers.

There were two things in the Japanese *Super Mario 2* that made it not so palatable. At the time, I didn't really know if Miyamoto had driven these changes or not, and it made me question whether he just lucked out to begin with.

In the Japanese *Super Mario 2*, the very first thing that happens is that this mushroom pops out of a block and you think, "Oh, great, go grab it." It's a poison mushroom. In the first Mario game, all the things that popped out were good. They added this new jeopardy that when you were looking for something surprising and good, it might be surprisingly bad.

The other thing he did was add in this driving rain. It came at a 45-degree angle so that Mario would be cruising along, and this wind would pick up and it varied with time. Sometimes it would blow slow and you'd move pretty quickly, and then sometimes it'd blow hard. You had to time your jumps to

the wind, but again, the winds were unpredictable and you had to guess. Those two things were classically un-Miyamoto, in that [they were] random and out of the player's control.

Maybe Miyamoto was depressed at the time he made *Mario 2*, or maybe he delegated somebody else to do some level design, and that person added a couple of developments.

—Howard Phillips

Though it was quite different from the original *Super Mario Bros.*, *Super Mario Bros. 2* was a major hit. Nintendo sold 6.76 million copies of the game worldwide.

The Legal Game

A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.

—United States Congress¹

All computer software exists as electrical pulses, yet Congress explicitly extended copyright protection to computer software as a literary work.²

—Judge Fern M. Smith, District Court, North District of California

If you stack the notes from my appearances in court and measure them end-to-end, that stack would probably be about two feet long. If you take all of the paperwork from all of Magnavox’s cases, it would be at least 200 feet, enough to fill two storage rooms in a private storage facility in Chicago.

—Ralph Baer, former manager, Equipment Design Division, Sanders Associates

Lasting Decisions

Video game companies began taking each other to court before the term *video game* was even coined. Magnavox, the first console manufacturer, sued Atari, the first commercially successful arcade company, as early as 1973, coming the year after the introduction of *Pong*. At the time, people did not know whether to call *Pong* a “computer game” or a “television game.”

There have been hundreds of legal actions throughout the history of video games. Many of these actions, such as Magnavox’s protection of its technology patents, have resulted in insignificant trials or out-of-court settlements. Other cases have had important ramifications for future copyright protection and antitrust actions.

Data East v. Epyx

In 1984, Data East released a game titled *Karate Champ*. Though it was not the first two-player fighting game,* it was the first two-player martial arts tournament game and the progenitor of a genre that in the early 1990s would become extremely popular. In *Karate Champ*, players controlled a martial artist as he battled computer-controlled fighters in tournament-style combat. (*Karate Champ* had two-player simultaneous action as well.) It featured several realistic blocks, kicks, and punches and had large, relatively human-looking characters. The game was a modest hit in the arcades.

In October 1985, Data East released a home version of *Karate Champ* for the Commodore 64 computer. One month later, the British company System III released a similar game titled *International Karate*. When California-based Epyx, Inc., licensed the game and released it as *World Karate Championship* for the Commodore 64 in April 1986, Data East took Epyx to court, claiming that the “overall appearance, compilation, and sequence of the audio visual display of the video game *World Karate Championship* infringed upon *Karate Champ*.” Data East also claimed that *World Karate Championship* infringed upon its trademark and trade dress. The case went before Judge William A. Ingram of the United States District Court for the Northern District of California.

Upon looking at both games, Ingram found several areas of similarity to support Data East’s claim:

* The first two-player fighting game was *Warrior*, released by Cinematronics in 1979.

- A. Each game has fourteen moves.
- B. Each game has a two-player option.
- C. Each game has a one-player option.
- D. Each game has forward and backward somersault moves and about-face moves.
- E. Each game has a squatting reverse punch wherein the heel is not on the ground.
- F. Each game has an upper-lunge punch.
- G. Each game has a back-foot sweep.
- H. Each game has a jumping sidekick.
- I. Each game has a low kick.
- J. Each game has a walk-backwards position.
- K. Each game has changing background scenes.
- L. Each game has 30-second countdown rounds.
- M. Each game uses one referee.
- N. In each game the referee says, “begin,” “stop,” “white,” “red,” which is depicted by a cartoon-style speech balloon.
- O. Each game has a provision for 100 bonus points per remaining second.³

World Karate Championship borrowed other elements from *Karate Champ*. Both games featured fighters in either red or white karate *gis*, and both featured bonus rounds in which players earned extra points by breaking bricks or dodging dangers. The court recognized that as both games depicted karate tournaments, some duplication was inevitable. Karate in general, and karate tournaments in particular, included standard features such as karate *gis*, certain moves, and referees. Matches at karate tournaments involve two fighters earning points by performing combat maneuvers. The fights are scored by referees who award certain points for various moves. In his decision, Judge Ingram also noted that both games were made for the Commodore computer and that various constraints were inherent in the use of that computer. Even granting these constraints, the judge found too many similarities to ignore.

The district court found that except for the graphic quality of Epyx’s expressions, part of the scoreboard, the referee’s physical appearance, and minor particulars in the “bonus phases,” Data East’s and Epyx’s games are qualitatively identical.⁴

Based on these findings, Judge Ingram ordered Epyx to recall *World Karate Championship* and *International Karate*. His decision was overturned, however, by Judge Stephen S. Trott of the United States Court of Appeals, Ninth Circuit.

To establish copyright infringement, Data East must prove ownership of a valid copyright and “copying” by Epyx of the copyrighted work. It is undisputed that Data East is the registered copyright owner of the audio-visual work for each version of “Karate Champ.” Thus we need only determine whether Epyx copied “Karate Champ.” This sounds simple and straightforward. It is not.⁵

According to Trott, there was no direct evidence that System III, the original creator of *International Karate*, had access to the Commodore computer version of *Karate Champ*. He listed Judge Ingram’s 15 similarities and identified them as inherent to the sport of karate. According to Trott, “karate is not susceptible of [sic] a wholly fanciful presentation.”* In his decision, the judge stated that the only parts of the game that could be protected by a copyright were the areas in which Data East made creative contributions—namely the scoreboard and the background scenes. These, however, were the areas in which *Karate Champ* and *World Karate Championship* were most different.

Based upon these two features, a discerning 17.5-year-old boy could not regard the works as substantially similar. Accordingly, Data East’s copyright was not infringed on this basis either.⁶

Trott found in favor of Epyx and reversed Ingram’s decision. Epyx was allowed to market *World Karate Championship*. This decision would have a decisive impact on several future decisions, including another case with Data East. In 1993, Capcom released the game *Street Fighter II*, which became an international arcade sensation. Shortly after the game was released for home systems, Data East released the fighting game *Fighter’s History*, which had similar combatants

* In later years, *Mortal Kombat*, *Street Fighter II*, and other “completely fanciful” martial arts games that built off the *Karate Champ* formula would dominate both the home market and the arcade industry.

and moves. Capcom took Data East to court, claiming infringement, but the courts ruled in Data East's favor.

Atari Games Corporation v. Nintendo of America

In 1985, Steven Ross, president of Warner Communications, divided Atari into two companies and sold off shares of each. He sold 75 percent of Atari Corporation, formerly known as the consumer division, to Jack Tramiel. He kept 40 percent of Atari Games Corporation, the arcade division, and sold the rest to Masaya Nakamura, founder of Namco. Nakamura had hoped to develop synergy between the two companies. Instead, he found the arrangement unsatisfactory and decided to sell his stake in Atari. Backed by a group of employees and Time Warner, Hideyuki Nakajima, the man Nakamura sent to manage Namco's American operations, bought Atari Games in 1987.

Nakajima is generally remembered as a smart and extremely likable man with a long history in the video game industry.* When Nolan Bushnell first opened Atari Japan, in 1973, he hired Nakajima to manage it. One year later, Bushnell sold the operation to Namco and Nakamura hired Nakajima to continue running the company.

He was very "American" for a Japanese man. Culturally, they are different people, but he was almost like an American with a Japanese accent. Just a really neat man. I remember I was at an Atari convention down in Hilton Head, and I asked him some sort of a philosophical question about the industry and he looked at me and said something like, "That is a strange question for the preacher to be asking."

I really got a kick out of that. Here was this big deal from Namco and Atari calling me "the preacher."

—Eddie Adlum, publisher, *RePlay*

Shortly after taking over Atari, Nakajima decided to leverage some of Atari's arcade games as consumer products. He could not publish the games under the Atari banner because the consumer rights to the Atari name belonged to

* Nakajima died of lung cancer on July 11, 1994.

Atari Corporation. Instead, Nakajima created a wholly owned subsidiary of Atari Games called Tengen.*

At the time, the only viable outlet for video games was the hugely lucrative Nintendo Entertainment System (NES) market. Sega was not licensing games for the Master System, and the Atari 7800 had barely made a dent in the market. To break into the market, Nakajima knew he would need to become a licensee of Nintendo, so he met with Nintendo president Minoru Arakawa and senior vice president Howard Lincoln in 1987 to discuss the terms of their licensing agreement.

Nakajima wanted special privileges that had not been granted to other licensees.** As the only company with access to the Atari library, he felt Tengen had more to contribute, but Arakawa insisted that all licensees receive the same terms. Nakajima ultimately agreed to Nintendo's terms and signed on as a licensee in December 1987. What Arakawa and Lincoln did not realize was that they were entering into a trap.

It is not known if Nakajima ever planned to honor the licensing agreement, but Atari engineers began trying to discover ways around the security devices in the Nintendo Entertainment System a full year before he signed the agreement. (The NES had a custom-designed security chip containing a protocol called "10NES programming" that detected unlicensed cartridges and prevented them from working on the console.)

Atari first attempted to analyze and replicate the NES security system in 1986. Atari could not break the 10NES program by monitoring the communication between the master and slave chips themselves. Atari analysts chemically peeled layers from the NES chips to allow microscopic examination of the object code.*** Nonetheless, Atari still could not decipher the code sufficiently to replicate the NES security system.⁷

—Judge Fern M. Smith

* Keeping with Atari tradition, Nakajima named the company after a term from the game *Go*. *Tengen* refers to the center of a *Go* board.

** Nintendo licensees could publish only five games per year. Once a game was published on the NES, it could not be released for other platforms for two years. Nakajima requested that both stipulations be waived.

*** This is a figurative statement.

Nintendo Co, Ltd., did not have this security system when the Famicom was released in Japan. The system was designed for the NES, and it was built around a special chip that was placed in all consoles and cartridges. The chips worked like a lock and key, communicating signals in an initialization process. The NES simply ignored cartridges that lacked the security chip, and Atari's engineers were unable to duplicate it.

In 1988, as Nakajima agreed to release licensed versions of *Pac-Man*, *RBI Baseball*, and *Gauntlet*, his lawyers found another method of analyzing the security chip. They illegally obtained a reproduction of the 10NES program through the Copyright Office by signing a false affidavit stating that they needed it for use in a copyright infringement suit Nintendo had filed against them. The suit was entirely fictional.

After deciphering the 10NES program, Atari developed its own program—the Rabbit program—to unlock the NES. The Rabbit program generates signals indistinguishable from the 10NES program. . . . The Rabbit gave Atari access to NES owners without Nintendo's strict license conditions.⁸

—Judge Fern M. Smith

Submitting the false affidavit was a mistake that would haunt Atari in future court actions. According to several accounts, a team of Atari engineers running a “Clean Room” operation was close to breaking the 10NES code. By illegally obtaining a reproduction of the code from the Copyright Office, Atari tainted the operation.

Some paralegal went to the copyright office, got the information and showed it to somebody at Atari. The fact that he had access to it basically means that somebody had the information and showed somebody at Atari, [which] basically means that we had knowledge of it. So, some paralegal fucked up!

—Ed Logg, game designer, Atari Games Corporation

On December 12, 1988, with three NES-licensed games on the market and a complete understanding of NES marketing and security, Atari filed suit against Nintendo, alleging that Nintendo was “improperly using its patent and greater

market share to monopolize the home video game market.” Atari asked for \$100 million in damages. All of the pieces were in place. Through the original licensing agreement, Atari had obtained access to retailers. Through the Copyright Office, it had obtained a complete understanding of NES technology. Atari could now manufacture its own cartridges, and the court action would work as a preemptive strike against any injunctions Nintendo might file.

One unanswered question about this case is why Hideyuki Nakajima chose such an aggressive tact for dealing with Nintendo. Some people quietly speculate that it dated back to licensing disagreements between Hiroshi Yamauchi, president of Nintendo, and Namco president Masaya Nakamura. Nakamura received some preferential treatment when he originally signed Namco as a Nintendo licensee, but when the contract expired, Yamauchi refused to renew those preferential terms. The change in terms led to an angry rift between Nintendo and Namco.

Mr. Yamauchi tried to take away all of the special provisions of the contract that Namco enjoyed as a first licensee, and because of that, the relationship suffered. I became very upset about the whole situation at that time, but looking back, that was just his business management philosophy. I shouldn't have become upset about it, although I must admit that I was pretty upset at that time. But I have no ill sentiments now.

When you consider the technical expertise and the depth of the technical know-how of Namco, which Namco currently possesses as reflected by the success of Namco games, Nintendo may have lost a lot more than Namco by taking that approach.

—Masaya Nakamura, founder, Namco

One event that may have added to Hideyuki Nakajima's resentment of Nintendo, and Minoru Arakawa in particular, was a small dinner gathering at Arakawa's house in August 1988, at which Nakajima was a guest. According to several accounts, Arakawa, Howard Lincoln, and Nakajima had just finished dinner and gone out on a deck to talk. While they were outside, Arakawa, known for taking short naps whenever the urge struck, fell asleep for a few minutes. According to Lincoln, Nakajima seemed offended when he left the party later that evening. (Nakajima may have taken offense to Arakawa's falling asleep,

but it should be noted that Atari had already used the false affidavit to obtain the reproduction of the 10NES by that time.)

I've heard that story many times, and I don't know that that influenced or impacted the licensing decision. I do know that there was a fairly consistent falling out between Nintendo and Atari Games. What the ultimate rationale behind that was, I don't know that we'll ever fully know, but as far as Mr. Arakawa's dozing off with Hide, I somehow doubt that was the cause. I think Hide was bigger than that.

**—Ted Hoff, former senior vice president of Sales and Marketing,
Atari Games Corporation**

Nakajima took an unusually aggressive stance toward Nintendo, and Arakawa responded by taking an uncharacteristically patient approach toward Atari Games. Ever since the Universal Pictures suit over *Donkey Kong*, Nintendo had a reputation for using the legal system to its advantage. In this case, however, Nintendo waited eleven months before responding to Atari's charges by lodging a suit of its own. In November 1989 Nintendo launched a countersuit, accusing Atari of patent infringement, breach of contract, unfair competition, and tortious interference with contract. Before filing the suit, Nintendo took other measures, sending letters to retailers warning them not to carry Tengen products. Stores caught selling the games, the letters warned, would be subject to legal action.

This strategy caught Atari off guard and proved effective. Nintendo was the most lucrative product in the toy industry at the time, and many retailers would simply collapse if Nintendo cut off their supplies. Nintendo cartridges were one of the few toy products that sold steadily all year long. Though a few retailers such as Toys "R" Us considered ignoring Nintendo's demands, every major chain eventually removed Tengen cartridges from its shelves and refused future shipments. Caught with expensive inventory and no sales outlets, Atari asked the courts to stop Nintendo from threatening customers. Judge Fern Smith responded by enjoining both Atari and Nintendo from interfering with each other's customers. Both companies appealed the decision, and the injunction was lifted on both sides, opening the way for Nintendo to continue threatening retailers who stocked Tengen products.

The court battle went much the same way, with Atari's lawyers making small gains, then finding themselves in a bad position. They attempted to make the point that the data stream created by the security chips during the authentication process was not protected by copyright law. On this issue they were correct. The copyright laws that protect computer software clearly stated that while programs could be covered by a copyright, the data they produced could not. Under that interpretation, Atari had the right to copy the data stream created by 10NES.

Atari also argued that Nintendo's lock-out security gave the company an unfair advantage in the marketplace and that duplicating the code was the only way to break into the market. Atari then took the case one step further, asking for information that would ensure compatibility with future Nintendo consoles. The judge declined that motion.

By requiring independent game developers to carefully study a particular security system and discern which program instructions are truly necessary for present compatibility, console manufacturers will have a limited period of time in which to control the market for compatible games. In this time period, some third party game developers are likely to enter license agreements with Nintendo, particularly if they have limited resources. After a relatively short period of time, however, other developers will enter the game market with independently produced, but still compatible games. In addition, if third party developers who entered license agreements later find the license agreements to be onerous, there still exists the option of reverse engineering the security system after the expiration of their license agreement. Thus, a fair use defense which allows copying for present compatibility balances the incentives for both the game developers and console manufacturers.

The extension sought by Atari would destroy this balance by eliminating the console manufacturers' lead time.⁹

—Judge Fern M. Smith

The case came down to a few simple points. Since Atari did not dispute Nintendo's ownership of 10NES, the trial revolved around two specific questions: Was Rabbit a direct copy of 10NES? And would companies need to copy the program to compete in the market? The question of copying was

solved when Nintendo showed that Atari had duplicated nonfunctional parts of the 10NES code.

In particular, the Court finds that the existence of program elements in the Rabbit program which serve no function other than authenticating the console firmly establish illicit copying.¹⁰

—Judge Fern M. Smith

Nintendo's lawyers were also able to prove that there was more than one way around the NES security system and that Atari did not need the illegally obtained reproductions from the Copyright Office to access the NES.*The judge found in favor of Nintendo, but the battle with Atari was only beginning.

Tetris

The most notable casualty of the war between Nintendo and Atari Games was the Tengen version of the game *Tetris*, a game that was created by Soviet mathematician Alexey Pajitnov while working at the Computer Center of the Moscow Academy of Science. Pajitnov came up with a computer game in which players organized two-dimensional geometric shapes. The blocks would fall from the top of the screen, and players had to rotate and place them before they landed. If the player organized the blocks into complete and unbroken lines as they landed, the blocks would disappear. If the line was broken, it would remain on the screen and blocks would pile on top of it. The game ended when the blocks reached the top of the screen.

Pajitnov developed the game on an Electronica 60, an antiquated computer that was the Russian clone of the PDP (Programmable Data Processor) computers made for the Department of Defense by Digital Equipment.** Because his computer could display only alphanumeric characters, Pajitnov teamed up with Vadim Gerasimov, a gifted young hacker with access to a PC, to create a better-looking interface for the game.

* This point would become pivotal in later cases.

** Steven Russel developed *Spacewar* on a PDP-1. Pajitnov's Electronica 60 was considerably more powerful, the equivalent of a PDP-11.

In 1986, a friend of Pajitnov's sent a copy of *Tetris* to the Institute of Computer Science, in Budapest, Hungary. It was there that Robert Stein, president of the London-based software company Andromeda, happened to see the game.

Sometime in 1986, Robert Stein was in Hungary and saw *Tetris*. . . . just one of the pirate copies. I didn't call them pirated back then, I gave it out myself everywhere. So, he feels that this is a really good game and approached the Computer Center and wanted to make a license and publish it. He had no idea what it means to deal with the Russians, with the Russian bureaucracy.

—Alexey Pajitnov, creator, *Tetris*

Stein contacted the Moscow Academy of Science and began negotiating with Pajitnov for the rights to *Tetris*. Thinking Pajitnov had the authority to make a deal, Stein next began calling executives at large software publishers with an offer to license the game. He sold the European computer rights to *Tetris* to Mirrorsoft and the American rights to Spectrum Holobyte, both backed by British publishing magnate Robert Maxwell. Stein had not counted on the difficulties of dealing with the Soviets, however, and granted these rights before securing them for himself. Mirrorsoft and Spectrum Holobyte released versions of *Tetris* in January 1988. The Soviets did not sign Stein's contract until the following month. Stein's contract specifically gave him control of the personal computer versions of *Tetris* created for Western markets.

He finally came to us and said, "Well, I want this right, I want those rights, I want those rights." So, basically, because we promised him the PC rights, they were given to him, and we legalized our relationship at this point. But the game was on the shelf already and I do believe that he sold his video rights as well without having an agreement. He approached us immediately, asking for all the rights, but we didn't know who the hell he was.

—Alexey Pajitnov

Then the confusion began. Spectrum Holobyte sold the Japanese computer and coin-op rights of *Tetris* to an entrepreneur named Henk Rogers, who had strong ties to Nintendo. At the same time, Mirrorsoft sold the exact same

rights to Atari Games. Mirrorsoft wielded more power in the Maxwell organization, so the rights went to Atari. Atari, in turn, sold the Japanese coin-operated game rights to Sega Enterprises and the Japanese console and PC rights to Rogers. What nobody realized was that Stein had never received the rights to make any of these deals.

After looking over the various arrangements, Rogers realized that no one owned the handheld rights to *Tetris*, so he flew to Moscow and met with the Soviets. He had hoped to secure the rights as an agent for Nintendo. Nintendo was preparing to unveil the Game Boy, and Arakawa thought *Tetris* would be the perfect lead title for the new handheld game system. While Rogers was there, the Soviets surprised him by offering the worldwide video game rights as well. He had been under the impression that Atari and Mirrorsoft controlled those rights, and fearing a legal battle with those companies, Rogers brought Nintendo into the negotiations. On March 22, 1988, Howard Lincoln and Minoru Arakawa signed a contract with representatives of Electronorgtechnica (ELORG), the Soviet agency handling the transaction, sealing the worldwide home video game rights to *Tetris*.

Atari Games had already begun work on the Tengen version of *Tetris* for the NES by that time.

I was there when they locked up *Tetris*. The *Tetris* story was kind of an interesting one, and to this day the people at Tengen believe that the Russians double dipped. The product was in negotiation for licensing, and at virtually the same time, the product was licensed to two companies. We had manufactured *Tetris* and put it on the market, and, in fact, it became the number one seller on the Nintendo platform.

—Ted Hoff

On March 31, nine days after signing the contract in Moscow, Lincoln and Arakawa sent a fax to Hideyuki Nakajima, informing him that Nintendo had secured video game rights to *Tetris*. Two weeks later, Atari Games quietly filed for a copyright for the game.

Atari released its Tengen version of *Tetris* in May, 1989; Nintendo released its version one month later. The Tengen version, which was created by veteran

arcade designer Ed Logg,* had both single-player and two-player modes and looked almost exactly like the arcade game. Nintendo's version was a single-player game. Most reviewers agreed that Tengen had done a better job with the game.

Judge Smith, who handled the case concerning Atari's duplication of the 10NES, presided over the *Tetris* case as well. The trial hinged on determining who had legal ownership of the game. Nintendo's pedigree was obviously stronger. Nintendo had signed statements from Soviet officials confirming the sale and a note signed by Stein, defining computers as PC computers with, among other things, a keyboard and a monitor. Recognizing that Nintendo would almost certainly prevail when the case went to trial, Judge Smith granted Nintendo's motion to force Atari to recall its cartridge. The case ended without a trial, however. On November 13, 1989, Smith canceled the trial and ruled that Nintendo owned the rights to the game.

I think to this day, anyone you talk to will certainly say that the best *Tetris* was the two-player *Tetris* that came out on Nintendo and was published by Tengen. Without a doubt, it was the best *Tetris*. At one point, you could look in the back of any of the gaming magazines and find people who would be willing to pay you \$300 for a Tengen *Tetris* cartridge.

There were 268,000 of them locked up, bolted, padlocked in Milpitas on Sycamore [Street]. If people knew that they were \$300 each and knew that there were that many of them, they probably would have picked the lock. But that was a well kept secret in a dark room. And those cartridges were never shipped. When I left the company two years ago, the cartridges were still under lock and key. My understanding is that they were subsequently destroyed.

—Ted Hoff

Nintendo sold more than 3 million copies of its NES *Tetris* cartridge and more than 40 million copies of *Tetris* cartridges for Game Boy. (The game

* Logg, best known for creating the arcade games *Centipede*, *Asteroids*, and *Gauntlet*, deserves some credit for Atari's coin-operated version of *Tetris*. He converted the code he made for the Tengen NES cartridge to work in the coin-operated game, then Atari engineers Greg Rivera and Norm Avellar finished the game. The Tengen *Tetris* cartridge was finished nearly four months before it was released. Atari sat on it while the arcade game was hot.

came packed in with the system.) Pajitnov, the creator of the game, did not make any royalties from any of these sales, but his association with the game enabled him to emigrate to the United States. In 1996, all of the rights that ELORG had sold expired and reverted to Pajitnov. Hoping to help Pajitnov finally profit from the game, Henk Rogers helped him establish the Tetris Company, LLC., which would then control all rights to the game. From that time on, companies that made games based on *Tetris* had to purchase the rights from Pajitnov.

Sega Enterprises, Ltd. v. Accolade, Inc.

Ordinarily in a trademark case, a trademark holder contends that another party is misusing the holder's mark or is attempting to pass off goods or services as those of the trademark holder. The other party usually protests that the mark is not being misused, that there is no actual confusion, or that for some other reason no violation has occurred. This case is different. Here both parties agree that there is misuse of a trademark, both agree that there is an unlawful mislabeling, and both agree that confusion may result. The issue here is—which party is primarily responsible?"

—Judge Stephen Reinhardt

In 1984, Bob Whitehead and Alan Miller, two of the original VCS programmers who left Atari and started Activision, founded a software company called Accolade. Accolade started out as a computer game company, but when Sega released the Genesis in 1989, Whitehead and Miller decided to convert some of their PC titles to work on the new console.

They had licensed approximately thirty other companies, and the licensing deal, it turns out, is a very expensive deal. One pays them between \$10 and \$15 per cartridge on top of the real hardware manufacturing costs, so it about doubles the cost of goods to the independent publisher. It winds up with the consumer generally paying a lot more for the cartridge, but that's the licensing deal, and they have a right to establish whatever they consider to be a fair deal.

We chose to not accept the licensing deal and instead to independently study the system, figure out how to do games for it, and then publish several games for the system.

—Alan Miller, cofounder, Accolade

Mike Lorenzen led a team of Accolade engineers that purchased a Genesis console and three game cartridges, then wired the console so that they could make printouts of the executable code of the games. They compared each game's code to locate identical chains, believing that all of the games would use the same programming instructions to disable any security locks Sega placed in the Genesis. They used this information to create a "development manual" for making Genesis games.

According to Accolade, at this stage it did not copy Sega's programs but relied only on the information concerning interface specifications for the Genesis that was contained in its development manual. Accolade maintains that with the exception of the interface specifications, none of the code in its games is derived in any way from its examination of Sega's code.¹²

—Judge Stephen Reinhardt

Accolade released *Ishido*, its first Genesis game, in 1990. Previously released as a Macintosh and PC computer game, *Ishido* was a strategy board game in the same vein as *Ga*.

Like Nintendo, Sega created security systems in its consoles to guard against software pirates and unlicensed publishers. In 1990, the company unveiled Genesis III, a slightly modified version of the Genesis console that included an externally developed security system called the Trademark Security System (TMSS).

The most recent version of the Genesis, the "Genesis III," incorporates the licensed TMSS. When a game cartridge is inserted, the microprocessor contained in the Genesis III searches the program for four bytes of data consisting of the letters "S-E-G-A" (the "TMSS initialization code"). If Genesis III finds the TMSS

initialization code in the right location, the game is rendered compatible and will operate on the console. In such case, the TMSS initialization code then prompts a visual display for approximately three seconds which reads "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD" (the "Sega Message").¹³

—Judge Stephen Reinhardt

With Genesis III, Sega created a double security gate. To make unlicensed cartridges, software publishers had to discover how to unlock the security system, then face charges of misrepresentation since the TMSS authentication process triggered the licensing message. Though all officially licensed games were Genesis III compatible, *Ishido* would not operate on the new console. Accolade did not learn about this development, however, until the Winter Consumer Electronics Show in January 1991, when Sega did a demonstration in which the new version of the Genesis screened the *Ishido* cartridge. By this time, the company was preparing five games for release.

Caught in a vulnerable situation, Accolade engineers scrambled to discover what piece of code the licensed cartridges used to satisfy TMSS. They found their answer in a tiny segment in the "power-up" sequence of the game code that had no identifiable function. Lorenzen noticed it during his first round of reverse engineering and even sent a memo to Miller, stating that "it is possible that some future Sega peripheral device might require it for proper initialization."¹⁴ That code sequence was added to the games *Star Control*, *Hardball*, *Turrican*, and *Mike Ditka Power Football* before Accolade put them on the market. Accolade released a fifth game, *Onslaught*, as well, but the game code did not have the TMSS file in the correct location and would not run on Genesis III consoles.

On October 31, 1991, Sega Enterprises filed suit against Accolade, accusing the company of trademark infringement and unfair competition. One month later, Sega added copyright infringement to its charges. Accolade lodged a counterclaim, accusing Sega of false designation of origin and unfair competition. Among other things, the counterclaim stated that Sega injured Accolade's reputation by falsely attributing itself as the source of the unlicensed games.

The case was supposed to be heard by Judge Robert F. Peckham, a judge who had tried similar cases and whose views were thought to be sympathetic toward entrepreneurs.

The case was originally assigned to a federal judge here in San Francisco named Peckham, with whom we had some familiarity. We had been the plaintiff in a copyright infringement case and knew his thoughts on the copyright process and intellectual property laws in general associated with computer technology. We felt very comfortable with having him as the judge.

Unfortunately, he had a heart attack early on in the case and the case had to be reassigned. We were reassigned to a brand new federal judge named Barbara Caulfield, and she was a disaster.

—Alan Miller

When the two sides met in court, Sega asked Judge Caulfield to bar Accolade from manufacturing Genesis-compatible games and for Accolade to abandon future attempts to reverse engineer Genesis technology. For its part, Accolade asked the court to stop Sega from manufacturing or selling Genesis III consoles.

Sega began the case by establishing that Accolade's games contained illegal reproductions and adaptations of Sega Enterprises, Ltd.'s copyrighted material. Accolade defended its position by appealing to the Fair Use Doctrine.

The criteria to be considered in determining whether a particular use is fair use include:

1. The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
2. The nature of the copyrighted work;
3. The amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
4. The effect of the use upon the potential market for or value of the copyrighted work.¹⁵

—Judge Barbara A. Caulfield

In Judge Caulfield's decision, she stated that the Fair Use Doctrine offered Accolade no protection. Since Accolade was a game manufacturer, the Genesis-compatible games were clearly made for financial gain. They would compete with Sega-licensed games in the marketplace, and she felt that they might indeed diminish the value of Sega's copyrighted work.

Accolade's game cartridges compete directly with those of SEL [Judge Caulfield's notation for Sega Enterprises Ltd.], which has likely lost sales as a result of Accolade's copying. In addition, since SEL's disassembled code is an "unpublished work," it is subject to a narrower scope of fair use.¹⁶

—Judge Barbara Caulfield

As to the charges of trademark infringement, Judge Caulfield sided with Sega. In her decision, she pointed out that Accolade copied the S-E-G-A code that triggered the Sega logo and licensing message. Accolade's lawyers explained that there was no way of knowing that the TMSS code would bring up the trademark and licensing messages when the code was added to the games. Accolade engineers had simply recognized that this small file could be found in games that worked on the new console and was not present on games that were screened out. In her decision, Judge Caulfield dismissed this argument.

Accolade boldly inserted SEL's code into its games before SEL released the Genesis III into the marketplace, and thus without fully realizing the consequences. Accolade took that risk, and cannot now shift the responsibility to SEL and SOA (Sega of America).¹⁷

—Judge Barbara Caulfield

Accolade's lawyers argued that Genesis III would not read a game unless it contained the TMSS code, and by definition the code would trigger the trademark messages. This argument, however, was severely weakened when a Sega engineer named Takeshi Nagashima was called to testify. Nagashima claimed that competitors could create games that would work on Genesis III without the TMSS code. He then produced two cartridges that did not have the code. When he demonstrated them before the court, they ran without displaying S-E-G-A or the licensing message. Sega offered the cartridges for inspection by Accolade's defense team but refused to allow Accolade engineers to inspect the cartridge or to reveal how the code had been modified.

On April 3, 1992, Judge Caulfield ruled in favor of Sega and enjoined Accolade from "disassembling, translating, converting, or adapting" the codes in Sega's games. She also ordered Accolade to stop manufacturing, distributing,

and developing Genesis-compatible products. The decision meant that Accolade, a relatively small company, was stuck with thousands of worthless cartridges. Six days later, at Sega's request, Judge Caulfield added an order that Accolade recall all Genesis-compatible games within ten business days. Though the recall was quickly repealed, the rest of Caulfield's injunction remained in effect for several months.

She imposed an injunction against Accolade from doing any work at all with Sega cartridges. We could not sell the cartridges we had developed. We had to immediately stop development on all of our Sega-related products. This was just terrible. Just to fight the injunction, we had to pay at least a half million dollars in legal fees, and the commercial damage associated with this injunction ultimately proved to be somewhere around \$15 to \$25 million to our company.

She bought Sega's argument that it was impermissible to study computer systems and figure out how they worked, and in addition, to bring out competitive software. This was a fundamental step backward from the way that product development had always been done in the Valley and in general throughout the world.

—Alan Miller

Accolade appealed the decision, and the case went before Judge Stephen Reinhardt of the Ninth Circuit Court of Appeals on July 20, 1992. Judge Reinhardt interpreted the Fair Use Doctrine differently than Judge Caulfield. He understood the doctrine to suggest that when there is no other means of understanding how a system works, and when a legitimate reason exists for needing to gain that understanding, reverse engineering was indeed a fair use of copyrighted technology. He applied a similar approach toward the false trademark message.

The question is whether the computer manufacturer may enjoin competing cartridge manufacturers from gaining access to its computers through the use of the code on the grounds that such use will result in the display of a false trademark. Again, our holding is based on the public policies underlying the statute. We hold that when there is no other method of access to the

computer that is known or readily available to rival cartridge manufacturers, the use of the initialization code does not violate the Act even though that use triggers a misleading trademark display.¹⁸

—Judge Stephen Reinhardt

Judge Reinhardt noted that the TMSS file, which contained somewhere between 20 and 25 bytes of data, was minuscule when compared to the 500,000 to 1,500,000 bytes of data contained in the entire game. The data in the games, according to Reinhardt were overwhelmingly original and deserved to compete in a free market. This, he felt, was to the benefit of the public.

There is no basis for assuming that Accolade's *Ishido* has significantly affected the market for Sega's *Altered Beast*, since a consumer might easily purchase both; nor does it seem unlikely that a consumer particularly interested in sports might purchase both Accolade's *Mike Ditka Power Football* and Sega's *Joe Montana Football*, particularly if the games are, as Accolade contends, not substantially similar.¹⁹

—Judge Stephen Reinhardt

Sega's attorneys defended the original decision by pointing out that their client had invested time and capital designing and manufacturing the Genesis. Even after Genesis shipped, Sega continued spending millions of dollars marketing it. They characterized Accolade as a "free rider," benefiting from time and investment. Reinhardt dismissed this argument, however, as the "sweat of the brow" rationale for copyright protection."

He was also unimpressed with Nagashima's demonstration of a game cartridge that initialized in Genesis III without activating the trademark signals. Reinhardt stated that "At most, the Nagashima affidavit establishes that an individual familiar with the operation of TMSS can discover a way to engineer around it." Just as Judge Caulfield had said that Accolade took a risk in adding the TMSS code and could not be excused by claiming it did not know that using the code would result in a trademark abuse, Judge Reinhardt now held Sega responsible for attaching its trademark to an unlicensed game.

Sega knowingly risked two significant consequences: the false labeling of some competitors' products and the discouraging of other competitors from manufacturing Genesis-compatible games. Under the Latham Act, the former conduct, at least, is clearly unlawful.²⁰

—Judge Stephen Reinhardt

Though he did not completely absolve Accolade of all wrongdoing, Judge Reinhardt struck down the injunctions handed down by Judge Caulfield. The immediate ramifications of Judge Reinhardt's rulings were short lived. Within a year of the trial, Accolade released a basketball game titled [Charles] *Barkley Shut Up and Jam!* as an official Sega licensee. The long-term ramifications of the case were significant, however. *Sega Enterprises v. Accolade* has been cited in nearly every video game trial involving reverse engineering and unlicensed products since 1993.

States of NY and MD v. Nintendo of America

In 1988, Nintendo announced that there was a worldwide shortage of the ROM chips used in Famicom and NES game cartridges. All publishers, Nintendo included, would be given chip allotments that averaged approximately 25 percent of their original orders. This development had a two-edged effect. Many company executives complained that they were not able to sell as many games as they hoped. On the other hand, the shortage ensured that nearly every cartridge that was manufactured that year got sold. Consumers seemed to purchase anything they could find as long as it carried the label "Nintendo."

Overall, our licensees enjoyed the shortage because everything they produced got sold, but everybody wanted to have a little more than allocated.

—Minoru Arakawa, president, Nintendo of America

Some licensees simply accepted the shortage, while others accused Nintendo of purposely inventing the shortage in an effort to further control the market. Hide Nakajima and Atari Games accused Nintendo of America of unfair competitive practices. Other nonrelated complaints were leveled against

Nintendo as well. In a 1989 case, the Tramiels accused Nintendo of shutting Atari Corporation out of the marketplace and filed a \$500 million suit. In another suit, filed in 1991, Nintendo found itself in court against the attorneys general of all fifty states and the District of Columbia.

The attorneys general accused Nintendo of a variety of offenses that seemed to borrow from all of the suits that had been filed against Nintendo. They accused the company of price fixing, shutting out competitors, overregulating licensees, and bullying retailers. New York Attorney General Robert Abrams, who led the investigation and ensuing case, said that Nintendo threatened to slow down or cut off supplies to retailers who lowered the price of the games by as little as six cents. When the case finally went before Judge Sweet, the same New York judge who presided over *Universal Studios/MCA v. Nintendo*, it focused mostly on allegations of price fixing and ended in a settlement.

The results of the case are almost humorous. On October 17, 1991, Judge Sweet approved a rather absurd settlement in which Nintendo agreed to mail coupons giving consumers who had purchased NES systems between June 1, 1988, and December 31, 1990, a \$5 discount on the purchase of their next game cartridge. To make sure that the people who might have purchased the consoles got the message, Nintendo agreed to run advertisements in *TV Guide*, *USA Today*, four video game magazines, and 800 newspapers. According to the terms of the agreement, Nintendo would have to make up the difference if the coupon sales added up to less than \$5 million in discounts. Nintendo also agreed to pay the states and the District of Columbia \$1.75 million for their administrative costs and \$3 million for other uses.

Nintendo will pay \$3 million to the Attorney Generals for use at the States' option for one of the following purposes: antitrust enforcement, deposit into a state antitrust revolving fund, defraying the costs of experts used in multistate antitrust investigations, benefiting those unidentified consumers for whose benefit the settlement was entered, or payment into a state's treasury.²¹

—Judge Robert Sweet

In an article titled “Please, Br’er Fox! Don’t Throw Me in the Briar Patch!” *Forbes* described the settlement as less than punishing for Nintendo.

The deal Nintendo cut to settle antitrust complaints by the Federal Trade Commission and some states turns out to be another shrewd move by the Japanese videogame manufacturer. Nintendo agreed to mail 5 million \$5 coupons good on Nintendo cartridges, plus pat-myself-on-the-back letters from some local attorney generals. That's some punishment. Nintendo has just put a new 16-bit machine on the market, but the coupons are only good for the old eight-bit cartridges. So the deal helps clear old inventory as well as bring in lookers for the more powerful new sets.

Please, Br'er Attorney General . . . !²²

The FTC investigation may not have resulted in a large punitive settlement, but it served notice to Nintendo of America and its parent company in Japan that more investigations could follow if complaints continued. Though there is no proof that company executives made this decision because of the lawsuit, in October 1990 Nintendo announced that its licensees were free to manufacture their own cartridges and to publish games on competitors' consoles.

In about, I think it was 1989 or 1990, we made a business decision that we did not need the exclusivity clause. Now, it's true we were in litigation with Atari Corp. We were in litigation with Tengen and the FTC was moseying around; but we made a decision that we would no longer require the exclusivity clause. We would no longer enforce it and we would not put it into any new agreements.

Those clauses, from our point of view and from our lawyers' point of view, were perfectly legal under the antitrust laws. It was determined to be that way by a jury and by multiple courts, including a court of appeals, in the various litigations that we had.

—Howard Lincoln

Lewis Galoob Toys v. Nintendo of America

In 1990, Lewis Galoob Toys obtained the U.S. manufacturing rights for a device called GameMage that enabled players to access hidden codes that designers placed in games as Easter eggs. Releasing the product in the United States as Game Genie, Galoob packaged the “game enhancer” with a “programming manual” containing codes for hundreds of games. Through Game

Genie, players could enter up to three codes at one time, codes that made games easier or gave players extra lives. The game *Contra*, for instance, allowed players to give their soldiers powerful weapons or set the game up so that the enemy soldiers did not shoot their weapons. The codes for *The Legend of Zelda* could give players endless supplies of bombs, let them purchase items in the game for free, and make Link, the hero of the game, invincible. Spokespeople for Galoob said that Game Genie added new life to old games, but Nintendo saw it as a threat and notified the toy manufacturer that the device infringed on copyrighted material. Galoob took Nintendo to court to ask for a declaration that Game Genie did not infringe upon protected material; it also tried to pacify Nintendo by offering to license the product through the company. The offer was declined.

In June 1990, Nintendo applied for an injunction to bar the toy manufacturer from distributing Game Genie. In a preliminary hearing, Judge Robert W. Schnacke granted Nintendo's request on the likelihood that Nintendo could win the case. In April 1991, the case went to court before Fern Smith, the same judge who had presided over *Atari Games Corporation v. Nintendo of America*.

Judge Smith's interpretation of the Fair Use Doctrine would prove central to both Nintendo's and Galoob's case. Nintendo claimed that Game Genie was a derivative work. It did not play original games; rather, it altered the copyrighted work of other companies. Nintendo's lawyers compared it to the unauthorized "speed-up kits" that were used to enhance arcade games. They referenced the case of *Midway Manufacturing v. Arctic International*, in which a judge barred a company called Arctic from selling chips that accelerated the arcade version *Galaxian*.^{*} Judge Smith, however, disagreed with Nintendo's argument, citing that Game Genie did not physically incorporate portions of any copyrighted works and that it in no way diminished the game market.

One interesting question that emerged in this case was whether Galoob was in fact infringing on Nintendo's copyrights or whether the real perpetrators would be consumers using the device. The argument suggested that Game Genie was simply an adapter onto which consumers attached a game car-

^{*} In the Arctic case, arcade owners replaced the original chips with new ones that incorporated Namco's original programming along with new code. A more accurate comparison would have been *Atari Games v. General Computer*, since the chips General Computer created to accelerate *Missile Command* were used to enhance Atari's chips and modified, rather than borrowed, the original code.

tridge. The decisive factor in the case, however, was that Nintendo's lawyers could not demonstrate to Judge Smith's satisfaction how Game Genie impacted their client's business.

Nintendo has failed to show any harm to the present market for its copyrighted games and has failed to establish the reasonable likelihood of a potential market for slightly altered versions of games at suit.²³

—Judge Fern Smith

While Judge Smith was unable to certify that Game Genie users would not infringe on Nintendo's copyrights, she did conclude that Galoob had not violated the Copyright Act and ruled in favor of the toy manufacturer, ordering Nintendo to pay the company \$15 million for lost sales. When the case came up for appeal before Judge Jerome Farris in 1992, he affirmed Judge Smith's opinions. Nintendo did not concede defeat, however, until the U.S. Supreme Court declined to hear arguments on the case on March 22, 1993, sealing the decision.

Alpex Computer Corporation v. Nintendo of America

With the exception of the original Magnavox Odyssey, which had several games hardwired into its circuitry, all of the home television game consoles that re-tailed in the early 1970s were single-game (or dedicated) systems. In 1974, Alpex Computer Corporation created and patented a technology that enabled consoles to play multiple games stored on ROM chips stored in game cartridges. The first company to license Alpex's technology was Fairchild Camera and Instrument, which used it in the Channel F game console released in 1976.* Two years later, Alpex applied for patent protection on that technology and received patent number 4,026,555, also known as the "555 patent."

After receiving its patent, Alpex embarked on a campaign to enforce it, selling nonexclusive licenses to companies that infringed. Magnavox, Atari, Mattel, Bally, and Coleco were just a few of the companies that Alpex contacted. Though the other settlement sums are not public, it is known that Atari paid \$380,000 to settle the affair.

*The Fairchild Channel F was the first game console to use interchangeable game cartridges.

Alpex declared Chapter 11 bankruptcy and ceased operation in 1983. As the company dissolved, creditors found that its only valuable asset was the “555 patent.”

In 1983, after the settlement with Atari and another with Magnavox, counsel for Alpex sent infringement letters to approximately seventy companies. These letters announced that Alpex had recently granted licenses under the patent to Atari and Magnavox and stated that Alpex had “recently obtained information indicating that your company manufactures and/or sells video game cartridges and/or consoles which may infringe the subject patent.”²⁴

—Judge Kimba Wood

Of the seventy companies that received the letter, six companies expressed interest in settling without litigation. By 1985, Alpex had won licensing agreements in suits against ten companies.* Most companies preferred to pay Alpex rather than risk a court battle. This was especially true of Japanese companies, which were supposedly scared that U.S. jury awards might reflect anti-Japanese sentiments.²⁵ Sega Enterprises, for instance, elected to purchase a license from Alpex in 1993. Nintendo, however, refused to settle, so Alpex sued for willful infringement of the “555 patent.”**

The case, which was tried before Judge Kimba Wood*** of the South New York District in Manhattan, hinged on a question of technology. Nintendo claimed that while the NES did use interchangeable cartridges, the bit-mapping technology developed by Alpex was not powerful enough to handle the sophisticated images in NES games.

The television raster comprises numerous discrete dots or bars, approximately 32,000, which the cathode ray beam illuminates on a standard cycle, which in turn creates the image on the television screen. The patented invention

* Alpex had an ongoing suit with Parker Brothers, the result of which was stayed pending the results of the case against Nintendo.

** At one point Nintendo offered a \$3.9 million settlement.

*** Bill Clinton nominated Kimba Wood for the post of Attorney General after the nomination of Zoe Baird was withdrawn. The process ended with Janet Reno getting the position.

requires sufficient RAM to accommodate each of the approximately 32,000 memory positions needed to represent the raster image. The RAM holds at least one "bit" of data for each position in the memory "map" of the raster. Accordingly, this video display system is called "bit-mapping."²⁶

—Judge Glen Archer

According to Nintendo's defense, Alpex's RAM-based technology was simply too slow. Nintendo's lawyers claimed that the NES featured a patented "picture processing unit" (PPU) that received pre-formed "slices" of data.

The PPU receives preformed, horizontal slices of data and places each slice in one of eight shift registers, each of which can store a maximum of 8 pixels. These slices of data are then processed directly to the screen. The PPU repeats this process to assemble the initial image on the screen. Thereafter, it repeats the process as necessary to form changes in images throughout the progression of the game. Nintendo refers to the PPU as an "on-the-fly" system.²⁷

—Judge Glen Archer

The case turned into a debate about whether "on-the-fly" graphics did indeed differ from the technology in the Alpex patent. Nintendo maintained that while Alpex's bit-mapping was fast enough for games with "linear player images," it lacked the speed for games with "animated cartoon characters," such as *Mario*. The highlight of the case was when John Strauch, lead attorney on the Alpex team, cross-examined Nintendo expert witness Stephen Ward. Strauch questioned Ward about the differences between linear player images and animated cartoons. Strauch tried to corner Ward into explaining the precise differences between the two kinds of graphics. Ward, either unwilling or unable to specify, refused to be pinned down, although he maintained that he could detect concrete differences, having viewed hundreds of games.

To clarify, Strauch drew a stick figure that he identified as a drawing of a hockey player. Ward agreed that the character would definitely be classified as a linear image. Next, Strauch colored the figure red and asked if it was still a linear image. When Ward said that it was, Strauch drew a bulge on the

player that he identified as a hip and asked if it was still linear. Ward answered that they had “entered into a region” in which he had no answer. Strauch next added two little arms and asked if they were still in the gray area in which Ward could not distinguish between linear images and cartoons. Ward said, “I believe that one could arbitrarily decide to draw the line either way in that case.”

“Now using your terminology and understanding, we are using your terminology the way you want to define this, if I add a nose, are we still in a situation where we can put this one on either side of the line?”

Ward responded, “I think that at some point when you add features that make it look like a human form, for example, then it is no longer a linear player image, and if you keep adding noses and arms, then you do cross that line.”

Strauch: Let me add a tiny tail here. Let’s say this is an animal combination human-animal cartoon. Just adding a tiny tail. Have we yet reached the point where you are willing to say that it is not a linear image player?

Ward: We are getting close to that point, yes.

Strauch: Okay. Why don’t we put a beard on it. Where are we now?

Ward: Okay. I am willing to say that it is not a linear image player.

Strauch: Okay, so now I know how you are drawing the line. If we have a nose, two little arms, a tail, more hip, and the configuration I have drawn, except for the beard, you don’t know whether it is a linear image player or not; but if we add the beard, it is not.²⁸

According to Alpex attorneys John Strauch and Thomas Young, members of the jury tried to duck behind the rail of the jury box so that the rest of court would not see them laughing during this exchange. The jury agreed with Alpex, finding that Nintendo willfully infringed Alpex’s patent and that 118 of the games that had been introduced for the NES before the patent expired on July 31 infringed on the “555 patent.” Alpex was awarded \$208 million for damages. Stating that she saw “scant” evidence of willful infringement, Judge Wood did not add further punitive damages to the award, but she allowed interest and legal fees to be tacked on, bringing it to \$252 million—one of the largest patent awards in history.

A Part of Society

By 1989, Nintendo had become a regular fixture in the news. The media reported on the company's phenomenal record sales and press events and sometimes covered curious anecdotes associated with the company. The "Hands-Free" Controller, developed by Nintendo engineers to enable quadriplegics to play games, earned the company print and broadcast attention. To use this special controller, players rested their chins on a lever that worked like a steering device. A tube running from the controller to their mouths replaced the "A" and "B" buttons. "A" button functions were accessed by blowing into the straw, and "B" button functions were accessed by sipping.

The press also covered humorous human-interest stories such as an incident involving a burglar who noticed a Nintendo Entertainment System (NES) and couldn't resist trying it. Somebody noticed the criminal and reported him to the police. On arrival, the police found the burglar in front of the television, playing a game.* In another story, a bomb squad blew up an NES on the runway of Los Angeles International Airport. Airport security officers X-rayed the NES inside a suitcase and, unable to identify it, called the bomb squad. Fearing the unfamiliar object to be a bomb, the police detonated it.

I was quoted in *USA Today* on the front page that day, or . . . the next day and . . . something to the effect of "Well, we know we have a great product, but people don't usually get quite such a bang out of it."

—Richard Brudvik-Lindner

Unauthorized and Never Sued

Nintendo guarded against unlicensed companies making unauthorized NES, Game Boy, and Super NES cartridges, but an Arizona-based company, Wisdom Tree, slipped through its net unchallenged.

Wisdom Tree was the offshoot of Color Dreams, a company founded by U.S. engineers who reverse engineered the NES and found a way around the lock-out chip. Using this technology, Color Dreams published games such as

* This story has been confirmed by people who worked for Nintendo at the time, though the details may be exaggerated.

King Neptune's Adventure, *Pestertinator*, and *Metal Fighter*. One of the company's titles, *Menace Beach*, featured material considered highly risqué by NES standards. The goal of the game was to help a hero rescue his kidnapped girlfriend. Pictures of the chained-up woman were flashed throughout the game, and she had on less clothing in every shot. In the beginning, she wore a blouse and skirt; by the end of the game she was in a bikini.*

In 1989, Color Dreams spun off Wisdom Tree, a company that made NES games with Christian themes. For the most part, Wisdom Tree games were fairly indistinguishable from other video games and had the same basic side-scrolling, object-finding, enemy-shooting play. Some of the games had biblical trivia quizzes between rounds, and the themes of the games were adapted to convey biblical ideas. Wisdom Tree's first game, *Bible Adventures*, was released in December 1990. After a slow start, the company sold approximately 350,000 copies.

Basically, what we were doing was taking the garbage out and putting Bible content in. That's the whole reason for the company to begin with. We marketed almost 100 percent into the Christian bookstore market, not through secular channels. It took a while to get in. We got picked up by Focus on the Family, which gave us pretty much of an industry okay.

—Brenda Huff, co-owner, Wisdom Tree

Wisdom Tree eventually published seven NES games, along with four games for Game Boy,** three for Sega Genesis, and one for the Super NES. The company's library included several original games published by outside contractors and a couple of cosmetically altered Color Dreams games. *Sunday Funday*, for instance, was a thinly disguised version of *Menace Beach*. While the owners of Wisdom Tree were openly Christian, their game designers did not necessarily share their beliefs. People who later worked with the man who programmed *Bible Adventures* say that after working day and night on the project, he went to Las Vegas and blew his earnings in less than a week.

* *Menace Beach* was far tamer than *Peek a Boo Poker*, *Bubble Bath Babes*, and *Hot Slots*, three unlicensed games published by the Taiwanese software company Paneision, which featured anime-style drawings of naked women.

** Two of Wisdom Tree's Game Boy cartridges were not really games. The company published cartridges containing the text of the King James and New International versions of the Bible.

Wisdom Tree presented Nintendo with a prickly situation. The general public did not seem to pay close attention to the court battle with Atari Games, and industry analysts were impressed with Nintendo's legal acumen; but going after a tiny company that published innocuous religious games was another story. In 1994, Wisdom Tree tested Nintendo's ability to turn the other cheek by licensing the mazes and code to a game called *Castle Wolfenstein 3D* and converting them into an unlicensed Super NES game called *Super 3D Noah's Ark*. This was this one of the few unlicensed games to appear on the Super NES. In *Castle Wolfenstein 3D*, players ran through dungeons killing Nazi soldiers and guard dogs as they hunted for Hitler. In *Super 3D Noah's Ark*, which featured the exact same mazes, players shot food at little goats that had escaped from their pens.*

Ignoring Wisdom Tree was the only logical course of action. *Super 3D Noah's Ark* was released toward the end of the 16-bit generation, as growing numbers of people began using computers to play games. Though Wisdom Tree was one of the last companies to manufacture and sell NES and Super NES games, the company's focus eventually turned to publishing games for PCs.

The Return of Sega

One of my first jobs here was to take the Master System back from Tonka and bring it over to Sega. Then we closed down a lot of the development. We did not have the money to do anything big; our main focus of 1989 and 1990 was obviously Genesis.

—Paul Rioux, former executive vice president of finance,
Sega of America

Sega's alliance with Tonka did not prove completely satisfactory for either company. Despite its strong toy distribution network and a very generous advertising campaign, the Minnesota toy truck company sold considerably less than one million Master System game consoles in two years. When the con-

* This game was built into a special adapter that attached to any licensed Super NES cartridge. The chip in the licensed cartridge would disable the security chip, allowing the Super Nintendo to read the game.

tract expired, Sega quietly took back the system and inherited large inventories of unsold game consoles and cartridges. Clearing out Master System inventory, however, was not a major priority at the time. Sega had spent the last two years developing a powerful new game console that had twice the processing power of the NES/Famicom, and the product was finally ready for release in Japan.

Sega's new system, called the Mega-Drive, featured an impressive array of hardware. It was built around the 16-bit Motorola 68000 processing chip, the same chip that Apple used to power the Macintosh computer. This chip could process twice as much data per cycle as the 8-bit MOS Technologies 6502 chip Nintendo used in the Famicom. The Mega-Drive had a 512-color palette and could display as many as 64 colors on screen at any one time, compared to the NES's 52-color palette. The Mega-Drive even had a separate 8-bit processor for sound. All of that power translated into games with larger and more detailed characters, more complex graphics, faster action, and a game console that could compete with coin-operated game machines in the arcades.

With its headquarters in Tokyo, Sega Enterprises had the infrastructure needed to market the Mega-Drive in Japan. Bringing the system to the United States was another story. Hayao Nakayama, CEO of Sega Enterprises, and David Rosen, the chairman, had already experienced the problems of launching a game console through a small start-up operation. Nintendo, a company that had only recently entered the home video game market in the United States, had completely smothered the Master System out of the market by 1988. Attaching itself to Tonka, a strong company that knew little about the game business, also failed. In an interesting twist, Rosen decided to enlist the same company that Nintendo had tried to enlist before launching the NES—Atari Corporation.

Dave Rosen came to Atari and asked if we'd be interested in taking over the manufacturing, marketing, and distribution of Genesis. We came very close to making a hefty licensing deal so that Atari could jump into the 16-bit fray before Nintendo. The negotiations went pretty far down the stream, and as I recall, they fell apart when Jack [Tramiel] and Dave Rosen couldn't agree to the terms. Then Sega decided to do it themselves.

—Michael Katz, president, Video Game Division, Atari Corporation

Everybody's Expert

Video game companies have a certain incestuous relationship, and it is not uncommon for top employees to take jobs with their competitors. Bruce Lowry, for instance, resigned his job as Nintendo vice president of sales to become the president of Sega of America. When he left Sega, he moved to Europe to help Ron Judy run Nintendo of Europe. But of the many job shifters in the industry, few have had as illustrious a career as Michael Katz.

In the late 1970s, Katz, as marketing director at Mattel, oversaw the creation of the first handheld video games. From there, he moved to Connecticut to become vice president of marketing at Coleco. After five years at Coleco, he received an intriguing telephone call.

I was contacted by headhunters representing some venture capitalists and told about a company named Epyx, which they described as a \$1.5 million computer game company losing \$400,000 a year in Sunnyvale. I was anxious to get back to California, where my two kids lived. I hadn't lived in San Francisco for about seven or eight years, and my goal was to get back there.

I didn't know anything about Epyx and I had never heard of a venture capitalist. I liked the fact that I was being offered a CEO slot and some stock in a start-up, but I wasn't quite sure whether I wanted to do something risky like that. I had to make the decision on a January night in Connecticut. I was trying to get a fire started in my fireplace and it wouldn't start. As I was leafing through a computer gaming magazine, I came upon an Epyx ad. Just as I turned the page and discovered it, this flame burst in the fireplace. It was a complete coincidence. The fire that I'd been trying to start burst into a flame, so I considered that a divine message that Epyx was where I should go.

—Michael Katz, former president, Epyx

Katz became the president of Epyx in February 1983 and changed the company's entire focus. The company had severe financial problems and only had enough cash to maintain operations for approximately six months. Under Katz's direction, the company created three new product lines and hired Chiat Day, the same advertising agency that handled Apple Computer. Another of Epyx's new directions was the acquisition of outside software developer StarPath,

which was led by Bob Brown, one of the engineers involved in the creation of the Atari 2600. StarPath had abandoned a project based on the Olympic games. With the real Olympics only a year away, Katz had the company finish the project, which was released for the Commodore 64. *Summer Games* was released in 1984 and was followed up in 1985 with a sequel, *Winter Games*. Over the following years, these thematic “Games” titles became Epyx’s signature series and included a tremendously popular product called *California Games*.

Katz’s biggest interest, however, was in marketing hardware, not software. When two inventors named RJ Mical and Dave Needle approached Epyx in 1986 with a design for a color handheld video game system, Katz urged the board to adopt the project (which later became the Atari Lynx). Epyx eventually did work with Mical and Needle, but by that time Jack and Sam Tramiel had already lured Katz to accept a position at Atari Corporation.

I had lunch with Jack and Sam Tramiel one day, and they said, “What do you want to do?”

I said, “I want to form an Entertainment/Electronics division at Atari. I want to bring back video games, and that can help fund the new division. It can also fund the ST computer,” which was what Jack and Sam were all excited about.

So they said, “You can become president of the entertainment electronics division if you also become president of the video game division and become head of sales and marketing for the computer division.” I said that sounded fair. So in one lunch, which is what Jack and Sam are like, we made a deal. I got a new job and became head of the video game division, which, in Jack’s mind, had the main objective of getting a lot of profits so that the company could develop the ST computer.

—Michael Katz

Katz moved to Atari in 1986 and oversaw the rerelease of the Atari 7800 game console. Unlike the Master System, the 7800 was not meant to compete with the Nintendo Entertainment System head-on. Atari introduced it as a low-end alternative system that sold for \$30 less than its competitors. The 7800 barely dented Nintendo’s billion-dollar market, but it contributed to Atari’s best year since the fall of 1982. In 1988, Atari reached \$452 million in revenues.

We brought back Atari video games as the low price spread for three or four years and made a hell of a lot of profit. As I recall, we made about \$80 million of profit over that period. We brought back the 7800. We needed software for it, but, of course, this was the period when Nintendo created the market again in the U.S. and Nintendo had a lock on all the hot arcade titles. Nobody else, whether it be Atari or Sega or anyone, could get the hot arcade titles because Nintendo had exclusives.

It occurred to me that the standard for the last few years had not been arcade games. There was a core group of computer gamers who knew all the hot computer games, so I went to those companies who were just doing computer format. I went to Doug Carlston at Broderbund, to Ken Williams at Sierra, to Gilman Louie at Spectrum Holobyte, and to Alan Miller at Accolade, and asked if we could license games like *Hardball* and *Lode Runner*.

—Michael Katz

By the beginning of 1989, Katz needed a break from work. He had not taken a two-week vacation since graduating from college in 1967, and the Tramiels were notorious for placing high expectations on their executives. Tired and needing time to decide what he wanted to do with the rest of his life, Katz left Atari Corporation and spent the next three months traveling around the world. While he was gone, Sega released the American version of the Mega-Drive. It was called Genesis.

Genesis

Sega of America launched Genesis in two markets, Los Angeles and New York, on August 14, 1989. The console sold for \$189 and came with a single controller and the game *Altered Beast*. There were five additional games available at launch: *Thunder Force*, *Tommy Lasorda Baseball*, *Super Thunder Blade*, *Space Harrier II*, and *Last Battle*. A second wave of games arrived one month later.

As the game that came with the console, *Altered Beast* played an important role in convincing consumers about the power of Genesis's 16-bit processor. NES games generally had small characters occupying only a limited area on any game screen. The shape-shifting hero of *Altered Beast* was nearly half as tall as the screen and had recognizable facial features. The snakes, wolves, enemy

sorcerers, and other creatures that attacked him were also large and clearly drawn. In size, game play, and graphics, the Genesis version of *Altered Beast* was amazingly similar to the arcade game on which it was based.

In October, as the Genesis market expanded from New York and Los Angeles to a nationwide campaign, Sega of America announced the hiring of a new president and CEO, Michael Katz.

Dave Rosen asked me if I wanted to come to Sega and become president, so I joined Sega in October of 1989 and spent a year. And every day, the chant that I was supposed to be saying and our troops were supposed to be saying was “Hyakumandai,” which means a million units in Japanese because Nakayama felt we should be selling a million units.

We had to differentiate ourselves from Nintendo, and once again we couldn’t get hot properties from the arcades other than Sega’s own arcade titles. Just like it was at Atari, it became a matter of figuring out a way to position ourselves strongly when we couldn’t get the hottest arcade titles. So we decided to get the hottest personalities instead.

—Michael Katz

As the head of Sega, Katz’s first goal was to establish an identity for Genesis. The marketing team came up with a two-part approach. On one hand, team members needed to demonstrate the superiority of Genesis over the NES. They needed to show that Genesis games had better graphics and sound and looked more like arcade games. Realizing that most consumers were more interested in games than technology, Katz’s team members did not want to focus too heavily on the 16-bit processor. Instead of reciting technological achievements, they developed an advertising campaign that challenged Nintendo head-on. Sega’s new marketing mantra was, “Genesis does what Nintendon’t.”

Sega came out slamming us in their commercials. They were naming us by name, and that was really a big deal. It’s like somebody calling your team “crap.” We took it good-naturedly and competed the best we could.

—Don James, vice president of design, Nintendo of America

The second part of Katz's marketing rollout was to circumvent the lack of arcade properties by creating a library of instantly recognizable titles. Nintendo could dominate the arcade translation business; Sega, meanwhile, would contract athletes and celebrities and create games with their names and images. Under Katz's direction, Sega created *Pat Riley's Basketball*, *Arnold Palmer Golf*, *Buster Douglas Boxing*, and *Joe Montana Football*.

Joe Montana became the ultimate example. We paid \$1.7 million up front. I fought to convince Nakayama and the Japanese that we needed Montana, and I gave Joe Montana the check. We also had Michael Jackson, we had Pat Riley, and we had Tommy Lasorda. Buster Douglas was my selection, too. He got knocked down in his first challenge after he won the championship, but that was okay because the royalty was on a sliding scale and that meant we didn't have to pay as much. He gave up the title right after he had gotten it.

—Michael Katz

Shortly after starting at Sega, Katz convinced Nakayama to sign a five-year agreement with 49er quarterback Joe Montana. The deal enabled Sega to use Montana's name and image in a football game. Once the licensing deal was signed, the next problem was finding the game itself. Sega did not have a large U.S. game production facility at that time, and Sega of Japan had not designed a football game. By coincidence, a small software company, Mediagenic,* had a game under development. According to the team that had worked on the project, the game was approximately 30 percent finished, but Mediagenic executives said that it could be finished by October, or November at the very latest, so Katz decided to purchase the game.

We didn't know about all the internal turmoil that was going on at Mediagenic. Basically, they deceived us over a period of four or five months that the game was proceeding on schedule. We—Sega—were naive and irresponsible. We should have known.

The game wasn't very far along at all, but we didn't discover that till about September or October. By the time we found out, the only way we

* The company was formerly known as Activision.

we were gonna get a game out near Christmas would be to find another game that was either mostly finished or completely finished, and convert it.

—Michael Katz

In desperation, Sega turned to Electronic Arts, one of its first American licensees. Well known for its sports games, Electronic Arts had been publishing the *John Madden Football* series for four years. The first *Madden Football*, released for the Apple II computer in 1986, was so successful that Electronic Arts began updating its team rosters and playbook and rereleasing it on an annual basis. Electronic Arts president Trip Hawkins agreed to help, and his designers put together a game that Sega could name *Joe Montana Football* and publish under its first-party label. The game was released in January 1990. Electronic Arts released a Genesis-compatible version of *John Madden Football* later that year.

The finished versions of *Joe Montana Football* and *John Madden Football* were so completely different that few people would have guessed that the same company had made them. *John Madden Football* featured a playbook partially designed by Madden himself. As an NFL broadcaster and former Raiders coach, Madden helped Electronic Arts' designers create a game realistic enough to appeal to football purists.

Joe Montana Football, on the other hand, was an arcade-style game that emphasized fast action over realism. Unlike *John Madden Football*, which had all 28 NFL teams, *Joe Montana Football* had a 16-team roster and a simplified playbook built around a passing-intensive offense that discouraged running plays.

Although the *Joe Montana* series did not last as long as the *Madden* games, it helped establish Sega's reputation among sports fans and Genesis as the leading video game platform for sports simulation. Electronic Arts developed only the first *Joe Montana* football game. Blue Sky, an independent development company, created Sega's later football games. Founded by George Kiss, who worked with Michael Katz at Coleco, Blue Sky went on to make several important Genesis hits, including *World Series Baseball* and *Vectorman*.

I think Joe Montana earned something like a \$2.5 million or a \$3.5 million royalty over the course of the five years of our agreement. The Japanese were originally concerned that he wouldn't even earn the money that we paid him [in advance], so I was gratified to hear that.

—Michael Katz

Of all the games that Sega released in 1989, *Michael Jackson's Moonwalker* made the biggest impression on the media. Not only did the game contain synthesized versions of such hits as “Smooth Criminal,” “Bad,” “Billie Jean,” “Beat It,” and “Thriller,” it also had Jackson and chorus lines of villains dancing to choreographed moves that looked like they belonged on MTV. Loosely based on Jackson’s *Moonwalker* video, the game followed Jackson as he explored pool halls, graveyards, and other secret hideouts in search of kidnapped children. Just like the video, the game ended with Jackson turning into a robotic alter ego as he battled a nefarious criminal named Mr. Big.*

Sega’s marketing team was led by Al Nilsen,** who constantly reminded the press that Jackson had added his own creative suggestions during the development of the game. Jackson even released a statement saying that Genesis was the first game console that had enough power to handle his music. In this, however, the pop star was wrong. The first system powerful enough to handle his music was the Master System. Sega published an eight-bit version of *Michael Jackson's Moonwalker* as well.

Sega of America may have slowed down its Master System marketing effort with the launch of Genesis, but it did not abandon the retailers in the video game channel. Sega released Master System versions of such Genesis hits as *Michael Jackson's Moonwalker*, *Ghouls 'N Ghosts*, *Golden Axe*, *Columns*, and even *Sonic The Hedgehog*. It also released the Power Base Converter, a pricey adapter that allowed consumers to play Master System cartridges on their Genesis consoles.

Electronic Arts Does

When we announced the Nintendo deal, the stock went up. When we announced the Sega deal, the stock went down because the market was so ignorant about what was going to happen. Of course, by the end of that year, everybody realized that the wheels were falling off the 8-bit market, and we were getting punished for that. They still didn’t appreciate the 16-bit

* Actor Joe Pesci played Mr. Big in the music video. The character in the video game was an excellent likeness.

** Nilsen was the JC Penney buyer who handled video game orders during the late 1970s and early 1980s.

[systems]. A lot of people in the period from 1989 to 1990 just assumed that Sega was not going to do anything.

—Trip Hawkins

Electronic Arts' relationship with Sega produced significant rewards for both companies. Genesis quickly became a lucrative new outlet for Electronic Arts, and Sega benefited from having a line of sophisticated games that appealed to an older audience more than most games on the NES.

Nintendo approached Electronic Arts about making games for the NES in the mid-1980s, long before Sega announced Genesis. But Hawkins did not want to make games for the eight-bit console. He and many other Electronic Arts board members felt that the NES was not powerful enough to run their computer games and they did not want to downgrade their games to run on it. Like many people at the time, Hawkins was openly disdainful of console games and critical of Nintendo's chances of success. The difference was that Hawkins waited too long to change his mind. By the time he realized that Nintendo was going to succeed, Electronic Arts' stock was tumbling and the eight-bit market showed signs of aging.

We decided that Genesis would do really well and that we had very appropriate content for it. We did not want to be in this business the way it was currently being run, the way Nintendo did it with that one-sided licensing agreement, and Sega was trying to clone almost everything about Nintendo. I thought, look at what Atari is doing. They have reverse engineered the machine and are selling their own games. If Atari wins that lawsuit, that will open up the market and you won't need to have one of those oppressive licensing agreements.

—Trip Hawkins

In 1989, Electronic Arts' technicians successfully reverse engineered both the NES and Genesis. Though the NES market was considerably larger and his company eventually released a few games for it, Hawkins felt that Genesis was a better fit for his company's goals. Electronic Arts' programmers were familiar with its 16-bit 68000 processor, having worked with it while making games

for the Atari ST, Commodore Amiga, and Apple Macintosh computers. Converting games to work on Genesis also required less work since the most popular computers had 16-bit processors at that time. Only one obstacle remained: waiting to make sure that Sega did not change the architecture of its game console before releasing it in the United States. (Hawkins was aware of the security chip Nintendo added to the Famicom before shipping it to the United States as the NES.) When Genesis proved nearly identical to Mega-Drive, he decided to move ahead with his plans.

We decided to go ahead and publish our own stuff on Genesis. Then, before we did that, we went to Sega and said, "Look, before we embark on this path, maybe there's a way for us to work out a more reasonable arrangement."

So in June of 1990, we signed a very unusual and much more enlightened license agreement with Sega. Among other things, we had the right to make as many titles as we wanted. We could approve our own titles; there was not this sort of oppressive restriction on our rights of expression, and, of course, the royalty rates were a lot more reasonable. We also had more direct control over manufacturing.

—Trip Hawkins

Electronic Arts' first two Genesis games, *Populous* and *Budokan: The Martial Spirit*, were released in June 1990. In August, Electronic Arts released a miniature golf simulation called *Zany Golf* and that fall released the first Genesis version of *John Madden Football*.

At that time, we would be pretty happy if we released a computer game that sold 50,000 units. That was considered to be a significant milestone of success. We thought, Well, what would it take for us to sell 50,000 on the Sega Genesis? We decided that if they had an installed base of 500,000 units, we would be able to sell 50,000.

After *Madden* came out, they probably reached 500,000 machines in North America, and by that time we had probably sold well over 100,000 units. That was pretty healthy penetration, and it just got better and better after that.

—Trip Hawkins

TurboGrafx

I started at NEC in 1987, and within about two months I got this call, and they said, "Hey, NEC's doing this new project in Japan that's a video game system. We want you to check it out and think about whether you could introduce it in the U.S." It was ironic because I didn't go there having any thought of NEC doing anything in the video game space, and yet almost right away they started doing video games.

—Ken Wirt, former vice president and general manager,
NEC Technologies

Sega was not the only company to release a new video game console in the United States in 1989. NEC, one of Japan's leading computer manufacturers, and Hudson Soft, a leading video game publisher, teamed up to enter the market with a system called TurboGrafx-16 (TurboGrafx).

Hudson and NEC designed PC Engine, but a lot of it was Hudson's game experience because they were one of the top developers for the Nintendo Famicom. Hudson was a very colorful company. It was started by two brothers named the Kudo Brothers. They were eccentric software entrepreneurs, and they grew up kind of next to the railroad tracks on the island of Hokkaido, which is the northern island of Japan.

—Ken Wirt

In the very beginning, TurboGrafx had a few small advantages over Genesis. NEC had a good reputation as a computer company and strong name recognition among PC owners. TurboGrafx was also older than Genesis. NEC released it in Japan as the PC Engine a full year before announcing plans to ship it to the United States, and the launch was tremendously successful. More Japanese consumers purchased PC Engines in 1988 than Famicoms, and a small core group of U.S. video game enthusiasts had bought imported PC Engines for prices averaging approximately \$500. American game magazines such as *Electronic Gaming Monthly* and *Video Games and Computer Entertainment* mentioned the console. In May 1989, NEC announced plans to release the system in the United States.

NEC had some distinct disadvantages, too. Sega was an established arcade company, and American consumers knew the Sega name from the Master System and arcade games. Some people even remembered the tabletop games and ColecoVision cartridges from the early 1980s. Sega also had a stronger following among game enthusiasts. By the time Mega-Drive was released in Japan, it was much bigger news in the U.S. press than PC Engine.

NEC did not have to search very far to find an executive to handle the introduction of its new game console. Ken Wirt, who joined NEC's computer division a few months before the launch of PC Engine, had spent more than a year as a vice president in Atari's consumer computer division. Recognizing the value of his past experience, executives at NEC headquarters in Japan sent Wirt their new console and some games and asked him to evaluate the system. His initial reaction was positive.

They sent over some PC Engines and I checked it out. The quality was great. At the time, we were comparing it to the Nintendo Famicom and the Sega Master System, and it did an awful lot better than either of those did. It played faster and the graphics were better and it had some interesting styling. And the game cartridges were those little IC cards. I mean, it had a lot of interesting things going for it.

—Ken Wirt

Technologically, TurboGrafx was a curious hybrid of 8- and 16-bit technology. NEC's marketing department fiercely maintained that it had both a 16-bit custom graphics processing chip and a 16-bit central processor, but critics charged that both systems were built around 8-bit chips. TurboGrafx clearly lagged behind Genesis in overall power, though it could display far more colors on the screen.*

As I recall, TurboGrafx was a hybrid design of 8- and 16-bit technology. From a marketing standpoint, driving the idea that it was a 16-bit system was pretty important. From a marketing standpoint, that was a complicated story to tell.

* TurboGrafx could display 241 colors at a time. Technically, Genesis could display only 61 colors at one time, though a method for displaying 128 colors was developed in later years.

Of course, the competition wanted to tell the 8-bit part of the story, and NEC wanted to drive the 16-bit component of the story. In hindsight, maybe it wasn't a good idea to let that battle line be drawn because neither side was 100 percent right. Perhaps telling a more sophisticated story would have been of more value.

—Stephen Boogar, former vice president of sales, NEC Home Electronics

Instead of storing games in cartridges, NEC published its games on plastic cards that looked a lot like the cards used on the Master System. But NEC's held a lot more data. The game that came packed with the system was a slow-paced, side-scrolling adventure called *Keith Courage in Alpha Zones* that highlighted TurboGrafx's ability to display several colors. In the future, however, TurboGrafx games would have the potential to be much larger than Sega games. NEC announced that it would release a CD-ROM add-on device called the TurboGrafx-CD within a few months after the fall release of the main console. (CD-ROM disks could store nearly 260 times more data than TurboGrafx cards.) The console launched in New York and Los Angeles in late August, just two weeks after the launch of the Sega Genesis, and retailed for \$199.

The video game business was hot at the time that we launched, and we had tons of orders from all the big retailers. Kmart, Wal-Mart, Babbages, everybody had these giant orders. We had a big introduction ceremony in New York in the original customs building. There must have been 200 press people at this thing, and it was covered on CNN, and there was a big media splash about the introduction.

—Ken Wirt

Unaffected and Overconfident

I thought Nintendo screwed up three different times. One was being so late bringing its 16-bit in to counteract Genesis. Number two was not making Game Boy a color system a lot quicker to counteract not only our Game Gear but also the Lynx. Number three was not taking care of mom and dad

by making a downwardly compatible component that accepted 8-bit software on the Super NES. It didn't have to enhance the software, just to accept it so mom and dad didn't complain about tossing \$500 out the door on little Johnny's NES.

—Bob Harris, former director of creative services and advertising,
Sega of America

The executive team at Nintendo greeted the news about Sega's Genesis and NEC's TurboGrafx with indifference. Looking back years later, several Nintendo employees have offered various explanations about why they did not take Genesis seriously. Some people said that the first Genesis games did not leave an overwhelming impression. Others said that Japanese Mega-Drive sales figures were so low that Genesis didn't seem like much of a threat. Several people admitted that since Nintendo had a U.S. install base of over 20 million, Sega seemed like an upstart, an upstart that Nintendo had easily beaten a few years earlier.

The other failing was this blind faith that since they were Nintendo and they were successful, no one could ever defeat them. That they worked so hard and had done so many things right and were given such positive acclaim from people and had made so many people in the industry wealthy that you just couldn't imagine them looking anywhere else because we'd made them so happy.

—Howard Phillips, former game master, Nintendo of America

At the same time, Nintendo had just passed new milestones, and the business continued to expand. Nintendo's sales for the year topped \$2.3 billion, and the company's licensing program grew as well. Knowing that under the terms of their agreement, they could not publish more than five games per year, two licensees—Konami and Acclaim—asked for second licenses. This allowed Acclaim to publish five additional games as LJN, and Konami to publish its additional games as Ultra. Two of the first games that Konami published under the Ultra label were exceptionally successful—*Teenage Mutant Ninja Turtles*,

a game based on comic-book heroes that became a cartoon show and a motion picture, and *Metal Gear*, a game about a soldier in a special forces operation.

The big news around Nintendo in 1989 was the pending release of a new handheld game system, the first handheld video game to use interchangeable cartridges since Milton Bradley released Microvision in 1979. Named Game Boy, the new unit was designed by Gumpei Yokoi and Nintendo's Research and Development Team 1, the team that created Game & Watch and designed the hardware for *Donkey Kong*.

Typical of Yokoi's engineering, Game Boy was inexpensive, lightweight, and efficient. It was the same size as a calculator, had stereo sound, a black-and-white liquid crystal display (LCD) screen, and could run for ten hours on four AA batteries. Though Game Boy was designed around an eight-bit processor, it was not compatible with the Nintendo Entertainment System, and its cartridges were only slightly bigger than a book of matches.

Yokoi was not alone in his interest in handheld games. Unaware that Yokoi was creating Game Boy in Japan, Rare Ltd. cofounder Chris Stamper built a handheld game system that played NES cartridges. When he completed the project, Stamper and Joel Hochberg, Rare's American partner, demonstrated the unit to Nintendo of America.

We had no idea that Nintendo was working on a portable system when I arranged a meeting with Mr. Arakawa and Howard Lincoln, to show them a portable system that we had developed that used NES carts. There were a number of problems, of course, such as battery life. It was cumbersome in comparison to what Game Boy in its final form actually looked like because it accepted a larger cartridge.

At my meeting with Howard and Mr. Arakawa, they took me into their confidence and told me about this Game Boy project and suggested that we forego any development of this project that we were working on.

—Joel Hochberg, cofounder, Rare and Coin-It

In a shrewd maneuver, Nintendo of America president Minoru Arakawa decided to use *Tetris* as the cartridge that came packed in with Game Boy. It was a perfect match. The puzzle game's simple graphics lent themselves well

to Game Boy's LCD screen, and its style was ideal for travel and quick breaks. The *Tetris* cartridge also fit into advertising campaigns that Nintendo ran in later years, after discovering that Game Boy had a stronger appeal to adults than the NES did.

Nintendo originally released three cartridges—*Baseball*, *Breakout*, and *Golf*—that retailed for \$20 at the time that Game Boy was launched. A few weeks later, Nintendo released the Game Boy cartridge *Super Mario Land* with a barrage of advertisements based on the science-fiction movies of the 1950s. Though it had the look and feel of other Mario games, *Super Mario Land* took the plumber in new directions. In this game he flew a spaceship and rode in a submarine. Shigeru Miyamoto had not overseen the creation of this game; Yokoi produced it himself specifically to support his Game Boy system.

Unlike the other hardware systems that came out in 1989, Game Boy was an immediate success. According to an article in *Time* magazine, the one million Game Boys sent to the United States in 1989 met only half the demand for the product.¹ That allotment sold out in a matter of weeks. Game Boy was a juggernaut. Its sales did not slow down, even when it was confronted with a technologically superior product.

Atari Lynx

Jay Miner, the man most associated with the design of the Atari 2600, founded Amiga in 1982. In 1983, he hired a young programmer named RJ Mical* who had a fanatical passion for creating operating systems. Tall, athletically built, and openly goofy, Mical was the antithesis of the standard programmer. Working under Miner, Mical learned a new appreciation for the relationship between hardware and software.

Everything I learned at college and everything I learned until going to Amiga suggested that hardware was hardware and software was software, and the way things are done is that you invent a bunch of hardware and give it to the software guys. There's a much better way of thinking that I learned at Amiga. For the first time, the hardware and the software were created together. There

* Mical's biggest claim to fame at Williams was helping design the arcade game *Sinistar*.

was a great flow of communication, a mutual design coming into existence at the same time.

—RJ Mical, operating system designer, Amiga

While working at Amiga, Mical struck up a friendship with a hardware guru named Dave Needle. Both men shared the same “Yin and Yang” philosophy about the interrelationship of hardware and software. They both left Amiga in 1985. Needle took a job with Apple Computer and Mical became an independent contractor. A few years later, however, while eating at a Mexican restaurant, they began discussing projects they could build together. The conversation turned to video game systems. Needle grabbed a napkin, and they sketched the basic plan for a handheld video game system with stereo sound and color graphics.

Mical and Needle originally planned to design their system around a 16-bit processing chip but decided it was not a practical idea. The chips they looked at would have had heat problems, and when they evaluated the components needed to support the 16-bit processor, they decided the system would be bulky and heavy. They switched to an 8-bit 6502 chip from the same family of chips used in the NES and Atari 2600.

Mical and Needle did not have the money needed to build and market a game system, so they began searching for a company that would buy their idea. They contacted Epyx and demonstrated their idea toward the end of Michael Katz’s tenure as president of the company. They did not know that Katz had urged the company’s board of directors to accept the project. Over the next few months, they entered a lengthy and friendly negotiating process that ended with them accepting stock in Epyx and taking positions with the company. They called the project “Handy Game.”

Though Katz had managed to keep Epyx running, he was never able to completely solve its financial problems. The company, needing financial backing in order to bring out a new game system, invited several potential partners to view Handy Game while it was under development. In 1988, Nintendo sent Don James to have a look at it.

Someone from Epyx contacted us and said, “Hey, we’ve got this thing and do you guys want to look at it?” I don’t think they actually offered it to us, but we found out about it and I flew down and had a look.

I went down and they showed me what they were doing. It was really just a screen at that point. It was difficult to see the screen because it faded in and out if you moved it around. You had to have it just the right angle to see the screen really well. My personal thought was that, because of that and because it just chewed through batteries like crazy, it wouldn't ever really catch on that well.

—Don James

Nintendo sent somebody to look at what we were doing, but he didn't seem interested. It was like he came to see us even though he had already made up his mind that he wasn't interested.

—RJ Mical

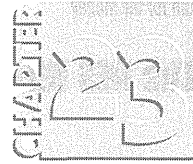
Needle and Mical learned a new phrase while working on Handy Game—"emag tresni." For them, the phrase became a sort of Murphy's Law. It meant that no matter how carefully you worked, and no matter how meticulously you checked every detail, something was bound to go wrong. In this particular case, the mistake occurred as Needle designed Handy Game's screen with engineers from Sharp Electronics. Needle and a Japanese engineer discussed every point in the design, but at some juncture, they slipped up on one digit slot in the binary coding, and instead of listing a "1," the engineer placed a "0."

If you didn't have a game in the slot when you turned it on, the screen would display the message, "Insert Game." Because of the error, the message came out inverted. It said, "EMAG TRESNI."

—RJ Mical

Epyx's financial problems increased throughout 1988, and the company ended up selling Handy Game to Atari Corporation. Many of the employees at Epyx resented the idea of working with Atari. Mical and Needle disliked the idea of working with Atari so much that they left Epyx. A few months later, Epyx collapsed.

Atari changed the name of the system from Handy Game to Lynx to highlight the fact that up to eight Lynx consoles could be daisy-chained together using link cables. The system was launched in October 1989 to rave reviews. Lynx was designed to accommodate both left- and right-handed play, and it had one of the finest LCD screens of its time. The screens on Game Boy and later handheld systems tended to blur when showing fast movements. Lynx's screen handled speed without blurring, though it scratched very easily. Color graphics and a crisper screen were not enough, however. While Toys "R" Us and most of the dedicated video game stores carried Lynx, Atari could not give it the marketing and retail support that Nintendo gave Game Boy. Atari's poor reputation with retailers, and fear of Nintendo, caused many retailers to avoid the system. Originally retailing for \$199, it cost twice as much as Game Boy and was never widely advertised. Many stores pulled Lynx from their shelves within a year. It was available mostly through mail order thereafter.



Run for the Money

It was embarrassing to talk to retailers when I first joined the company. They hated us because we never did what we said we were going to do. Fortunately, they did not like Nintendo either. In those days, Nintendo was so arrogant.

—Tom Kalinske, former president and CEO, Sega of America

Indeed, when Apple president Michael Spindler was asked in March 1991, which computer company Apple feared most, he quickly answered, "Nintendo."¹

[Laughs] They should have feared Apple more.²

—Bill Gates, chief operating officer, Microsoft

The NES Hits Its Apex

Nintendo's best year . . . The best year for the NES, the most lucrative year for the NES, was 1990, which was also the first full year that Sega Genesis was on the market.

—Peter Main, executive vice president, Nintendo of America

With the 1989 releases of Genesis and TurboGrafx, Nintendo found itself lagging in technology behind the competition; but amazingly, technology did not seem to matter. Nintendo sold more than 17 million copies of *Super Mario Bros. 3* worldwide, setting a lasting sales record for a game cartridge that was not packed in with console hardware.* There were other hits, too. Sun Soft scored a major hit with *Batman*, a game that built off the popularity and storyline of the Tim Burton movie. Konami scored a major hit that year as well with *Teenage Mutant Ninja Turtles*, the first game to be published under the new Ultra label.

In 1987, Nintendo of America president Minoru Arakawa met with executives of Konami—one of Nintendo's three most successful third-party partners—to discuss a problem they saw in their licensing agreement. According to the agreement, third-party licensees were allowed to publish only five games per year. Konami had published a long line of bestselling games, including *Castlevania*, *Blades of Steel*, *Double Dribble*, and *Life Force*, and the five-games-per-year clause was holding the company back from realizing additional profits. Based on the games' quality and torrid sales, they argued, Konami should not be limited to five games per year.

Another third-party publisher had the same complaint. Acclaim, Greg Fischbach's Long Island-based game company, also asked for permission to publish more games. Having created such games as *Double Dragon II*, *Iron Sword*, and several games based on WWF wrestling, Acclaim was another one of Nintendo's top licensees.

After considering their arguments, Arakawa found a way around the rule. He gave Konami and Acclaim second licenses so that they could publish an additional five games under different names. Acclaim adopted the name

* By comparison, Nintendo sold in excess of 30 million copies of the original *Super Mario Bros.* and Game Boy *Tetris* cartridges, both of which were packed with hardware systems.

LJN for its second license and Konami published additional games under the name Ultra.

I think Konami and Acclaim were doing so well that we thought we had a good reason to give them another license. The other licensees did not like it.

Konami had a really good manager [Emil Highcamp] in the States. He was not only doing marketing and sales, he was also a good product manager. He sometimes went to Japan and asked the R&D people at Konami [headquarters] to come up with this type of game or that type of game. Once he was watching TV and saw *Teenage Mutant Ninja Turtles* and got an idea, so he licensed it and asked Japan to make it into a game.

—Minoru Arakawa, president, Nintendo of America

Under the Ultra label, Konami sold approximately 4 million copies of *Teenage Mutant Ninja Turtles*, giving Ultra a heady send-off. One of Ultra's next titles, *Metal Gear*, also helped establish the product line. But Ultra's days were numbered. The Ultra license was only for the Nintendo Entertainment System (NES), and that system was coming to an end.

Even with earnings of \$3.34 billion and 48 million Nintendo Entertainment Systems sold worldwide, Nintendo executives knew that they could not control the market with obsolete hardware. Work had already begun on the new 16-bit game console that they hoped would help them shut competitors out of the market.

A Change at Sega

I think Mike Katz was the guy who did a lot of the things that ultimately led to Sega's success with Genesis.

—Howard Lincoln

Breaking Nintendo's hold on the international video game market proved to be more than a matter of technology for Sega. Nintendo controlled more than 90 percent of the international market. But whether Sega's 16-bit game console was sold as the Mega-Drive in Japan or the Genesis in the United States, the unit

was simply not catching on. With memories of the failed Master System still vivid in his memory, Sega Enterprises CEO Hayao Nakayama decided to shake up Sega of America, in the hope that new ideas might lead to new success.

In mid-1990, Nakayama bumped into an old acquaintance named Tom Kalinske who was visiting Tokyo on business. As they spoke, Nakayama told Kalinske that he now worked at a company called Sega that had a new game console that he hoped could steal the market away from Nintendo. Kalinske, who was working for a struggling toy car manufacturer called Matchbox, almost laughed. “You’re competing with Nintendo! They’re huge!” he said.

According to a 1995 article, Nakayama offered Kalinske the position of CEO of Sega of America on the spot.³

Tom Kalinske

And so Nakayama-san was not happy that we hadn’t sold a million units. In January, about fourteen months after I started there, I was replaced by Tom Kalinske who, of course, I’d known from Mattel, where we had worked together.

—Mike Katz, former CEO, Sega of America

Thomas J. Kalinske was a natural choice for president and CEO of Sega of America. An affable man with clean-cut all-American good looks, he graduated from the University of Wisconsin with a degree in marketing and spent years in advertising before joining Mattel as a product manager in the early 1970s. While at Mattel, Kalinske’s bold style caught the eye of top executives, and he moved up quickly.

Mattel, the largest toy company in the world, had plenty of room for a tomcat like Kalinske to grow. He began with preschool toys, then was asked to oversee the Barbie line. At the time, Mattel marketed Barbie as a single line of dolls with accessories. Kalinske’s team changed the strategy, breaking the line into several segments such as Malibu Barbie. “When I started on the Barbie business, worldwide, it was \$42 million; when I left the company, it was \$550 million; today, it’s \$1 billion.”⁴ As Kalinske rose through the ranks of Mattel, his responsibilities expanded and he oversaw several research and development teams. One of those teams formed the nucleus of Mattel Electronics.

I was a VP of marketing at the time, and one of my product development groups developed the first portable games. We introduced them on Father's Day. Nobody thought it was going to be successful, and, of course, the products were phenomenally successful. Within that same group, they developed the Intellivision technology. But what happened was that because it was clear the electronics business was going to become such a major part of the company, we decided to create a totally separate company. Once we made that decision and staffed it with some new hires and with some e-toy people, I never had anything to do with it again.

—Tom Kalinske

A rising star at Mattel, Kalinske tracked the new electronics division's meteoric ascent and fall.

I eventually ended up on the board of directors of Mattel Inc., and during that time period the Intellivision company would report its results back in. So I had some involvement at a board level with them and how they were doing. All of a sudden one day the guys from Mattel Electronics said, "Oh my god, the bottom has fallen out. Atari just lost all its money, and we're losing all this money, and it looks like we're gonna lose \$350 million."

—Tom Kalinske

Twelve years after he started at Mattel, Kalinske began a three-year stint as president of the company. During this time, he went toe-to-toe with television network executives over advertising sales. "We were spending millions of dollars, and the networks treated us like dirt," says Kalinske. "They had McDonalds and other big companies, and they acted as if they were doing us a favor by giving us advertising time."

Mattel came up with an alternative medium for reaching children—a cartoon series and a line of toys called *HeMan and the Masters of the Universe*. The idea was to create a hit cartoon series for non-network television where advertising was more affordable. The idea worked. "*Masters of the Universe* ended up getting a 7.5 rating at a time when the networks' shows weren't getting a 7.5 rating. From that point on, the networks were much easier to work with."

After sixteen years with Mattel, Kalinske went to Matchbox for a short period, then replaced Michael Katz, who had spent the last year trying to find a foothold in the market. In truth, Katz has seldom been given enough credit for his role in Sega's success. Much attention has been given to the rise in profits under Kalinske, jumping from approximately \$100 million in sales in 1990 to over \$1 billion by 1993. Much of this success, however, grew out of programs started by Katz.

We started the aggressive advertising campaign "Genesis does what Ninten-
don't." We concentrated on games that Americans would play. . . . sports
games, specifically, and some other products. And we attempted to develop
a mascot character like Mario.

—Michael Katz

Several people who worked under Kalinske when he first joined Sega say that he did not know much about video games but that he was a fast learner. In the early days, marketing executives and engineers had to brief him before meetings with reporters, and some Sega of America employees wondered if he was right for the job. Playing off his Mattel background, some reporters dubbed Kalinske Sega's "Ken doll" spokesperson, suggesting that he was a good-looking figurehead with little else going for him. The label was grossly inaccurate. According to those who worked with him, Kalinske studied hard and quickly developed an understanding of the industry. He demonstrated the ability to make tough decisions and the willingness to defend his decisions when challenged by the Japanese board of directors of Sega Enterprises. He also surrounded himself with industry-savvy advisers such as Steve Race, an Atari veteran and one of the founders of Worlds of Wonder; Bob Harris, who had helped launch both Master System and Genesis; Paul Rioux, who had worked on Intellivision; and Al Nilsen, who had been JC Penney's merchandise buyer during the Atari's heyday.

Tom focused on retail and how to represent the company and third-party
relationships. I mean, that was Tom. He made sure that the best people out-
side of us wanted to work on Genesis.

Shinobu Toyoda was the vice president of licensing, and he was the man behind building the Sonic franchises and licensing in and out. He wanted to go to Hollywood. To this day he works in Los Angeles at our Sega PC offices. He's the one who wanted to do the Paula Abdul game. He's the one who would go down to Hollywood and go onto all the sets to get licenses like Batman. He was the one who made sure Sonic was on every bath towel and all of that stuff, and he worked very closely with the Sonic cartoon.

The guy who was most underrated and the guy who doesn't get a lot of positive press was Paul Rioux. I can tell you from firsthand experience . . . I got to sit and watch all these guys, and Paul Rioux was the guy who pushed hard to improve the quality when the quality wasn't there. He was the guy who saw the value of making money in peripherals. He was the "make it happen" guy, the sort of nuts and bolts guy who would be involved in all aspects. He didn't have the most romantic job, but I assure you, he was a really key part of the success.

You know, it was a real triad, though. If all three of them [hadn't been] there, I really feel like we wouldn't have been successful. The chemistry between the three was essential.

—Michael Latham, former director of Omega Group, Sega of America

A student of classic marketing, Kalinske believed in the Gillette school of "giving away the razors to sell the blades." Above all else, he felt that Sega had to get as many Genesis consoles into consumers' hands as possible and as quickly as possible. Working with his executive team, Kalinske developed a four-point strategy that he believed could weaken Nintendo's hold on the market. His plan included dropping the price of Genesis from \$189 to \$149, with the eventual goal of getting it down to \$100; replacing *Altered Beast*, the first bundled game, with a game called *Sonic The Hedgehog* that was under development at the time; assembling a U.S.-based team to create games more suited to American tastes; and adopting strident advertising campaigns that challenged Nintendo head on.* Kalinske prepared a presentation with these

* While Tom Kalinske often takes credit for creating advertising campaigns that challenged Nintendo "head on," it should be noted that the "Sega does what Nintend-don't" campaign began under Michael Katz. It should also be noted that Nintendo later responded to this campaign with "Nintendo is what Genes-isn't."

suggestions and flew to Japan to present them to Nakayama and the board of Sega Enterprises. The board nearly rejected his ideas.

It was like I'd hit them with a bucket of cold water. They asked, "Are you out of your mind? You want to lower the price until we don't have any profit at all? You want to take out our regular software and put in our best software? You want to take on this company that has 92 percent of the market in an advertising campaign?"

That's essentially what they told me. I thought, "Well, this is the shortest career anybody ever had. I guess I'd better start looking for something else to do."

As the other guys got up to leave, Nakayama turned and said, "On the other hand, he was hired to make decisions for the U.S. market, and if that is what he thinks needs to be done, he should go ahead and do it."

—Tom Kalinske

Kalinske returned to Sega of America with Hayao Nakayama's approval on all four suggestions. The next step was putting his plan to work.

Sega's Secret Weapon

A large portion of Kalinske's recovery plans would fall on the shoulders of *Sonic The Hedgehog*,* a speedy blue rodent in red tennis shoes.

Sonic was the creation of Yuji Naka, a young game designer whose credentials included *Phantasy Star*, a role-playing title generally remembered as the best game ever released for Sega Master System, and *Ghouls 'N Ghosts* for Genesis, a flawless translation of a popular Capcom coin-op game. Of the games released around the launch of Genesis, *Ghouls 'N Ghosts* stands out among the finest.

An exacting and relentless micromanager, Naka was well known for expecting nothing short of perfection from those who worked on his team. Like the programmers who created the games for the Atari 2600, Naka generally preferred to do everything from game layout to the music and even writing the code himself.

* The "T" in *Sonic The Hedgehog* is capitalized. Sega marketing wizard Al Nilsen had the "The" registered as Sonic's middle name.

Not just programming, everything . . . the graphics, the pictures. I'm really careful about everything. It's not exactly the building of the program itself that concerns me, it's the overall flow of the program. In my mind, working as a producer or director means handling all aspects of a game, including the music, graphics, pictures, and everything.

—Yuji Naka, creator of *Sonic The Hedgehog*

Naka's demanding managerial style sometimes gave way to outbursts. Unlike other creative teams, Naka's team suffered from heavy turnover as burned-out programmers, designers, and artists looked for less demanding work elsewhere. Mild-mannered in public, Naka was said to be given to emotional flare-ups when under stress. He had already established himself as one of Sega's most respected console game creators in 1989, when the company-wide call went out to create a new mascot that could compete with Nintendo's Mario.

Mr. Nakayama expressed the idea to the company that it would be a good thing for Sega to develop a mascot character—one that could be sort of, that could do for Sega what Mickey Mouse does for Disney. As a result of that, numerous artists and designers from the company submitted design ideas and suggestions and sketches for what this character would be. A lot of ideas were considered, like kangaroos and rabbits, and we were kind of thinking along the lines of a jumping, hopping kind of character.

Mr. Oshima [Masato Oshima] was the artist whose character design sketch was accepted. He's the one who essentially drew the hedgehog. It's a very stylized hedgehog.

—Roger Hector, former head, Sega Technical Institute

Naka wanted to make a game that was similar to the *Super Mario Bros.* games, only simpler. *Mario* games used two buttons, so *Sonic* should use one. Mario collected coins, so Sonic collected rings. The way Naka's people differentiated Sonic from Mario was by making the hedgehog faster and giving him "attitude." Mario games were slow and friendly, Sonic games would be fast and

the eponymous groundhog would glare at the camera and tap his foot impatiently if the player did not move quickly enough.*

The Japanese, unbeknownst to us, created a character with *Sonic The Hedgehog*. We, in America, thought Sonic was ridiculous because the hedgehog was a little known animal and it was in blue. We thought it was silly, but to the credit of the game, which was so good, the character became established.

I think it was because the game was a good game on its own anyhow. The character could have been anything, but it was a hedgehog that would have died a dismal death had it not been for a very good game.

—Michael Katz

Moreover, Sonic traveled through a surreal world designed to show speed. His two-dimensional side-scrolling environment included loops, steep cliffs, and pinball-esque bumpers from which he could launch at high speeds. Compared to *Sonic The Hedgehog*, even the fastest racing games of the time seemed slow. Players had to make decisions in advance and react quickly to survive each level of the game. When Sega at last unveiled *Sonic The Hedgehog*, the response was one of astonishment. Magazines praised it as one of the greatest games ever made and proof that Genesis could do more than the *Golden Axe* and *Moonwalker* side-scrollers for which it had become known.

People at Nintendo, however, remained unimpressed.

It was pretty much a typical Nintendo reaction at first. [People said] "Look, they're trying to copy us with *Super Mario Bros.* and it's the same kind of a game. They can't really do anything as good as we do it." Over time, there was this kind of dawning realization that this was . . . not such a bad product. It was the same thing with Genesis, in general.

—Richard Brudvik-Lindner, former group supervisor and head of
Nintendo of America Account Team, Hill and Knowlton

* Sonic's foot tapping was not original. It first appeared in *Major Havoc*, an Atari vector-graphics coin-op game created by Owen Rubin.

Sonic The Hedgehog was released in the United States in 1991. As part of Kalinske's proposed plan, it replaced *Altered Beast* as the game that came bundled with the system. People who had purchased the old package with *Altered Beast* within a few-months grace period were allowed to mail in for a free copy of *Sonic*, in effect giving them an extra game at no charge. The *Sonic* cartridge was also sold separately for those who already owned Genesis.

Sonic was an immediate hit, and many consumers who had been loyally waiting for Super NES to arrive now decided to purchase Genesis. After struggling for more than a year, Sega was suddenly seeing success. The fiercest competition in the history of video games was about to begin.

The Super Family Computer

Japan remained loyal to Nintendo, ignoring both Sega's Mega-Drive and NEC's PC Engine (the Japanese name for TurboGrafx). When Nintendo Co. Ltd. announced that its 16-bit Super Family Computer (Super Famicom) would go on sale in Japan in November 1990, nearly 1.5 million people pre-ordered the console.

The November 21, 1990, Japanese launch of Nintendo's 16-bit Super Famicom was an international media event. Tens of thousands of people lined up in front of department and electronics stores the night before, hoping to pick up the coveted new console. According to some reports, many parents called in sick to work so that they could join the lines of waiting shoppers. All of Tokyo was slowed down by the crowds, and a frenzy began when news spread that Nintendo had shipped only 300,000 consoles. The pushing and shoving were so chaotic that the Japanese government later asked Nintendo and other video game companies to restrict future hardware releases to weekends.

In terms of technology, the Super Famicom, which would be released in the United States as the Super NES, was an improvement over both Genesis and TurboGrafx. Like Genesis, Super NES had a true 16-bit processor rather than the 8-bit/16-bit hybrid in TurboGrafx. Nintendo's Research and Development Team 2, led by Masayuki Uemura, designed the console around visual and audio performance rather than processing speed. It displayed more colors. Genesis had a 512-color palette; Super NES could display 32,000 colors. Along with its central processor, the Motorola 65816 chip, it included a Sony stereo chip and two customized graphics chips that were nicknamed PPU-1

(Picture Processing Unit) and PPU-2. Powered by PPU-1 and PPU-2, Super NES's architecture included seven special modes for handling graphics, the best-known being "Mode 7 Graphics," which enabled designers to set parameters for effects such as scaling and rotating backgrounds. What the Super NES lacked, and what would ultimately become its technological Achilles' heel, was the sheer processing power of Genesis.

Nintendo's strongest selling point, however, was the game that came packed in with the Super NES console—*Super Mario World*. Shigeru Miyamoto, who by now was seen as video gaming's greatest star, created an enormous and sprawling game that expanded the Mario universe. By this time, Miyamoto had started working with teams of designers. He may have created the original *Donkey Kong* with only two people to write code, one person for hardware, and another for music, but the 16-bit *Super Mario World*, also known as *Super Mario Bros. 4*, was a much bigger effort created by what Miyamoto would later remember as a fifteen-person team.

Super Mario World built on earlier *Super Mario Bros.* games. It marked the return of the bright colors that had been a trademark of the original *Super Mario Bros.* (although they were replaced with washed-out colors in the series' second and third installments). This was also the game in which Nintendo introduced Yoshi, a friendly dinosaur who carried Mario on his back. "Too much of a good thing," complained one video game magazine. Others extolled it as the greatest game ever made.

Nintendo set aside \$25 million for marketing and prepared to release Super NES in the United States at a retail price of \$199 on September 1, 1991.* With Sega having recently dropped the price of Genesis, the \$200 cost of Super NES seemed high. As one magazine put it, "Hold on to your wallets, Nintendo fans. *Super Mario Bros. 4* is on the way. But it could be a mixed blessing for all those addicted to the *Mario Bros.* series of home video games—and a cash-register bonanza for the Japanese company that sells them."⁵

As the time grew closer, however, it became clear that the market was shifting. The launch of *Sonic* had revitalized Genesis sales. The ABC sitcom *Roseanne*, starring comedienne Roseanne Barr, ran an episode in which Barr and her working-class husband splurged to purchase a Super NES for their son while

* That date was eventually changed to September 9, which would later become the launch date of Sony's PlayStation and Sega's Dreamcast as well.

telling him that they would not be able to afford to buy him such an expensive gift. When he heard this, the boy was nonplussed and exclaimed that he would simply visit a friend who owned a Genesis. There was a real market analogy to the one in the sitcom. Tired of waiting for Super NES to arrive and unhappy about the \$200 price tag, many consumers decided to take a chance on Genesis. Unlike the Japanese launch in which Super Famicom had outsold both competitors combined in presales alone, Super NES would debut against an established product.

By the time Nintendo produced Super NES this fall, Sega already had 150 different 16-bit cartridge games on the market vs. 12 for Nintendo, and its player was retailing for \$150, or 25 percent less than Nintendo's. While no one knows who will ultimately win this spirited battle for Christmas sales, the feisty underdog has sold a million Genesis systems this year, vs. 700,000 for Super NES.⁶

In the meantime, NEC, already shut out by Sega, now faced desperate times as it tried to market TurboGrafx against a second competitor. Having already failed at increasing its sales by introducing new technologies—the TurboGrafx-CD and a handheld console called TurboExpress that played games designed for the TurboGrafx game console, as opposed to the scaled-down games played on Game Boy and Lynx, NEC lowered the price of its base system to \$99.

The basic issue was that Genesis had much better-known games. They got Electronic Arts' support and they had *Madden Football* and all that stuff. And they had a lot more marketing dollars. And, you know, marketing dollars count.

—Ken Wirt, former vice president and general manager,
NEC Technologies

In a move designed to increase market share, NEC Technologies has lowered the suggested retail price of its TurboGrafx-16 system to \$99.99. In addition, the company will offer the new TurboGrafx-16 system SKU, called the “Bonk SuperSet,” at a suggested retail price of \$149.99 and will lower the suggested retail price of its TurboGrafx-CD player from \$399 to \$299. NEC's 16-bit TurboExpress portable remains priced at \$299.⁷

The Battle Begins

A conventional wisdom in the video game industry is that consumers purchase new hardware when the economy is strong and stick to software when the economy is tight. In 1991, the United States economy was in recession. It didn't matter. Nintendo easily sold its entire first shipment of 1 million Super NES consoles when they went on sale on September 9. Estimates of the exact number of Super NES units sold in the United States over the next three months range from Sega estimates of just over 1 million to an internal Nintendo figure of 2.2 million.⁸ According to the NPD Group, a company that tracks sales figures, Sega outsold Nintendo in 1991. According to NPD figures, Sega finished the year with 55 percent of the market, while Nintendo's share was 45 percent. (This figure did not include TurboGrafx, NES, or Master System sales.) And the competition was just heating up.

The All-American Game

Mr. Yamauchi was subjected to a great deal of scrutiny. . . . a great deal of discrimination. He was really dragged through the mud. And it took him six months to put that deal together.

—Howard Lincoln

Toward the end of 1991, U.S. Senator Slade Gorton (Republican, Washington) requested a meeting with Minoru Arakawa and Howard Lincoln. The three met at Nintendo of America headquarters in Redmond, Washington. During the meeting, Gorton asked Lincoln and Arakawa if they were baseball fans. Neither one was. Next he asked them if they knew that the Seattle Mariners, the local pro baseball team, was up for sale.

I think we'd [only] been to one Mariner game, but that was it. Trip Hawkins (founder of Electronic Arts) had come up and taken us, and we actually had gone to the owner's suite where we met Jeff Smulyan (owner of the Mariners).

We didn't have any interest in baseball. We probably had some kind of a vague idea that the Mariners had been put in play, that Jeff Smulyan had put

the team up for sale, and that if they could find a local buyer, they could keep it. But there were no local buyers coming.

—Howard Lincoln

Gorton finally came to the point, asking them if Nintendo could help keep the Mariners in Seattle by buying the team. If Nintendo did not purchase the franchise, the Mariners would very likely move to Florida, where a group of investors was prepared to buy it. Lincoln's response was less than favorable.

And I think I said it immediately, "Bull." I mean, would Major League baseball go along with a Japanese investor, a Japanese element?

His comment was, "That's going to be a problem, but that can be overcome by having minority local ownership."

—Howard Lincoln

Lincoln and Arakawa were noncommittal. Lincoln worried about the backlash among major-league owners. He also worried about how Nintendo Co. Ltd. chairman Hiroshi Yamauchi would react to the bad publicity and protests that might erupt from the news that a Japanese company was purchasing an American baseball team. Arakawa, on the other hand, had lived in Seattle for the last fourteen years and wanted to give back to the city.

About two weeks later he [Arakawa] came in my office and said, "Oh, remember that meeting we had with Senator Gorton about baseball?" I said, "Yes." And he said, "Well, Mr. Yamauchi has decided to buy the team."

—Howard Lincoln

Lincoln and Arakawa decided to work through Senator Gorton, who was visiting Russia when Yamauchi decided to purchase the baseball team. By the time he returned, Lincoln and Arakawa were on the Big Island of Hawaii, staying at a large vacation property that Nintendo had purchased. On Christmas day, they called Gorton at home and told him the news. In an effort to stave off trouble, Yamauchi did not purchase the Mariners alone.

He formed a consortium called the “Baseball Club of Seattle” with John Ellis, chairman of Puget Sound Power & Light; John McCaw of McCaw Cellular Communications; Frank Shrontz, CEO of Boeing; and Chris Larson of Microsoft. The consortium met Smulyan’s asking price of \$100 million for the Mariners, with Yamauchi personally contributing 60 percent and taking the controlling voice.⁹ As Lincoln predicted, baseball fans and club owners did not welcome Yamauchi’s decision.

In *Super Mario Land*, one of Nintendo’s most popular games, Mario the plumber must travel through four kingdoms, dodging arrow-dropping bees (Bunbuns), defeating bomb-carrying turtles (Nokobons) and jumping over man-eating plants (Pakkuns) so he can rescue Princess Daisy from the evil Tatanga.

In Nintendo’s newest game, Hiroshi the billionaire must negotiate his way through a hostile country, avoiding the venomous Jingos and skiing past the antagonistic Moguls so that he can rescue Ken Griffey, Jr., from the clutches of the Tampa Bay Baseball Task Force and save the day for the beleaguered Rain People.¹⁰

Nintendo’s purchase of the Mariners was ill timed. The nation was in the midst of an economic recession that many economists and politicians blamed on Japan. Those opposed to the sale pointed out that Japan did not allow foreign investment in its baseball league, as proof that Yamauchi should not be allowed to buy his way into the major leagues. Baseball commissioner Fay Vincent stated that he doubted the sale would go through, and a national poll showed that 61 percent of Americans preferred to keep Japanese investment out of major league baseball.¹¹

Lincoln had anticipated the American backlash to the offer. What he did not expect was a Japanese backlash as well. In Japan, where the economy was strong and the people enjoyed a favorable trade imbalance with the United States, Hiroshi Yamauchi was accused of arrogance and criticized for bringing negative attention to the current prosperity.

He made the decision, he did it, and then all sorts of flack broke out. There was a backlash in both the United States and Japan. . . . a negative reaction. We

had, I think, anticipated the negative reaction in the United States. I was a little bit surprised that there was a negative reaction to some extent in Japan. That really was because there was a negative reaction in the United States.

—Howard Lincoln

The final sale was approved when three-fourths of team owners in the American League and a simple majority of owners from the National League voted to support it. Since the purchase, Yamauchi has proved to be one of the least vigorous and involved team owners in baseball. In 1999, he would appoint Howard Lincoln chairman of the team, but other than that, he has always left Mariner affairs in the hands of Lincoln and the team's front office.

He [Yamauchi] has never seen a single Mariner game. He's never met John Ellis, our CEO. He's never met any of the other Mariner owners. He's never attended a game. He was going to come if we made it to the World Series, but he's never had to. He's never met a Mariner player. He's never met Ken Griffey, Jr.

—Howard Lincoln

In 1994, Yamauchi did become involved with the Mariners for one brief moment. Early that year, Hiroshi Yamauchi called Arakawa and Lincoln to tell them about a great opportunity for the team—a Japanese pitcher whom he thought might do well in the major leagues.

The crowning blow came one year late when Mr. Yamauchi called and said, "There is this great Japanese pitcher, Nomo. I want the Mariners to get this guy, and I've made arrangements so that the agent will come first to the Mariners with Nomo. I'm not worried about the budget, anything like that. I want the Mariners to sign this guy."

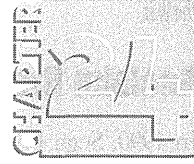
—Howard Lincoln

Arakawa and Lincoln agreed to have Hideo Nomo try out for the team. He flew out to Seattle, but during a physical, the Mariners' team doctor said he had a "bad arm." Lincoln called Yamauchi and told him that they had decided

to turn Nomo down. A short time later, the Los Angeles Dodgers signed him, and he finished the season as Rookie of the Year.

He was a starter in the All-Star game. Both the Mariners and the Dodgers made the playoffs and this is the real tough one. During the playoffs, you've got this team with a Japanese owner. They did not broadcast the Mariners' games in Japan. The Los Angeles Dodgers' games were being broadcast all over Japan. So Mr. Yamauchi was a little bit torqued.

—Howard Lincoln



The War

I was tricked into this job!

—Yoshiki Okamoto, producer of research and development, Capcom

Sega of America had this whole Game Institute. Our whole strategy was to hold on and wait for the next game from [Shigeru] Miyamoto.

**—Howard Phillips, former “man who plays games for a living” spokesman,
Nintendo of America**

Acclaim Breaks Ranks

In 1990, Sega Enterprises CEO Hayao Nakayama called Greg Fischbach, CEO of Acclaim Entertainment, about licensing some of his company's games for use on Genesis. Fully aware that making such an agreement would infringe upon the exclusivity clause in Acclaim's licensing agreement with Nintendo, Fischbach agreed. Acclaim had already risen to the top tier of Nintendo's third-party partners and published several bestselling games. Fischbach welcomed the opportunity to market his products to a new audience and felt it was time to revisit the terms of the licensing agreement. After careful consideration, Fischbach and cochairman Jim Scoroposki attempted to contact Nintendo of America president Minoru Arakawa to discuss their decision. When they were informed that the Nintendo executives were in Germany on business, Fischbach and Scoroposki called him and asked for a meeting. Arakawa suggested that they get together for dinner on Sunday evening, so Fischbach made travel arrangements and had his German office make arrangements at a restaurant about 25 minutes outside of Frankfurt.

Fischbach and Scoroposki arrived in Frankfurt early Sunday afternoon. They went to Arakawa's hotel, where they met him, his wife, and Howard Lincoln. The five of them could not fit into one cab, so Fischbach and Scoroposki went in one cab while the Arakawas and Lincoln followed in a second.

Have you been to Germany? Narrow two-lane roads and fast . . . Everybody drives fast in Germany. And they use Mercedes 300 series sedans as taxicabs—little bright ones, kind of cream color.

We were going to make a left-hand turn into the road that leads to the restaurant, and for whatever the reason, our taxi driver [didn't] see an oncoming car. We got broadsided and ended up in a ditch on the side of the road. Howard, Mr. Arakawa, and his wife watched this happen, and it looked like we were dead. It wasn't a good precursor to the dinner or to the conversation.

Nothing really happened, we got scratched up a little bit. The car was totaled, but we walked away. We got into their car and still went to dinner because we were men on a mission. We had a really enjoyable meal. Mr. Arakawa was really quite nice about it and understood what we were doing and why we were doing it.

—Greg Fischbach

When asked about that meeting, Howard Lincoln later remembered it a little differently. Their stories were fairly similar up until the accident; but after the accident, Lincoln remembered a few additional details.

We grabbed Jimmy and we grabbed Greg and put them in our cab and took them to this restaurant. Jimmy had glass in his head and these guys were in a state of absolute shock, and the only thing they wanted to do was to have a couple of Scotches. They forgot what it was that they had come to tell us: that they were going to do third-party publishing on Sega. They completely forgot what they had come for.

Both Arakawa and I knew what they were getting ready to tell us, but we didn't say anything. The entire night we just sat there and we just got these smiles on our faces, waiting for them, and then we let them go that night. The next day they called and said, "Oh, we remember now why we had come to see you."

—Howard Lincoln, former Executive Vice President, Nintendo of America

Rare Becomes Scarce

Acclaim was not the only company to break ranks. Within the next few years, Konami, Tecmo, Taito, and nearly every other one of Nintendo's third-party partners would begin publishing games on Genesis. The two most notable holdouts were Capcom, which licensed a few games to Sega for Genesis rather than publishing them, and Square Soft, which maintained exclusivity with Nintendo throughout the 8- and 16-bit eras.

In 1992, one of Nintendo's most influential development partners—Rare Ltd., the British-based development company founded by Joel Hochberg and the Stamper brothers—completely vanished from the game publishing world. Rare had become a fixture in the Nintendo camp, creating more than fifty NES games that were published by such companies as Acclaim (*Iron Sword*), Milton Bradley (*Marble Madness*), and Nintendo itself (*Slalom* and *R. C. ProAm*).

With the outset of the Super NES, Rare created two games for Tradewest—*Battletoads in Battlemaniacs* and *Battletoads & Double Dragon: The Ultimate Team*. Then, after having kept up a pace of designing ten games per year, Rare went silent.

We [Joel Hochberg, Tim Stamper, and Chris Stamper] went to a developers' conference at Nintendo of America, and we didn't like what we saw. Too many companies were making 8-bit games for a 16-bit machine.

We had just visited Nintendo, and we went to the Bellevue Red Lion Hotel, and we were talking about company posture and direction. We were busy and we had a lot of opportunity, but there was a situation taking place that I was not comfortable with and I'm sure that they were uncomfortable, and I said, "Let's do something original. Let's pay close attention to what our company's requirements happen to be for moving forward." Those requirements were not taking somebody else's products and porting them over from the NES to the Super NES.

—Joel Hochberg, cofounder, Rare Ltd.

As creative people, we didn't want to be a sort-of conversion house for major third-party developers.

—Chris Stamper, cofounder, Rare Ltd.

The last few years had been particularly lucrative ones for Rare, and the company had enough money to experiment. As an artist, Tim Stamper was not satisfied with the idea of making games that looked like everybody else's. Chris, his brother, always the technical wizard, suggested that they could develop a new technology that would change the look of games. Chris Stamper was the engineer who discovered the NES's ability to run split-screen games. If he believed that he could create some new graphics technology for Super NES, there was every reason to believe him. The decision was made, and Rare Ltd. withdrew from actively designing games.

A Street Fighter from Japan

In 1982, Konami hired Yoshiki Okamoto, a young college student studying graphic arts in Osaka, to create posters and character art. The standard Japanese practice was to hire students in March or April, shortly after graduation; but Okamoto was given a part-time job in December with the understanding that he would work full time upon graduating that spring.

Looking back on his time at Konami, Okamoto, who did not particularly enjoy video games before joining Konami, would later decide that his employers never intended to hire a graphic artist and that he was tricked into becoming a game designer. A few months after he started with the company, Okamoto's boss asked him to try his hand at designing a game. It was supposed to be a driving game in which players earned a license by driving through streets filled with hazards and bad drivers. Okamoto did not like the idea. Since joining Konami, he had become fascinated with a Namco game called *Bosconian*, in which players controlled a spaceship as it flew through minefields, battled enemies, and attacked space stations.

Okamoto, a freewheeling individualist with a penchant for speaking his mind and a notoriously short attention span when bored, decided that creating a space game would be more fun than creating a game about earning a driver's license. Without telling his boss, Okamoto began work on a game that built upon *Bosconian* rather than the one his boss had asked him to do. This was a dangerous decision. Okamoto's boss knew him well enough to be suspicious, and the design team had to simultaneously create code for a driving game that they could show whenever executives came to check in on them, at the same time that they made the space combat game.

Then my boss asked if the driving simulation game was finished and came to check up on me. What I showed him was a totally different game concept, and he really got angry. The driving game was supposed to be a real simulation, but when he came, I showed him *Time Pilot*.

I said, "Why don't we do a location test?" He did the location test and [the game] got really good reviews, so he forgave me. At that point my boss said, "I told you so."

—Yoshiki Okamoto

Okamoto designed only two games during his time at Konami, but both games were considered classics. The first, *Time Pilot*, was a space combat game in which players flew a futuristic fighter craft through squadrons from different time periods. It began with waves of World War I-era bi-planes, then went to World War II, and eventually progressed to a futuristic battle against UFOs.

Gyruss, Okamoto's second game, was a *Tempest*-like space combat game in which players control a fighter that circles around the outside of the screen, shooting at enemies as they emerge from the middle. Amazingly, having just created two of Konami's most successful games of the time, Okamoto was fired.

I asked for a raise and they said they would give me a really small raise. But I wanted a little more, so I threatened to quit. So the next day, when I came to work, they fired me.

So I went to Capcom because it was the only company that would take me. At that time, Capcom was a really small company. I was the second person they hired for R & D.

—Yoshiki Okamoto

In 1984, Capcom, which was located in Osaka, was a fledgling company with only two game designers—Yoshiki Okamoto and Tokuro Fujiwara. Both men had seemingly endless talent and energy. A competition formed between them and that competition created enough synergy to make Capcom a leading force in video games.

Okamoto created a couple of little known games after arriving at Capcom, then designed *1942*, a top-scrolling flight game in which players controlled an American fighter flying a World War II mission over the Pacific theater. He then followed up with a similar game called *1943*.

Okamoto's next few games did not do well. As Okamoto struggled to come up with new ideas, Fujiwara created such Capcom classics as *Commando* and *Ghosts 'N Goblins*. Okamoto became worried about his job. He created a “soft porn” version of Mahjongg, a tile game that is popular in Asia, but in the meantime, he needed a special project—something big. The answer came from another Osaka-based game company—Taito. While looking at competitors' games, Okamoto ran across *Double Dragon II: The Revenge* and realized that with some of Capcom's newer technology, he would be able to improve upon this style of the game.

Double Dragon II was a two-dimensional side-scrolling gang-fighting game in which players walked along streets, fighting off muggers of all types. It featured simplistic three-button combat controls, with one button for attacking

enemies to the left, one for attacking to the right, and one for jumping. One problem with the game was its antiquated graphics. The combatants looked short and childishly scrawled. Capcom's research and development engineers had recently come up with new and more powerful hardware that could make much more realistic-looking characters and backgrounds. The end product was a game called *Final Fight*.*

With its simpler controls and much more sophisticated graphics, *Final Fight* improved upon the *Double Dragon* formula. Instead of having three buttons and a joystick, Okamoto's game had only "attack" and "jump" buttons. Players could execute several moves as they fought off attackers, but they did not have to master these moves to have fun with the game. The art was the biggest improvement. The characters in *Final Fight* looked cartoonish and moved stiffly, but they had human proportions and detailed faces. One of the enemies was a giant who looked and fought like Andre the Giant, a real-life professional wrestler. Released in 1989, *Final Fight* was one of Capcom's most successful games to date, but it was Okamoto's next game that made him famous.

Okamoto's next project was a sequel to a 1987 game called *Street Fighter*. The original *Street Fighter* was a one-on-one martial-arts fighting game. As Okamoto's team members created their version of what a *Street Fighter* game should be, they decided to include three elements from that game: secret moves that allowed players to throw fireballs, a character named Ken, and a character name Ryu.

The sales division said that we needed to make another *Street Fighter*; they had been asking for it for a long time. At one of the trade shows, *Final Fight* was shown with the title of *Street Fighter II*, but all the operators said, "Hey, that's not *Street Fighter*."

Originally, I wanted to change all the characters, but some of the players still liked Ryu and Ken.

—Yoshiki Okamoto

* Okamoto did not design *Final Fight*. By the time he began work on the project, he had already been promoted to producer.

It took ten months to complete *Street Fighter II: The World Warrior*. The game was a major undertaking and several artists worked on each of the fighters. The team created multiple hidden moves for each of the eight main characters in the game. Okamoto personally believed that this game would be just as successful as *Final Fight*, but once the concepts and art were complete and the fate of the game was in the hands of the programmers, he became nervous. Restless by nature, he found it impossible to sit around the office waiting to see the final results, so he often went off to play baseball to distract himself. These were nervous times for Okamoto. He had committed a great deal of time and resources to *Street Fighter II*.

Like *Final Fight* before it, *Street Fighter II* brought marked improvement to an already existing genre. Not only did it have the same kind of clean, ornately detailed, yet somewhat cartoony look that distinguished *Final Fight*, it also had a colorful cast of international brawlers. Along with returning martial artists Ryu and Ken, it featured ten other fighters, including a fire-spitting Hindu mystic, a lumbering Sumo wrestler, and a one-eyed kick boxer. Each character had unique abilities and special moves. Okamoto was well aware of the arcade prestige given to players who master hidden moves and difficult games, and he wanted to use that prestige to his game's advantage.

The game was a major international success. Its combination of brutal action, hidden moves, humorous characters, and bright graphics appealed to players all over the world. Released in 1991, *Street Fighter II* brought much-needed business to the dwindling American arcade industry. This was the first game since the mid-1980s that actually attracted players to arcades. More important, arcade owners bought multiple *Street Fighter II* machines and set them up in rows, the way they used to set up *Pac-Man* machines a decade earlier. Capcom will not release the final numbers, but some outsiders have estimated that more than 60,000 *Street Fighter II* arcade machines were sold worldwide. According to a former Capcom spokesperson, the arcade version of *Street Fighter II* earned more money than the movie *Jurassic Park* made in box office receipts.

Street Fighter II was even more successful as a game cartridge for Super NES. Capcom released it exclusively for the 16-bit Nintendo console and went on to sell more than 2 million copies of the game, making it the first third-party hit for the Super NES. In 1992, as Genesis started to pull away in sales, having the only home version of *Street Fighter II* gave Nintendo a needed edge.

Battle of the 16-Bitters

Was Genesis ever as advanced a machine as Super NES? Technically, no. I thought we were able to do better software than they were. They both are good machines, but I think the big advantage we had was we initially were able to do better software and it took them a long time to get up to speed on doing as good a [job on their] software.

—Tom Kalinske, former president and CEO, Sega of America

Nintendo sold 3.4 million Super NES consoles in 1991, a long-lasting record for first-year sales of new game hardware. This gave Nintendo a good share of the market. But with a one-year lead and more sales overall in 1991, Genesis continued to have the larger 16-bit install-base in the United States.*

They [Nintendo] always claim that there was a time after the launch when they pulled ahead of us, but our research said that there wasn't. They had a phenomenal initial launch. If you mean in terms of a month, I'm sure there was a month when they outsold us. You know, I'm sure they outsold us for a few months.

—Tom Kalinske

The fact is that the home video game market is made up of three categories, and having a good year in one category does not give you the right to claim overall superiority.¹

—Peter Main, vice president of marketing, Nintendo of America

Going into 1992, Sega had several advantages over Nintendo, including a much lower sales price and a larger library of games. Nintendo was slow in

* Genesis never amassed a significant install-base in Japan. Sega Enterprises CEO Hayao Nakayama may have allowed Tom Kalinske to drop the price and change the game that came with the console, but he had no intention of following Kalinske's example. Though Mega-Drive sales would increase briefly with major events such as the release of the new *Sonic The Hedgehog* game, Sega remained a distant third behind NEC and Nintendo throughout the 16-bit generation.

getting games to market, and some of the early Super NES games such as *U.N. Squadron* and *Bill Laimbeer's Combat Basketball* were not particularly fun. There were too many golf games early on, and the anticipated third-party titles, such as Konami's *Contra 3: The Alien Wars*, were slow in coming. Sega had ten games for every game on Super NES, and Sega's internally produced titles were getting better and better. Sega had a long line of arcade hits to draw from and several licensed contracts with Disney, as well as with such sports stars as Joe Montana and David Robinson. Capcom may have released only a Super NES version of *Final Fight*, but one of Sega's internal development teams created *Streets of Rage*, a similar side-scrolling gang-fighting game with bigger levels, tougher enemies, and amazing original music.

Not only were there more games for Genesis, but Sega also continued to produce titles at a faster pace. The market seemed to stop and take note every time Shigeru Miyamoto released a new *Mario* or *Zelda* game, but those games generally arrived at the rate of one per year. Sega released several anticipated games like *Streets of Rage* and *ToeJam & Earl* throughout the year. These games may not have been as widely anticipated as a *Mario* game, but they often had an edgy irreverence about them that helped shape the way people perceived Sega. More important, they gave Genesis owners something to look forward to buying in the near future, while Super NES owners had to wait for the Christmas season.

Every week we would have an executive review of the games we had in progress. And the meeting would involve anybody who wanted to join. . . . marketing, manufacturing executives would be there, producers, etc. We would review the games in a conference room that was called the Loony Bin. It was kind of funny.

When you watch the television commercials, they're very irreverent, very cutting edge, and this kind of . . . this attitude pervades throughout the entire company. When we had these meetings with Tom Kalinske and all the executive VPs in the room, you could say anything you wanted to. It was very interesting because people were swearing in the meetings and making off-color remarks. But it was all accepted. It was just part of the company culture, people could say anything about the game. They'd say things like, "That thing really sucked." Or, "That character really blows," and the executives were right there, taking it all in and very serious about it.

—Terry Huang, former public relations manager, Sega of America

Sega's advertising continued to evolve as well. While Nintendo's advertising seemed stuck in a Mario-esque world of cute images appealing to preteen kids, Sega turned to a noisy underground image. Sega commercials always ended with the "Sega Scream": some character screamed "Sega" into the camera. This new marketing approach, combined with an emphasis on sports games, *Sonic The Hedgehog*, and new lines of edgy games, changed some basic market demographics. Sega was becoming cool to high-school students, and the cooler Sega became, the less people were ready to admit that they liked Nintendo. When a Sony marketing team ran focus groups, they found that teenage boys who owned a Super NES console would not admit it.

I saw that our primary audience was over eighteen years of age. Nintendo tended to focus on younger kids. We attempted to focus on an older crowd. Forty percent of our business is over eighteen years old. Teenage and college-age kids have adopted the Sega Scream. I was backstage at a rap concert, and I watched rappers who did not know who I was meet each other with the Sega Scream.

—Tom Kalinske

As the year progressed, Nintendo sought to eliminate one of Sega's advantages by lowering the price of the Super NES console from \$179 to \$149. Nintendo of America vice president of marketing, Peter Main, would later comment that he wished they had gone with a \$149 price tag from the start. "I could have sold an extra million," said Main. Sega responded to the Nintendo price drop by reducing the price of Genesis to \$129.

According to the TRST data, sales information recorded by the industry-tracking NPD Group, Nintendo sold 5.6 million Super NES consoles in 1992, edging out Sega by 10 percent. Sega still had a larger install base and sold more software, but the momentum seemed to be moving in Nintendo's direction.

As Nintendo and Sega squared off for top honors in the 16-bit arena, NEC officially pulled out of the market, turning the sales of TurboGrafx over to a newly created company called Turbo Technologies Inc. that it formed with Hudson Soft. The writing was on the wall for TurboGrafx and had been since before the release of Super NES. The system had developed a cult following but it would never have a genuine hit game in the United States. Even *Bomk*, its mascot game, was almost unknown to the general consumer. (By comparison, a 1993 study showed that

more American kids recognized Mario and Sonic than Mickey Mouse.) Turbo Technologies continued marketing various versions of the TurboGrafx into 1994, then closed shop as Atari and 3DO entered the market.*

The ROM Race

In what may have been the oddest race in video game history, Sega and Nintendo began developing devices for a new storage format called CD-ROM and raced to deliver CD-ROM peripherals to retail. In truth, CD-ROM was anything but new. Computer companies had been using them as a method of mass storage for years prior to Nintendo and Sega making their discoveries, and NEC beat them by two years with TurboGrafx-CD. Sega announced plans for the Mega-CD, the Japanese version of the CD-ROM, drive in early 1991. The plan was to release the unit in Japan by late 1991, then in United States the following year.

Around Sega of America, the general reaction to the Mega-CD announcement was euphoric. The drive was seen as a way of turning the technological tables in Sega's favor and driving yet another nail into Nintendo's coffin. Sega of Japan and its partner on the project, Sony, handled all of the design work, shutting out Sega of America executives until the project was completed. As late as mid-1991, Japanese executives continued to keep the unit hidden from Sega of America, finally sending a crippled "dummy" drive to the U.S. that summer to show them what it looked like.

When you work at a multinational company, there are things that go well and there are things that don't. They didn't want to send us working Sega CD units.** They wanted to send us dummies and not send us the working CD units until the last minute because they were concerned about what we would do with it and if it would leak out. It was very frustrating.

* It should be noted that NEC was not the only straggler in the market at that time. SNK, a leading arcade company, released a 24-bit console called NeoGeo in 1990. NeoGeo was a name familiar to arcade goers, as SNK's coin-operated NeoGeo was popular with arcade owners.

NeoGeo was expensive. The base unit, which came with only a controller, sold for \$399—\$200 more than the Super NES. The full set, which included a game and two controllers, sold for \$599, and additional cartridges (which had the exact same code as the arcade game) routinely sold for \$200.

** Sega CD was the name of the American version of Mega-CD.

Somehow they had sent some ROMs, or we had procured ROMs somehow, and we had a dummy unit that was missing its ROM. I always liked to work late at night, and so did Shinobu Toyoda,* so it was like one in the morning and he came to me with this chip and with the Sega CD and the ROMs and said, "Can you actually make this work?"

I thought, "Yeah, I probably could." So, I put the chip in. There were a couple of other things that were unhooked, but we fixed it and plugged it in. So Shinobu and I were the first people in the U.S. to see the Sega CD boot up. Our take on it was one of wonder from the product development side, but as soon as we started to program for it, I think . . . I think the wonder went away quickly.

It was literally a mass storage extension of the Genesis. It wasn't a new system, and that was always the confusion internally. The internal people believed it to be a completely new system with new abilities. It did have small expansion abilities, but they were not significant.

—Michael Latham, former executive producer, Sega of America

Although Mega-CD, which would arrive in the United States in 1992 as Sega CD, had a more powerful processor and handled more colors than the Genesis processor, the single-spin CD-ROM drive was meant only to expand the size of games. Genesis and Super NES cartridges generally ranged in size from 8 to 16 megabits, but a single CD-ROM could hold 640 megabytes—320 times more data. With over 600 megabytes of storage, Sega CD could play games with digitized video. Before the company could launch the new medium, however, Sega would need games to support it. As luck would have it, several suitable games already existed.

The Nintendo Play Station

Nintendo also announced plans to manufacture a CD-ROM drive. Like Sega, Nintendo turned to Sony Corporation as a partner. At the Winter Consumer Electronics Show in January 1992, Nintendo claimed that it could manufacture and distribute the drive within the year. The problem was that Sony was proving to be a very dangerous partner. Sony executives had already

* Shinobu Toyoda was the vice president of licensing at Sega of America and the executive who worked most closely with Japan.

revealed plans to release their own CD-based video game system called the Play Station, and Nintendo executives wondered about the wisdom in giving them access to Nintendo's system by having Sony make a Super NES-compatible CD drive.

After reconsidering the situation, Nintendo executives allowed Sony to announce plans for the drive at the Consumer Electronics Show, then appeared the next day to say that they had struck up a deal with Philips N.V., the Dutch conglomerate, instead. Sony executives were shut out and humiliated. Ken Kutaragi, the young engineer whom Sony had placed at the head of the Nintendo project, went to Sony CEO Norio Ohga to plead for permission to keep the Play Station project alive, stating that the system could be built into a stand-alone unit. He proposed looking ahead to the next generation of game hardware and creating something that would immediately render Super NES obsolete.

Having just been humiliated by Nintendo, Ohga accepted Kutaragi's suggestion and brought it to the company board. The general reaction was unfavorable. Nintendo clearly had too much control over the market, and attempting to break in would be too risky. An internal battle ensued, with Ohga almost alone in his support of the venture. In the end, he decided to gamble on Kutaragi and approved the project.

As Kutaragi quietly started work on his project, Nintendo executives began looking for suitable games. One of the first projects to catch their eye was *The 7th Guest*, a breakthrough puzzle game that was being developed by a Medford, Oregon, company called Trilobyte.

We got a call one day from a guy working with Don James's group at Nintendo. They were trying to find games that would be appropriate for their CD-ROM drive that was eventually going to happen, and he gave me a call and said, "Do you have any CD-ROM titles that you're working on that we should have a look at?"

I said, "Oh, wow, I've got something that you've got to see. It's called *The 7th Guest*." So he flew down probably about a week and a half later and was given the tour of the company and shown the product. He said that he was very excited. Within a couple of days later, his boss Don James came down and took a look, and from there, they started negotiating a deal to purchase

the rights to *The 7th Guest* for the Nintendo CD-ROM player. A deal was eventually struck, and Nintendo got all CD-ROM game console rights to the product and Virgin (the game's publisher) was paid, I believe, \$1 million up front.

—Seth Mendelsohn, former senior game designer,
Virgin Interactive Entertainment

Nintendo never released its CD-ROM drive. Nintendo first announced delays and then claimed that the unit would be ready by August 1993. Behind the scenes, Nintendo was slowly closing down the project. By 1995, Nintendo would be the only major video game company that did not have a CD-based game system.

The Birth of Digital Pictures

With the collapse of the Nemo project, which he had begun in conjunction with Hasbro, Tom Zito had placed his live-action video games, along with office equipment and other supplies, in a Rhode Island warehouse and largely forgotten about them. What he did not know was that Sega and Nintendo had a new medium with enough storage space to handle his games and that a desperate search for games with digital video was underway.

Ken Melville was working at this company and happened to have a prototype copy of *Sewer Shark* in its original version on videotape. So he calls me up and says, "The weirdest thing happened today. Mickey Schulhof and Peter Guber were in here the other day. They saw *Sewer Shark*; they were blown away by it. I think they're trying to buy this company because they believe that this company owns *Sewer Shark* and has technology to do products like *Sewer Shark*."

Now Guber was the head of Columbia Pictures, which was owned by Sony, and Schulhof was the chairman of Sony U.S.A. It just so happened that my younger brother, Bob Zito, was Mickey Schulhof's PR guy.

I called my brother on the phone and told him the story and he said, "That doesn't sound at all possible."

"I really can't believe that's true." He said, "I'm gonna be with Mickey two weeks from now. If the opportunity comes up, I'll ask him. I'll get back to you."

About two hours later, my phone rang and it was my brother. He said, "Is this thing set in sewers?" I said, "Yeah," and he said, "You shoot at rats and bats?"

I said, "Yes."

He said, "And you own rights to this?"

I said, "Yeah."

He said, "I think you better take a red-eye to New York."

—Tom Zito, founder, Digital Pictures

As Nemo collapsed, Zito had purchased the rights to the video-based games that he had helped create for it, thinking they might some day be useable. With clear rights of ownership in hand, he met with Schulhof, who signed him up to create games for the Nintendo Play Station. Zito then formed a company called Digital Pictures. He spent the next year reworking two of the games that had been created for Nemo—*Night Trap* and *Sewer Shark*—so that they would run on the ill-fated Play Station. When the Sony/Nintendo partnership failed, Zito turned to Sega.

So then, in the meantime, Sony had gone off and started off with a Play Station of its own. And we started doing all this stuff for Sega CD; and the rest, as they say, is history. And meanwhile, I met Shinobu Toyoda at Sega and was aware that Sega was coming out with a CD system. When Sony went away, we sort of changed the focus of our development afterwards and started doing stuff for Sega CD rather than for Sony.

The incredible irony of it was that the video we plugged into the Super Nintendo was just terrific because Super NES could display 256 colors at once. Sega CD could only put up 32 colors at a time, so you had this horrible grainy look to the images.

—Tom Zito

Sega CD was released in the United States on October 15, 1992; it retailed for \$299 and Zito's game, *Sewer Shark*, came packed in the box. Digital Pictures became one of Sega's most important partners, creating several original games for Sega CD.

Tom Zito, CEO of tiny Digital Pictures, is one of the first to take advantage of the technology. Zito, who used to write for the *New Yorker* and *Rolling Stone*, spends some \$2 million filming real actors for his CD-based

interactive games. Corey Haim (*The Lost Boys*) and Debbie Harry (*Hairspray*) are among the performers who have starred in his miniproductions. His most interesting title this Christmas is *Prize Fighter*, directed by Ron Stein, who choreographed some boxing sequences in the 1980 Martin Scorsese classic *Raging Bull*. Besides trying to knock out a series of actors portraying boxers, you, the game player, become part of a story. In this case, a crippled boy on the sidelines cheers for you.²

PCs Get Game

Sega and Nintendo found themselves facing a new and increasingly more dangerous opponent in the early 1990s—PC computers. Just as the Commodore computer had caught up to Atari and Coleco a decade earlier, personal computers threatened to eclipse the new generation of video game manufacturers as the era of multimedia began.

The evolution to multimedia began as sound became more common on computers. Companies such as Roland and Turtle Beach had long offered sound cards that could handle audio files, and even most of the early PCs came with cheap speakers built in. But few people owned early sound cards and the sound that streamed through PC speakers was tinny at best.

In 1989, a company called Creative Labs, founded by a Singaporean entrepreneur named Sim Wong Hoo, introduced a reasonably priced PC sound card called Sound Blaster. The card, which featured an 11-voice FM synthesizer, input/output jacks, and a MIDI/joystick port, became the top-selling add-on card in the PC market. Sound Blaster was not the first sound card; it was not even Creative Labs' first sound card, but it was the first sound card to see this kind of success, and Sound Blaster compatibility became a standard throughout the industry.* Soon companies such as MediaVision and Gravis released their own Sound Blaster-compatible cards.

* In truth, Macintosh computers were much more suited for gaming than PCs. Macintosh monitors had slightly higher resolution than standard PC monitors and Apple computers did not have all of the compatibility problems that still haunt PCs.

Unfortunately, former Apple president Michael Spindler did not want people to see Macintosh as a gaming computer and did nothing to encourage companies to make games for them.

With the advent of Sound Blaster, PC game companies became very aggressive about adding audio to their games. Origin Systems, a company with a well-earned reputation for making technically superior games that would only run on the latest and most powerful personal computers, published a game called *Wing Commander* that began with a virtual conductor directing a symphony.

The next big move toward multimedia came in the form of CD-ROM drives. Soon companies such as Viacom New Media, Hyperbole Studios, and ICOM were flooding the market with “interactive movies” that featured bad scripts, amateurish acting, and minimal interactivity. Sanctuary Woods, a software publisher that would eventually produce a few impressive products before going bankrupt, released a series of interactive comics called *Victor Vector and Yondo*. CD-ROMs had provided the entertainment industry with a new frontier, and a wave of entrepreneurs rushed to take advantage of it.

Of the droves of games that flooded the market during the first years of multimedia, three stood out as the kind of “killer applications” needed to launch new technologies. The first was *Myst*, a game that was funded by a Japanese video game publisher called Sunsoft.

Myst was the creation of Rand and Robyn Miller; brothers who had moved to Spokane, Washington, to start up a game development company called Cyan Studios. They had sold a handful of games prior to coming up with an idea for a surrealistic adventure with elaborate puzzles. They needed funding, however. One of the first companies they approached was Activision; but they were turned down. Then they ran into Sunsoft.

We hooked up with Sun, which is a Japanese company, in 1991. They said, “We want a big epic CD-ROM product,” and we said, “We’re ready. We’ll tell you what we need.”

They funded it well. It ended up that they funded half of the project. It cost more than what we thought; but at the time, we had a relationship with Broderbund as well. When we showed *Myst* to Broderbund, they just fell in love with it.

—Rand Miller, cofounder, Cyan Studios

As a video game company, Sun Soft cared little about PC rights. The way the final contract was laid out, Sun Soft gave the Millers \$350,000 in exchange

for the console rights and went on to release *Myst* on 3DO, Jaguar CD, PlayStation, and Saturn. None of those versions sold particularly well, but Sun Soft's investment still paid for itself in less than one month. Working with Broderbund, the Millers released their game for Macintosh and it became a runaway hit. In 1994, Broderbund released a PC version. It became a hit, too. *Myst* went on to become the first CD-ROM game to sell over one million units. It remained on the computer game's bestsellers list for three years. Broderbund eventually sold four million copies of the game.

While *Myst* started out on Macintosh, then migrated to PC, the next multimedia blockbuster went in the opposite direction. *The 7th Guest*, the Virgin game that was licensed by Nintendo, brought a similar mixture of puzzle-solving and exploration to PCs. As a showcase for technology, *The 7th Guest* was a masterpiece. It featured a photo-realistically rendered virtual haunted house with live-action video of actors portraying ghosts. With far less puzzles than *Myst* and not nearly as visually appealing, *The 7th Guest* did not enjoy the same long-lasting success, and critics would later pan it. "A lot of people bought it, and a lot of people bought hardware just so they could play it," game designer Graeme Devine would later say in defense of his game.

The third game, and the one that has had the most long-lasting impact on the gaming world, was *Doom*, a first-person perspective game in which players stepped into the head of a marine who shoots everything he sees, as he works his way toward a confrontation in the depths of Hell.

Doom was a true team effort, created by a group of young computer enthusiasts who had started a company called id Software. Formed on February 1, 1991, id consisted of John Romero, the well-known creator of dozens of computer games and a legend among hardcore gamers; John Carmack, a somewhat otherworldly but brilliant programmer with a nearly unequaled ability to create incredibly complex graphics engines; Adrian Carmack, a talented artist with a gift for bringing gore and horror to life; and Tom Hall, the main designer of *Commander Keen*, id's first product and a game that helped establish the company's reputation.

Romero first came across the idea of 3D games when he called an old friend at Looking Glass, a company that was designing a game called *Ultima Underworld*. Intrigued by the concept, he brought it up with John Carmack to see if it would be possible for them to create a similar game.

John talked with some of the Looking Glass people and they were saying that they were doing a texture-mapped game. I said I could do that, and the next month—we were doing games every month—I did *Catacombs 3D*, which was our first 3D game. It was about running around in dungeons with trolls and stuff.

—John Carmack, cofounder, id Software

In 1992, id released its first hit game, *Wolfenstein 3D*. The game took its name from an Apple II game created by a man named Silas Warner. Players viewed *Wolfenstein 3D* through the eyes of a commando shooting his way through a labyrinth filled with Nazi soldiers, SS men, vicious dogs, and eventually, Adolf Hitler. Although it was an exciting game with great graphics, part of *Wolfenstein's* popularity sprang from its shock value. In previous games, when players shot enemies, the injured targets fell and disappeared. In *Wolfenstein 3D*, enemies fell and bled on the floor.

With *Wolfenstein*, the shock was only half of the attraction. The main draw was the super-fast 3D rendering engine and movement. Most of the raves came from the pure adrenaline rush of speeding at 70 frames per second through corridors and mowing down Nazis.

—John Romero, cofounder, id Software

id games were distributed via a unique method called “shareware.” The idea was that consumers could download the first section of the game for free from the Internet or order it by mail. If they liked the game, they could purchase the rest of it by contacting the publisher. Shareware offered small companies the chance to market their games and computer tools without having to compete with larger, more powerful companies for retail shelf-space. In the case of *Wolfenstein 3D*, the game was broken into three separate missions, the first of which was available as shareware. id and Apogee, the firm that marketed id's early games, maximized profits by creating several *Wolfenstein* games at once—the basic three missions, *The Nocturnal Missions*, and the *Spear of Destiny* missions, which were sold as a retail product.

Wolfenstein 3D was a trilogy; it had three episodes. That's sort of a shareware thing. Then we did *Spear of Destiny*, which is a retail version of *Wolfenstein*. It was a completely new adventure but with the *Wolfenstein* engine.

—John Romero

id's next hit, and the first game published under the id label, was *Doom*. It took John Carmack six months to create the graphics engine, with Tom Hall leading the game and map designs. Partway through the project, however, Hall left and John Romero took over, programming *DoomEd*—the game's map editor, while at the same time doing programming and map design. When the project was complete, everyone in the company knew they had a sure-fire hit. Not only did *Doom* have more gore than *Wolfenstein 3D*, it was decorated with Satanic symbols and populated with demons, images that thrilled gamers but infuriated critics of the gaming industry. Since it was originally released as shareware, however, the critics did not notice it until a few months after its release. In the meantime, *Doom* created a phenomenon unlike any PC game before or after it.

We put out a press release in January of 1993 saying what our next game (*Doom*) was going to have in it. From January to December, all of 1993, the entire Internet thing was really growing and we had newsgroups about *Doom* already. . . . before the game was out.

So we'd leak out a little bit more information. There would be an alpha that would leak or a beta that would leak, and people just started going nuts. So when the game was released, it crashed the University of Wisconsin's computers two times because there were so many people hitting it for *Doom*. . . . We just knew that when the game came out [in stores], that this was it. This thing was great.

—John Romero

Doom set a precedent for computer games. It established the 3D first-person shooter genre, a popular style of gaming that would top the bestseller lists for years. Though it was not the first first-person shooter, it set the standard by which such games as *Duke Nukem 3D*, *Jedi Knight*, *Unreal*, and *Descent* would be

judged. *Doom* also brought attention to shareware, validating it as a viable means of software delivery and establishing the idea of free demonstration copies as a marketing method.

Doom also demonstrated the entertainment power of multiplayer games. One of the game's better options was "death match," a mode in which players could hunt each other in teams instead of going after demons and monsters. *Doom* would become a lightning rod in later years. It would become a focal point for those who wanted to regulate or end the perceived stranglehold that the largest companies held over the entire interactive entertainment industry. Even as id completed its game, powerful forces were gathering in Washington, D.C. The gaming industry was about to come under an attack that would be felt from Redwood City, California, to Redmond, Washington.

Moral Kombat

I have been a parent for 16 years, a wife for 20, a teacher in Royal Oak, Michigan, for 23, and a woman since the day I was born. Let me tell you, in all of my labels and all of the hats I wear, I find that so extremely offensive, and the only words you can say to the manufacturers and shareholders of the company is, "shame on you."¹

—Marilyn Droz, Congressional testimony, expert witness, 1993 Joint Hearings

Roses are red, Violets are blue, So you had a bad day, Boo hoo hoo.

—Public letter to Tom Kalinske, Howard Lincoln, former chairman,
Nintendo of America

A Van Damme Big Game

Ed Boon worked on six pinball games at Williams before moving into coin-operated video games. The first two video games he worked on were arcade-style football simulations—*High Impact* and *Super High Impact*. John Tobias began his time at Williams working with Mark Turmell, creator of *Smash TV*, *NBA Jam*, *Wrestlemania: The Arcade Game*, and *NFL Blitz* and almost unquestionably America's last significant arcade game designer. Tobias worked on Turmell's team as he created *Smash TV* and *Total Carnage*—games that revived the same basic double-joystick gameplay that Eugene Jarvis originally created for *Robotron 2084*. Having just finished recent projects, both men were available in 1990 when the call went around Williams for a fighting game to compete with *Street Fighter II*. Boon and Tobias teamed up to do it.

To make their game stand out from the flood of *Street Fighter II* imitators, Boon and Tobias decided that they would use digitized graphics rather than traditional animation. Having already manufactured *Narc* and *Terminator 2*, Williams had the technology to create the game, and Atari had already proved that such a game could be made, with *Pit Fighter*. In designing their game, Boon and Tobias wanted to make their combatants as large as possible, while still being small enough to move around the screen freely. They also wanted to attach their game to a known personality, someone who fit the image of the kind of fighting they would show in their game. Martial-arts movies were enjoying a resurgence of popularity at the time, and Boon and Tobias believed that attaching their game to either Aikido master Steven Segal or European star Jean Claude Van Damme would attract players. This, however, proved unlikely. Segal, who had made quite a stir with *Above the Law* and *Hard to Kill*, had already agreed to appear in another game. When they contacted Van Damme's agent, he told them that his client, the self-professed "Fred Astaire of Karate" who had recently starred in such movies as *Kickboxer* and *Bloodsport*, was in discussion with Sega.

Rather than look for an older or lesser-known martial artist, Boon and Tobias decided to create an entire universe of their own. They created an elaborate mythology with complex characters fighting each other for the chance to represent Earth in a battle against an evil monster in a cosmic tournament that would decide the fate of humanity. The entrants in this tournament were as colorful as the tournament itself. There was Liu Kang, the strong and silent

Bruce Lee-type; Raiden, the god of thunder; two mystic ninjas—Scorpion and Sub-Zero; a female special forces agent named Sonya Blade; a gangster with a metal plate covering part of his face, named Kano; and a movie star named Johnny Cage.

Johnny Cage was just kind of a play on the whole Van Damme thing. I mean, when Van Damme didn't pan out, we kind of still had this role that was slowly being created, and we just thought, well . . .

—Ed Boon, game designer, Williams/Bally/Midway

If one lesson from *Street Fighter II* was not lost on Boon and Tobias, it was the importance of hidden moves. In the ten short months it took to create the game, they fashioned layer upon layer of special moves and hidden secrets. By the time their game appeared in arcades, it contained special characters, moves, and ways of ending the fights.

Reptile was a last minute idea. Someone came up with the idea of doing a green [ninja] as opposed to the red (Scorpion) and blue (Sub-Zero), and having him be this hidden feature that is seen very rarely. We knew that the rumors were running kind of rampant about the game and as a last ditch effort we just threw Reptile in, saying, "Let's make this come out very rarely so only a few people will see it." We hoped that the people who saw it would talk about it with a lot of conviction; but since no one else would have seen it, everybody would kind of call them liars. You wouldn't know if somebody was telling the truth or not if you said, "There's a guy, a green ninja, and you fight him at the bottom of the pit."

The things that had to happen to make Reptile come out were so rare. . . . You had to have flawless victories as you defeated opponents, do a fatality, and something had to fly in front of the moon. It was a very rare occurrence that all three things happened, but they happened.

—Ed Boon

Boone and Tobias named their game *Mortal Kombat*. The name probably referred to the background story about mortals entering a fighting tournament

against beings from another dimension; but critics would later say that it came from the game's "fatality" moves. Each match in *Mortal Kombat* was for the best of three falls. When a combatant was defeated the second time, he or she would stand in a swaying stupor for a few seconds, allowing the victor to finish the match with special signature moves called "fatalities."

Other fighting games had this thing where you would get dizzy, and the other guy would get a free hit on you, and you had to accept the fact that you were going to get hit. We hated the idea of being the guy who's dizzy, but it was great to be the guy who was walking up to go beat the crap out of him, so we moved that to the end of the fight where damage was already done. We had this dizzy animation, and then at one point somebody suggested, "Let's make it gruesome." And everything just kind of built on that. It became a huge part of the game. We didn't know that was going to be such a big attraction. It just happened.

—Ed Boon

Fatalities ranged from Kano wrenching his opponents' hearts out of their chests to Scorpion pulling out their spines and skulls. These were not the kind of graphic cinematic sequences you might see in a movie—they were fast with a splash of animated blood and no kinds of incisions. Knowing how to perform *Mortal Kombat's* fatalities became a sign of prestige around arcades because they were not easily executed. Once you won the fight, you had to get within range of your opponent and then know special combinations of joystick moves and buttons to punch. When the game first came out, some arcade goers would stand around watching other people, in the hope of catching a glimpse of one of the fatalities.

At the time, we thought these button and joystick combinations were going to be so hard to do that nobody would ever figure them out. I think the first time we put *Mortal Kombat* out at a test location, in that first weekend somebody found it.

—John Tobias, former game designer, Williams/Bally/Midway

The fighting game craze had already revived the arcade business when Williams began shipping *Mortal Kombat*. The game was an instant hit, easily eclipsing *Street Fighter II* in overall popularity with American audiences.

At the time that *Mortal Kombat* was released, Acclaim Entertainment had a contract for the exclusive rights to the home-console versions of Williams arcade games. The partnership would prove very profitable for both companies. Under cofounder Greg Fischbach's leadership, Acclaim had set up the biggest and best sales networks of any of Nintendo's third parties.

Acclaim put great quantities of effort and money into the *Mortal Kombat* license, creating a \$10 million marketing campaign and stocking nearly \$40 million worth of inventory. Acclaim's designers created authentic versions of *Mortal Kombat*, complete with all of the special moves, for both Genesis and Super NES.* Super NES, with its multiple processors, was particularly well suited for *Mortal Kombat*, and the game looked and moved very much like the arcade game. It was not, however, tailor-made for Nintendo's entertainment standards.

I guess it was June 1993 that Nintendo of America was confronted with *Mortal Kombat* as a home video game that Acclaim was doing. We had game standards that we were enforcing all along. We made a list of what you can and can't do: "No excessive blood and violence and what not." "No sex." Applying those standards to *Mortal Kombat*, we told Acclaim [designers] that they would have to tone down their version of *Mortal Kombat*, which, I believe, was going to come out in September of 1993.

We spent a whole summer screwing around, trying to decide how to handle that issue. Ultimately, we decided that the death moves or finishing moves would have to come out.

Acclaim kept coming back and saying, "Look, we're going to make the Sega version, and it's going to be right in line with the coin-op game. Having a toned-down version for Nintendo . . . Do you guys really want us to do that? Does that really make sense?"

—Howard Lincoln, former executive vice president, Nintendo of America

* Acclaim also released Game Gear and Game Boy versions of *Mortal Kombat*. Amazingly, Acclaim sold 1 million copies of the Game Boy cartridge.

The home version of *Mortal Kombat* was released in September 1993, and the sales went through the roof. Over the life of the product, Acclaim sold approximately 6.5 million *Mortal Kombat* cartridges. The Genesis version, which included the original arcade fatality moves, outsold the edited-down Super NES version by nearly three-to-one, propelling Genesis hardware sales to new levels. Not only did the decision to remove the violence hurt sales, it also offended many Super NES owners. According to Howard Lincoln, Nintendo received thousands of angry letters, including a few letters from parents, warning Nintendo not to censor their children's games.

Nintendo made a terrible blunder from a marketing standpoint in putting out a sanitized version of *Mortal Kombat*. Sega kicked their butt on that; probably sold 4 times as many units of *MK* bloody than Nintendo did *MK* sanitized.

—Tom Zito, founder, Digital Pictures

Judgment Day

I remember saying to Fischbach and to Rob Holmes [also of Acclaim], "I can guarantee you with *Night Trap* and now *Mortal Kombat*, we're all going to end up in front of Congress."

—Howard Lincoln

I think that all of this stuff that happened with the Senate was really orchestrated by Nintendo.

—Tom Zito

A great deal of debate surrounds the events that led up to the 1993 joint hearings that investigated the marketing of video game violence to minors. People at Sega and Digital Pictures claimed that Nintendo encouraged the hearings to stop Sega's runaway sales. Some people claim that Nintendo director of communications Perrin Kaplan initiated the debates over game violence when she delivered a speech to National Organization of Women in the fall of 1993.

Others claim that Nintendo representatives went to Washington, D.C., and showed several people in Congress tapes of violent games, in the hope of stirring up trouble for Sega.

I think Nintendo had taken such a trouncing that they decided to sort of go for broke and attack Sega. And they made these tapes up that showed *Night Trap* and showed *Mortal Kombat* on Genesis versus Nintendo. They hired a lobbying firm, and the lobbying firm basically started going around banging on doors to see if they could find a congressman who would be interested in taking this up as a cause. And I think that Nintendo was hoping that the public would be so outraged at what Sega was doing versus what Nintendo was doing that there would be pickets in front of every Toys "R" Us store, saying, "Don't buy Sega products."

—Tom Zito

The official account of the events that led up to the hearings is that U.S. Senator Joseph Lieberman (Democrat of Connecticut) became concerned about video game violence when Bill Andresen, his chief of staff, told him about a hot new game named *Mortal Kombat*. Andresen's nine-year-old son wanted a copy of the game, but Andresen, having heard that it was "incredibly violent," did not want to purchase it for him. Out of curiosity, Lieberman suggested that they get a copy and see what it was about.

I was startled. It was very violent and, as you know, rewarded violence. And at the end, if you really did well, you'd get to decide whether to decapitate . . . how to kill the other guy, how to pull his head off. And there was all sorts of blood flying around.

Then we started to look into it, and I forget how I heard about *Night Trap*. And I looked at that game, too, and there was a classic. It ends with this attack scene on this woman in lingerie, in her bathroom. I know that the creator of the game said it was all meant to be a satire of Dracula; but nonetheless, I thought it sent out the wrong message.

—Joseph Lieberman, Democrat of Connecticut, United States Senate

Once he saw *Mortal Kombat* and *Night Trap*, Senator Lieberman became concerned about the peddling of what he considered the equivalent of R-rated materials to children. He did some reading and found surveys that showed pre-Genesis demographics, with the average player being a seven- to twelve-year-old male. It should be noted that the 16-bit generation was only a few years old, and Sega was only beginning to gather data that showed the shift Genesis had brought to the market. It should also be noted that although only 10 percent of the games on the home market were violent, *Street Fighter II* and *Mortal Kombat* were huge sellers and fighting games seemed to dominate the market.

Having come to the conclusion that video game publishers were marketing violence to children, Senator Lieberman decided to see what his constituents thought. He asked parents in his home state of Connecticut about the games. Their answers gave him cause for further concern.

I started to talk to people in Connecticut about it. Part of what I was hearing back from parents was that they didn't know what was in the game. Either there was a generational gap, which meant that they really didn't know how to use the machines, or they just didn't take the time. In a lot of these games, as you probably know, you have to spend a little time playing until you get to the so-called good parts.

—Senator Joseph Lieberman

As to allegations that Howard Lincoln approached him, Senator Lieberman always insisted that Nintendo did not contact him to initiate the inquiry into the video gaming world. But he also remembers meeting with Howard Lincoln once the plans for the hearing were in place.

He certainly didn't initiate the process; in other words, we went to him. We went to the industry. I had not heard about Howard Lincoln before we planned the whole thing. In fact, to be very honest about it, and there's nothing wrong with it, once the hearings were announced, I saw Slade Gorton [U.S. senator from Washington] on the floor of the Senate one day on a vote and he said, "I just got a call from the folks from Nintendo, which is real important in Seattle."

I later learned that they had played this enormous and incredibly sort of civic role in helping Seattle to keep the baseball team there. So anyway,

Slade was all tied in with them and he said, "There's a guy named Howard Lincoln who you've called to testify. Do you mind speaking to him or having your staff speak to him?"

—Senator Joseph Lieberman

As Senator Lieberman proceeded to arrange a hearing on the marketing of video games, Nintendo, Sega, and other companies found themselves in an untenable situation. They did not have their own lobbying organization. Many belonged to the Software Publishers Association, the same trade organization that represented Microsoft and WordPerfect. Their relationship with SPA, however, was shaky. Interactive entertainment companies, especially video game manufacturers such as Sega, Nintendo, and Electronic Arts, had long felt like the black sheep of the SPA community. The bulk of SPA's membership was made up of "serious" software companies that did not consider video game manufacturers legitimate members of the computer industry, and the top executives at the game companies did not expect to receive sufficient support during the hearings.

Senator Herb Kohl (Democrat of Wisconsin), chairman of the Subcommittee on Juvenile Justice, and Senator Lieberman, chairman of the Subcommittee on Regulation and Government Information, presided over the hearings that officially began on December 9, 1993. The proceedings started off on a strange note. One week before the hearings, Bob Keeshan, a.k.a. Captain Kangaroo, held a press conference in which he stated that "It would be hoped that software manufacturers would understand their role in a nurturing society and exercise that accompanying responsibility to commercial-free speech."² Keeshan did not participate in the hearings but submitted a prepared statement that was aimed at both the legislators on the panel and parents, reminding them of the responsibility to nurture their children.

Then, a few hours before the hearings began, representatives of several large game manufacturers sought to partially defuse the bad publicity by announcing that the industry had decided to endorse a rating system. The announcement was well timed, and several senators referred to it throughout the meetings.

Most of the hearing was taken up by the testimonies of expert witnesses from two panels: one consisting of experts on education and child psychology and

the other made up of industry executives. The expert panel consisted of Parker Page, president of the Children's Television Resource; Dr. Eugene Provenzo, Jr., of the University of Miami; Robert Chase, vice president of the National Education Association; and Marilyn Droz, vice president of the National Coalition on Television Violence.

Page led the panel testimonies, citing the limited research that existed in the early 1990s into the effects of violent games on the children who played them. He finished with three recommendations for the industry: (1) that the federal government fund independent research projects into the effects of violent games and that the results of the research, along with a game-rating strategy, be made available to parents; (2) that future advertising should reinforce, not undermine, game ratings; and (3) that a voluntary industry-wide cap be placed on how much violence is allowed in games.³

From the start, an issue that came to the forefront of the hearings was concern about realistic-looking characters in games. *Street Fighter II* and even *Eternal Champions*, an especially violent fighting game for Genesis, were seldom if ever mentioned in the hearings. Neither were *Doom* or *Wolfenstein 3D*. The emphasis throughout the hearings was placed on games with digitized human images, that is, *Mortal Kombat*, *Night Trap*, and, toward the end of the hearings, *Lethal Enforcer*. Even the launch of an arcade game from Strata titled *Time Killers*, in which players hacked off each other's limbs with swords, saws, and axes, went unnoticed.

The next panel member, Dr. Eugene Provenzo, Jr., was well known to video makers, having published a book called *Video Kids: Making Sense of Nintendo*, which took a critical look at the impact that video games had on children. "Video games are overwhelmingly violent, sexist, and racist," he testified.⁴

Now, if the video game industry is going to provide the foundation for the development of interactive television, then concerned citizens, parents, educators, and legislators have cause for considerable concern and alarm. During the past decade, the video game industry has developed games whose social content has been overwhelmingly violent, sexist, and racist—issues that I have addressed extensively in my research.

For example, in *Video Kids*, I explored the 47 most popular video games in America. What I found out was that violence was the main theme. Of the 47 most popular games—this is based on *Nintendo Power* polls, industry polls—

40 had violence as their main theme. Of these 47 games, 13 included scenarios in which women were kidnapped and had to be rescued; i.e., the idea of women as victims. This represents a total of 30 percent of the games, a number which is even more revealing when we take into account that 11 of the 47 games were based on sports themes such as car racing and basketball.^{5*}

**—Eugene Provenzo, professor of social and cultural foundations
of education, University of Miami**

The most telling testimony came from Robert Chase of the National Education Association. Chase warned about the instinct to censor materials and cautioned against it, while at the same time decrying the level of violence in some games. Throughout his speech, Chase stood firmly behind the idea of a rating system that would provide parents with “appropriate tools for making reasonable judgments.” Then he made a statement that would later be echoed by much harsher and angrier critics.

Electronic games, because they are active rather than passive, can do more than desensitize impressionable children to violence. They actually encourage violence as the resolution of first resort by rewarding participants for killing one’s opponents in the most grisly ways imaginable.⁶

—Robert Chase, vice president, National Education Association

The last member of the panel was Marilyn Droz, whose testimony sounded more like an emotional plea than anything else. In the course of her testimony, Droz stated that “Girls are very offended by the lack of games for them to play” and that “playing video games has become a macho boy thing.”

The video industry has done the same thing that the movie industry has done. They have confused children’s desire for action with violence. My 23 years of working with children directly has proven to me that children want action,

* It is interesting to note that if 11 of the 47 games were sports games and 40 of the 47 games had violent themes, then Dr. Provenzo considered a minimum of four sports games to have violent themes. In fairness, though, some psychologists have pointed out that although cartoonlike in nature, games such as *Super Mario Bros.* and even *Kirby’s Dreamland* are violent.

they want excitement. They do not need to see the insides of people splattered against the wall to understand. You know, they need action, but they do not need to find murder as a form of entertainment.⁷

—Marilyn Droz, vice president, National Coalition on Television Violence

Once Droz finished her testimony, Senator Kohl asked the members of the expert panel what they would say to the industry panel if they had the chance. Page said that he would ask about marketing techniques and encourage game makers to focus on action rather than violence. Provenzo said that “by manufacturing games such as *Night Trap*,” the game companies were “endorsing violence.”⁸ He went on to say that there was an obligation to make good games and to stop confusing violence for entertainment. As a closing remark, Provenzo called for guidelines for parents—the rating system that Senator Lieberman had advocated from the start.

Given his chance to speak, Robert Chase said that he would leave them with a message of responsibility. Finally, Droz called for a ratings panel that included people from outside the industry. “I feel to allow them to police themselves when they have already demonstrated that they are out of control,” she said, “is like leaving a classroom in charge of the troublemaker.”⁹

Senator Lieberman asked Eugene Provenzo for examples of the video game racism he cited in his testimony and in his book.

In interviews with children, what I found was that they talked about the ninjas as being bad. Then you asked them about who ninjas were, and they were sort of like the Japs and the Chinese. It turns out that they perceive Asians, any Asians, as being extremely violent, as being dangerous, as being evil. It is operating at a very basic level and at times simplistic.

It carries over into other areas as well. There are depictions, I believe, although it is hard to prove, but my perception of homophobia operating in terms of how certain types of women are portrayed.¹⁰

—Eugene Provenzo

Throughout the question-and-answer period, the one game mentioned most was *Night Trap*. Senator Byron Dorgan of North Dakota started to comment that

the committee had the testimony of Tom Zito, “who is not with us,” when Zito interrupted him from the gallery, yelling, “I’m here, sir. I called, but there was no time to give a statement.”¹¹

Reading the transcripts of the 1993 hearings, it is hard to believe that anybody had ever actually played *Night Trap*. Few people bothered to acknowledge that the goal of *Night Trap* was not to kill women but to save them from vampires. Players did not even kill the vampires—they simply trapped them in Rube Goldberg-like booby traps. Nearly everyone who referred to *Night Trap* mentioned a scene in which a girl in a rather modest teddy is caught by the vampires and killed. The scene was meant to show players that they had lost and allowed too many vampires into the house. When this was pointed out to Marilyn Droz, she responded:

Oh, it makes me feel a lot better that if you are a loser, you are dead? No, it doesn’t. We are dealing with self-esteem here. There are many magazines out there on the market like the several I brought in here today. These magazines are filled with game tips on how to play the game. In no time at all, children become winners and kill, and their kill ratio goes up. It tells them the secret codes and exactly what to do to become successful in murder.

My statement to people who feel that there is some value to these games is that if the Pentagon was to ever have suggested years ago that we put video games that teach children how to aim guns and train them at the age of eight to be soldiers, and ever invented a game to put in homes of young boys to train them to be in the military, I can’t begin to tell you . . . you know what kind uproar there would be in this country if our government was to start training early killers.¹²

After interviewing the panel of experts, the senators turned their attention to a panel of industry representatives that included Howard Lincoln, executive vice president of Nintendo of America; Bill White, Jr., vice president of Sega of America; Ilene Rosenthal of the Software Publishers Association; Dawn Wiener, president of the Video Software Dealers Association; and Craig Johnson of the Amusement and Music Operators Association. The battle that was about to transpire was, if nothing else, bizarre.

Howard Lincoln led off by stating that Nintendo was “just as concerned about the issue of violence, whether in the movies, television, or video games, as anyone in the room.”¹³ Having made the decision to edit the violence out of the Super NES version of *Mortal Kombat*, Lincoln entered the proceedings with an air of innocence. Senator Lieberman even offered Lincoln an air of courtesy that was not extended to the people from Sega.

Lincoln went on to extol his company’s virtuous endeavors. He said that thanks to the security chip, companies had to get Nintendo’s permission to create games for the NES and Super NES. “Nintendo has video game guidelines which control game content, and we have applied these to every one of the more than 1,200 games released into the market by Nintendo and its licensees.”¹⁴

In the past year, some very violent and offensive games have reached the market and, of course, I am speaking about *Mortal Kombat* and *Night Trap*. Let me say for the record, I want to state that *Night Trap* will never appear on a Nintendo System. Obviously, it would not pass our guidelines. This game, which, as you have indicated, promotes violence against women, simply has no place in our society.¹⁵

—Howard Lincoln

When Lincoln mentioned that Nintendo had been criticized by children and parents alike for “sanitizing” *Mortal Kombat*, Senator Lieberman interrupted him to ask about it. “We have received letters, we have received literally thousands of phone calls,”¹⁶ Lincoln responded.

If Lincoln was the welcomed guest, Bill White of Sega was the man on the hot seat. Both of the games that had prompted the hearings were made for Genesis, and without ever mentioning Sega, Lincoln had pointed a scathing finger at the company during his testimony. White tried to improve his company’s image by restating the vital information that Lincoln and the senators seemed to have ignored. He started by stating three points: Sega’s customer base was older and broader than the previous experts had suggested; Sega already had a rating system; and Sega was trying to encourage the rest of the industry to adopt a rating system.

In recent days, the glare of the media spotlight on this issue has resulted in the circulation of a number of distorted and inaccurate claims. The most

damaging of these distortions, in my view, is the notion that Sega and the rest of the digital interactive industry are only in the business of selling games to children. This is not the case.

Yes, many of Sega's interactive video titles are intended for and purchased by young children. Many other Sega titles, however, are intended for and purchased by adults for their personal entertainment and education. The average Sega CD user is almost 22 years old, and only 5 percent are under age 13. The average Sega Genesis user is almost 19 years old, and fewer than 30 percent are under age 13.¹⁷

**—William "Bill" White, former vice president
of marketing/communications, Sega of America**

White went on to explain Sega's "three-pronged approach" to informing parents. According to White, Sega not only placed ratings on all Genesis games but also included a toll-free hotline for consumers to get ratings, and informational brochures about the ratings were made available.

Listening to White, Howard Lincoln was apparently seething. Years later, Lincoln said, "I heard him saying these things that I knew he didn't believe, and I'm not sure what came over me." He sat quietly through Rosenthal's, Wiener's, and Johnson's testimonies, preparing a response to Bill White. Lincoln's anger may have been aroused by the way White tried to speak for the entire industry, and it may have been in response to the way he characterized Sega as being on the forefront of protecting children from adult material.* It may also have sprung from their past relationship. White had been Nintendo of America's director of advertising and PR and had joined Sega a few months after an ugly split from Nintendo. Whatever his reasons, Lincoln waited until the question-and-answer period after Johnson's testimony to speak.

Lieberman directed his first comment to White, stating that the clip he had seen of a woman being attacked in *Night Trap* was "gratuitous and offensive and ought not to be available to people in our society."¹⁸ White responded by reiterating his message about the market maturing and the importance of

* In fairness, a 1991 suit between Sega of America and a game manufacturer called RazorSoft centered on a game called *Stormlord*, which Sega rejected because it contained statues of naked women.

ratings. Senator Lieberman continued to pick at White, pinning him down on whether or not *Night Trap* was a product for adults, then pointing out that if it was indeed being marketed only to adults, Sega should be obliged to enforce the ratings. He then proceeded to show the commercial for *Mortal Kombat* and commented that the boy in the commercial appeared to be under thirteen years of age—too young to buy the game, according to Sega’s ratings.

Senator Lieberman then turned to Lincoln and threw him a softball question. After faintly praising Nintendo for its limited self-regulation, he asked if Nintendo would be willing to display ratings on advertisements and in brochures as well as on games. Lincoln said he would, then changed the subject.

Let me make just a couple of other points. I can’t sit here and allow you to be told that somehow the video game business has been transformed today from children to adults. It hasn’t been, and Mr. White, who is a former Nintendo employee, knows the demographics as well as I do.

Furthermore, I can’t let you sit here and buy this nonsense that this Sega *Night Trap* game was somehow only meant for adults.

The fact of the matter is this is a copy of the packaging. There was no rating on this game at all when the game was introduced. Small children bought this at Toys “R” Us, and he knows that as well as I do. When they started getting heat about this game, then they adopted the rating system and put ratings on it.¹⁹

—Howard Lincoln

What could Lieberman say? He thanked Lincoln for his “forthrightness” and praised Nintendo for “having been a damn sight better than the competition.”

Well, the truth is that those statistics were very true and I think Howard knew those statistics were true. He would have to if they kept the same records that we kept. And having worked there [Nintendo], I imagine they did. Those were the primary player demographics that we measured, based on warranty card returns from our games, both software and hardware. And they represent the actual reported age of the people that play the games.

—William “Bill” White

White shot back with a videotape showing violent games on Super NES. Nintendo's self-regulation did not go far enough, he argued. At least, Sega games had ratings. The tug of war continued, with Lincoln pointing out that without enforcement, ratings would not keep violent games out of the hands of children and White stressing the importance of ratings.

One of the true highlights of the testimony, for me, was when after days of Nintendo claiming how pure they were in Lincoln's sanctimonious testimony, White pulls out the huge bazooka-like gun that Nintendo sold for use with the Super NES and asked Howard if this was what he meant by saying that Nintendo controlled the product it made and protected families and kids.

Howard was shaken, ashen, and furious.

**—Richard Brudvik-Lindner, former director of communications,
Sega of America**

I really had not planned on taking Sega on, but it became such a delightful opportunity. It was broadcast twice on C-SPAN, and the part when I really took White on was broadcast on CNN. It was everywhere. I don't remember what it was that he said, but it was so dumb. It just brought out the lawyer in me. I mean, it was a golden opportunity I couldn't pass up.

—Howard Lincoln

I was surprised when Howard Lincoln and Bill White went after each other like that. I thought that it looked awful. And I was surprised at the intensity of it. I guess it gave me this message that this was obviously big business.

—Senator Joseph Lieberman

The meeting continued, with Senators Lieberman, Kohl, and Dorgan hammering Bill White, until it finally adjourned at 1:52 P.M. Before closing the meeting, Senator Lieberman called for a second meeting to be held in February to evaluate the industry's progress toward adopting a rating system.

In a lot of ways, the hearings really changed the industry. It was a coming of age for the industry. It really marked the arrival of Sega as the industry leader.

It created alliances and engendered animosities that exist to this day. It also created the opportunity for the PC entertainment industry and the video game industry to check each other out and see if they could be married. It forced these companies to develop a political savvy that they never really had.

—Richard Brudvik-Lindner

Many changes occurred during the three months between the first Senate hearing in December and the much more serene second hearing on March 4, 1994. Howard Lincoln was promoted to chairman of Nintendo of America, making him co-equal with Nintendo of America president Minoru Arakawa. Work had begun on a rating system. Despite Sega's suggestion that the industry adopt its system, a new one was being created. Also, largely as a result of the publicity generated by the hearings, *Night Trap* had sold out all across the country. Sega CD had never been more than a niche product, with approximately 250,000 units sold in the United States. Had it not been for the hearings, *Night Trap* would have vanished as just another forgotten Sega CD game. Given new publicity from the hearings, it was later rereleased for both PCs and 32X.

Sega wound up selling way more copies of *MKI*, probably as a result of the hearings. *Night Trap* came back to life. You know, I sold 50,000 units of *Night Trap* a week after those hearings.

—Tom Zito

New Organizations

Two things became obvious to people pretty quickly. One was that the industry ought to attempt to come up with a self-regulatory response to congressional concerns about content; and the second was that it ought to consider creating a trade association to represent its interests, not just in Washington and at the state level but in a variety of forms.

—Douglas Lowenstein, president, Interactive Digital Software Association

Two organizations were formed as a result of the hearings. In 1994, game company executives decided that they had better create their own trade organization rather than depend on the Software Publishers Association.

Seven industry leaders met to discuss the formation of the organization: Nintendo, Sega, Acclaim, Electronic Arts, Phillips, Atari, and 3DO. The meetings, intense and private, took place over a six-week period, punctuated with hostile power struggles between Nintendo and Sega. The fighting eventually led to compromise and the creation of the Interactive Digital Software Association (IDSA), the interactive entertainment industry's own dedicated trade and lobbying organization, headed by a seasoned Washington, D.C., veteran named Douglas Lowenstein. In later years, the IDSA would prove to be very effective when the industry was under siege.

The creation of the rating system did not proceed without battles. In the beginning, Sega executives wanted the entire industry to adopt their rating system. When it became obvious that Nintendo and several other companies would not use the Sega rating system, Sega took a leading role in trying to establish a new system that would be mutually acceptable. Even this did not end the fighting. Several computer game publishers created their own rating system, which they used for more than a year before eventually accepting the video game ratings.

Well, I think the real reason they didn't go with Sega's rating system was that it was Sega's rating system and . . . at the time the notion of Nintendo and Sony as fierce competitors, with Sega adopting a system identified with Sega's product, was . . . that was very unpalatable.

—Douglas Lowenstein

It's somewhat ironic that Sega was criticized the way it was, for having actually taken a lead in producing a rating system that would provide the very information that the senators wanted to see on every package across the industry. I think Sega should have been congratulated publicly for having taken a lead in establishing ratings for games, albeit amongst games that were proprietary or running on Sega platforms. And, of course, Sega was

instrumental in the formation of IDSA and was very proactive in helping bring the industry into compliance with Senator Lieberman's requests.

—William "Bill" White

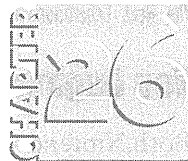
Video game makers also created the Entertainment Software Rating Board (ESRB), an independent organization to rate games. Led by Dr. Arthur Pober, a highly respected educator, the ESRB won rave reviews when it presented its rating system to Senators Lieberman and Kohl. Though they resisted at first, computer game makers eventually adopted the IDSA's rating system, which reinforced the industry's new unity.

At Williams Manufacturing, Ed Boon and John Tobias made a modification to their basic game formula as they created *Mortal Kombat 2*. They kept the blood, brutality, and fatalities, but they also added a new kind of finishing move called "friendship." Friendships worked very much like fatalities—if a player defeated an opponent for two rounds, the opponent would stand dazed for a few seconds, during which time players had to tap in the right combination with their joystick and buttons. If the code was done correctly, instead of destroying the opponent in some gory way, the victor would give him a cake, a doll, or some other gift as the word *FRIENDSHIP* appeared across the top of the screen in rainbow colors.

The "friendships" were a result of the hearings. They were put in specifically because we were getting so much publicity because of the violence in the game and stuff. We just thought we'd offset the fatalities with friendships.

—John Tobias

With the ratings in place, Howard Lincoln and Minoru Arakawa decided that Nintendo no longer needed to sanitize games the way it had in the past. The Super NES version of *Mortal Kombat 2* contained as many fatalities and friendships as Sega's. This time, it sold better than the Genesis version.



The “Next” Generation (Part 1)

Sega is sending a very confusing message to the customer, saying: “Buy Genesis,” “now it’s Game Gear,” “no, actually it’s Sega CD,” “no, it’s 32X,” “forget all of that stuff, it’s Saturn,” “maybe it’s Titan,” “how about Pico.”

—Trip Hawkins, founder, the 3DO Company

3DO a good value at \$299? I’ll sell you mine.

—Tim Stamper, cofounder, Rare, Ltd.

You Oughta Be in Pictures

Both Nintendo and Sega spun hit cartoon shows off their mascots. Nintendo went even further and worked on two movies: *The Wizard*, starring Fred Savage; and *Super Mario Bros.*, with Bob Hoskins playing the title role. Neither movie left much of a mark at the box office.

Sega's introduction into the film world is less well known and a bit more brutal. In 1994, Shenobu Toyoda, vice president of licensing at Sega of America, signed the company up as a sponsor of Robert Redford's Sundance Film Festival. Toyoda, who was said to be more interested in movies than games, saw convergence between the two media on the horizon, due largely to Sega CD. By sponsoring the film festival, he hoped to create some inroads into the industry.

We were a significant sponsor of the Sundance Film Festival. These were heady times at Sega. This was a time period in which we really could see the merging of Hollywood and the filmmaking industry with the video game industry. We had the Sega CD, and we were the leading proponent of that marriage from the video game industry side.

On top of all of that, it was really kind of a vision thing for Shenobu. A lot of people talk about his fascination or maybe his kind of . . . he was awe-struck by Hollywood.

—Richard Brudvik-Lindner, former director of public relations,
Sega of America

Before the festival began, Sega rented an enormous estate outside of Park City, the Utah ski resort where the Sundance Film Festival is held. Although CEO Tom Kalinske did not attend and Toyoda only made a brief appearance, Sega sent a top-tier team that included Richard Brudvik-Lindner, director of communications; Michaelene Cristini Risley, group director of licensing and character development; and Joe Miller, head of research and development.

As one of the sponsors of the festival, Sega was invited to make a presentation one evening. Miller was to deliver a speech and show video clips of games under development, after which there would be a reception. Knowing of the "politically correct" attitude that prevailed in Hollywood, Lindner decided to have Miller put an emphasis on *Ecco the Dolphin*, in an effort to show that there

was more to video games than simple shoot-'em-ups. After making his presentation, Miller opened the meeting for questions. He had expected a little animosity—what he got, however, verged on hostility. Members of the Screenwriters Guild and other trade organizations pounded him through the entire session with questions about how game makers would work with unions and whether game designers got adequate credit for their work.

The storm continued as the presentation ended and the reception began. Screenwriters and other movie people besieged the members of the Sega team.

The questioning just continued, so much so, that I think most of the contingent of Sega people felt under attack. I noticed the Sega people getting more and more compacted together in this little group, and it was like they were surrounded. It got so bad that they wanted to leave before the reception was done.

I remember stopping Joe Miller in the parking lot and saying, "You need to get back in there, these people don't understand the vision." I tried to get our guys to go back in there and be advocates and extol the vision. And I remember looking at Joe and Michaelene and some of the other folks who were there in the parking lot with me and seeing something that was almost like fear in their eyes. They kind of looked at me, they considered going back for a fraction of a second, then they said "no," and we all got in our Chevy Suburban and drove off.

—Richard Brudvik-Lindner

New and Old Contenders

America's 3DO already has an advanced games machine on the market, though at a whopping \$699. Atari will launch its Jaguar later this year; Sony has set up a new joint venture to market a 32-bit machine. Sega has teamed up with Hitachi to develop new machines.¹

A number of historically insignificant consoles came out during the 16-bit era: a Japanese game manufacturer named SNK released a CD version of NeoGeo, Philips released an overpriced education/entertainment deck called

CD-i, and Sega released new reiterations of its CD product. Then, in October 1993, Matsushita (a.k.a. Panasonic) released a CD-based game console called the REAL 3DO Multiplayer. The introduction of 3DO marked the birth of the next generation of video game hardware.

The 3DO Multiplayer was the result of an interesting experiment in marketing economics, a partnership in which one company provided all of the technology while another provided the manufacturing—both without paying each other. The hardware itself was the creation of RJ Mical and Dave Needle, the same team of Amiga-veterans that developed the Lynx. Disappointed with the failure of Lynx, and furious at Atari for its poor handling of the product, Mical and Needle left Epyx and began working on their next invention the very next day. Meeting in a restaurant, they discussed possibilities for future plans. When they landed upon the idea of a truly breakthrough game console, they sketched out the needed components on a napkin right at their table.

Mapping out the hardware was easy enough—building it would be a different story. To do so, they would need capital and preferably an investor who would purchase the hardware rather than just help design it. They turned to Sega.

Dave Morris, who replaced me briefly as president of Epyx, came to me with RJ and Dave Needle when I was president of Sega. They presented to me the concept of paying them \$2 million and giving them two years to develop the next "ultimate revolutionary" video game system; and I was all for it, based on their credentials, because they had developed the Amiga computer and they had developed Lynx. I had just paid \$1.7 million dollars to Joe Montana to get his picture on a game. I thought it was nothing to pay \$2 million to get the next hardware system developed.

So I recommended that they go to Japan, which they did two or three times, and present their concept to Nakayama. They were turned down.

—Michael Katz, former CEO, Sega of America

One of the next people they met with was Trip Hawkins, the founder of Electronic Arts. Intelligent and ever fascinated by technology, Hawkins made a good audience for their presentation. As the CEO of a major computer and video game company, he understood the industry and had an army of contacts throughout Silicon Valley. And he would need them. Buying into Mical

and Needle's project meant more than breaking into the console market; it meant taking on Nintendo and Sega. Anybody who signed on with Mical and Needle would need to be as much an evangelist as a venture capitalist. Trendy, witty, charismatic, and known throughout the high-tech world as the ultimate salesman, Hawkins was a perfect fit.

Taking 3DO from concept to reality was a lengthy and difficult process that required a large team. Looking back at everything that went into making the console, RJ Mical would later remark that "It took 17 people to design the Amiga. It took just Dave and me to design the Lynx, and we came in under budget. Turning the genesis of an idea into the reality of the 3DO took a small army. On the other hand . . . it was a small army."

Dave Needle, the hardware side of the Mical and Needle development team, had created a brilliant machine. Their console played games, music, and photographs on CD-ROM, hence the name "Multiplayer." It was built around a 32-bit ARM 60 RISC processing chip and featured 3 megabytes of memory. Unfortunately, time and the rapid evolution of technology had conspired against them. Shortly after Needle and Mical completed their work, a breakthrough in chip design made floating-point technology, an efficient way of making calculations for 3D graphics, more affordable for later consoles.

Floating-point capability is something that we would have had to add at extra cost and might jeopardize the size of the chip. . . . Low-cost processors typically did not have floating-point capability until very recently. Then it finally became cheap enough and common enough to become available for use in video game machines.

It would have speeded up the polygon calculations, but I don't really think that that makes a hell of a lot of difference, to be honest.

—Trip Hawkins

From the start, Hawkins wanted to do things differently from other game companies. Nintendo and Sega manufactured their own hardware, while Hawkins wanted to create a hardware standard and license it out to electronics manufacturers. Nor did he want to publish games for his new console. In Hawkins's business model, he would simply develop the finest technology on the market, and his profits would come from licensing that technology to

others. As the console went into development, Hawkins's strategy seemed to be working. Panasonic, Sanyo, AT&T, Creative Labs, and Gold Star all expressed interest in manufacturing hardware based on the new console's architecture. More than eighty companies, including Activision, LucasArts, and Microprose, signed on to make games for it. Since Hawkins was the head of Electronic Arts and some of the early development had been handled internally, there was never any question about whether Electronic Arts would support it.

The creation of 3DO was shrouded in mystery to me. It felt pretty bitter. Trip Hawkins started the 3DO stuff internally and I think there were some real issues; but I'm not sure exactly what all went down.

—Don Traeger, former employee, Electronic Arts

In the fall of 1993, Hawkins unveiled his 3DO game console to the press. Backed by Electronic Arts and headed by the electronics-entertainment world's best salesman, 3DO became the darling of Wall Street. Not everyone was impressed, however. Howard Lincoln, chairman of Nintendo, later said in an interview that he never worried about 3DO because of the way Hawkins set up the business model.

They violated, in my opinion, the cardinal rule. And that is that you cannot rely on other people to make good games for your system. It's nice to think that they can, but these hardware systems need first-class software, and you have to do it yourself. The model just didn't work.

—Howard Lincoln, former chairman, Nintendo of America

I'd like to think that we would have had the smarts at Sega to market the 3DO in the conventional, successful way and not create this, if you'll forgive the expression, ridiculous new model that Trip came up with of how to market and sell 3DO. I mean, not manufacturing the hardware himself and licensing the technology to other people—it's ridiculous. Why would more than one company want to compete against someone else with exactly the same product? Why would a retailer want to buy the same product from more than one company? Everyone in the industry thought that was ludicrous.

—Michael Katz

Behind the scenes, 3DO suffered from a bit of an identity crisis. Hawkins, whose background was in software, forgot some of the cardinal rules of video games. He decided to price the Multiplayer at \$699, more than four times the price of Super NES or Genesis. A Commodore computer inspired this steep price. Remembering that Commodore had charged \$700 for the complete Commodore 64 set up and feeling that his 3DO Multiplayer had many more capabilities than the Commodore 64, Hawkins thought consumers would pay the same price.

Sadly, the work and technology that went into 3DO technology were partially overshadowed by the console's poorly designed controllers. It came with flat, slender controllers that were reminiscent of the controllers on the Super NES. They had, however, one major flaw—the direction pad on the left side of the controller did not handle diagonal movement well. When consumers called in to complain about this problem, 3DO technicians suggested that they loosen the screws on the back of the controller. Although this fix helped diminish the problem, it did not completely solve it.

There was also some confusion about which game to pack in with the 3DO Multiplayer. Amazingly, the decision was made to bundle *Shelly Duvall's A Bird's Life* with the game player that Hawkins was trying to market as a toy for sophisticated adults. While *Shelly Duvall's A Bird's Life* was a respected piece of educational/entertainment software, it was a program meant to teach young children about birds. Fortunately, a company called Crystal Dynamics stepped in with an impressive new driving game called *Crash 'N Burn*, which was ultimately selected to be the bundled software. Even with *Crash 'N Burn* in the package, 3DO owners had little to play at launch. Few games were ready for the October launch of the 3DO Multiplayer, and only a space-flight game called *Total Eclipse* stood out as having much promise.

The public did not bite. According to one published prediction, only 125,000 units were sold in the United States in the entire first year.² Panasonic lowered the price of the 3DO REAL Multiplayer to \$399.95 in 1994, but the initial excitement was already gone and sales remained low. In foreign markets, however, 3DO fared slightly better. Despite its "made in the U.S.A." image, the 3DO Company actively pursued worldwide sales and ultimately sold more consoles in Asia than in the United States.*

* 3DO handled digitized video better than other game consoles. Some of the more popular items available in the Asian market, which were not available in the United States, were pornographic CDs.

The first 3DO titles failed to demonstrate the superiority of its 32-bit technology. Over the next two years, Electronic Arts published games that highlighted 3DO's abilities and differentiated it from the competition. First a motorcycle combat racing game called *Road Rash* was ported to 3DO from Genesis. Then Electronic Arts followed up with a solid 3DO version of its titanic *Madden NFL* series. Tapping into the CD-ROM-based console's strengths, the new version of *Madden* featured digitized footage of the former Oakland Raiders coach and larger, more detailed, players. Next, Electronic Arts published a 3DO version of *FIFA International Soccer*, with multiple camera angles, a truly 3D field, streaming play-by-play audio commentary, and a repertoire of special kicks and realistic moves. This was the game that would demonstrate just how impressive "next generation" sports simulations could be. These games came out too late to save 3DO, however. By the time Electronic Arts finally teamed up with *Car and Driver* magazine to create a realistic auto-racing game called *Need for Speed*, consumers had moved on. None of these games were available in 1993 and by the time they began appearing more regularly, 3DO had lost its momentum.

Atari's Last Cat

In November 1993, Atari released one of the most controversial and ill-fated game consoles ever made. The system, called Jaguar, was a cartridge-based console with a Motorola CPU. Although Jaguar had only 16 megabits of RAM, it had two 64-bit RISC graphics processing chips. Atari marketed it as the first 64-bit game console ever to hit the market, but competitors argued that it was really a 16-bit game console.

Their CPU is 16 bit. Ours is 32 bit, and our coprocessors are a lot more powerful doing the graphics and sound. Atari has trouble getting good sound during game play because of how they set up their bus structure. It's only because of an ambiguity in the law that they can even say 64 bit without having to explain what they mean.

—Trip Hawkins

Atari president Sam Tramiel faced a tough battle from the moment he announced his new game console. His family's hardball style of business had

alienated much of the industry. Many retailers refused to carry the new console, and while more than 200 developers signed up to make games for Jaguar, very few software publishers ever came through with any games. Only five games were available when Atari released Jaguar. Despite promises that more games would be out by Christmas, it took months before Atari released new games. Even worse, those first few games, which included *Cybermorph*, *Crescent Galaxy*, and *Evolution: Dino Dudes*, left consumers completely unimpressed.

Even taking into account the lack of games and the controversy surrounding the processing chip, Jaguar had some marketing advantages over 3DO. Retailing at \$249.95, it was far less expensive. Atari created a catchy advertising campaign in which it instructed consumers to "do the math" when comparing Jaguar's 64 bits to 3DO's 32. Then there were the unique controllers that appealed to some players, yet infuriated others. Jaguar controllers were fat and wide, with curved edges and rounded rolls along their bottom to create an ergonomic feel. The controller featured a number pad in its center, giving a "retro" nod to the days of ColecoVision and Intellivision.

Although Atari never solved the dearth of games issue, two British game designers appeared on the scene to give the system a couple of outstanding titles. The first was by Jeff Minter, a former Vic 20 designer, who was known throughout the industry as "The Yak." *Tempest 2000*, Minter's first game, was a brilliant recreation of Dave Theurer's coin-op classic, updated with shaded polygonal characters and a techno-rock soundtrack. With its great sound and fast action, *Tempest 2000* proved that Jaguar could be a great game machine, given the right software.^{2*}

Alien vs. Predator, Jaguar's second big game, came from a British developer named Andrew Whitaker. *Alien vs. Predator* was a first-person shooting game of the *Doom* variety that could be played from the perspective of the space parasites from the movie *Alien*, the intergalactic hunter from the movie *Predator*, or a space marine. Each character had its own goals, strengths, and weaknesses. It took Whitaker seventeen months to create *Alien vs. Predator*. The hardware was not completed when he began work on the project, and Atari engineers changed their design four times during the time that he worked on the game.

* Yes, for those of you who remember, I did give *Tempest 2000* a D+ score in *Electronic Games*. What can I say, I repent.

For every *Alien vs. Predator* or *Tempest 2000* that appeared on Jaguar, there were many more games such as *Kasumi Ninja*: a weak attempt at emulating *Mortal Kombat*, with characters such as a Scottish brawler who shot fireballs at opponents from beneath his kilt. Despite outselling the \$699 3DO in 1993, Jaguar fell behind 3DO in 1994. In an effort to salvage his sales, Tramiel even tried running television infomercials.

The Consumer Electronics Battleground

CHICAGO: Sega kept a low-profile at the June 23–25 Summer Consumer Electronics Show here—in the basement, to be exact—while archrival Nintendo was roaring like a 200-pound “*Donkey Kong*” gorilla in a massive exhibit-hall booth that literally could not be missed.³

The 1994 Summer Consumer Electronics Show (CES), held in Chicago, was the scene of grand battles, with Atari and 3DO claiming technical superiority while Nintendo and Sega clashed on other fronts.

Nintendo entered the show on an unusual up-note. Having spent the last few years looking helplessly beaten by Sega in image marketing, Nintendo scored a hit with a game called *Super Metroid*. Designed by Gumppei Yokoi’s Research and Development Team Number 1, it was built off an earlier game that they had created for the NES. *Super Metroid* was not enough to turn the tables on Sega, but it at least served notice that Nintendo was not to be ignored.

In 1994, Nintendo used CES to trickle out announcements about Ultra 64, the new 64-bit game console it was developing with Silicon Graphics. Company executives hired a bus and shuttled small groups of reporters to a hotel suite, where they were to be shown private screenings of Ultra 64 hardware. The groups were led into a small showroom with four televisions peering out of ceiling-high curtains. The reporters never actually saw the console, which they were told was nothing more than a prototype. Instead, they were shown a fighting game called *Killer Instinct* that they were told ran on Ultra 64 hardware. Nintendo did not announce a precise release date for Ultra 64 in those private screenings but indicated that the system would come out in the fall of 1995 for \$250. That was the most Nintendo would release.

More salient to Nintendo's plans for 1994 was a curious little game adapter called Super Game Boy, which enabled consumers to run Game Boy cartridges on Super NES with some muted colors. At the time, Super Game Boy seemed like a ridiculous idea. Game Boy sales had slowed, and the Super Game Boy sold for \$60, more than Game Boy itself.

Nintendo's other hope was a game that was designed using a new technology—*Donkey Kong Country*.

The Return of Rare

Though Rare, Ltd., had dropped out of active game development, the company did not remain silent for long. Chris Stamper began work on technology that would allow him to create games with 24-bit graphics on a Silicon Graphics workstation, then convert them into the kinds of two-dimensional images that would run smoothly on the 16-bit Super NES. Once operational, Stamper's device would give Rare an edge over every other game company. While competitors would still be creating cartoon sprites, Rare would be able to pre-render art on high-end workstations. As Chris Stamper completed the device, his brother Tim began designing a boxing game that would serve as a demonstration of the new technology. Then they invited Nintendo of Japan out to their headquarters in the tiny English town of Twycross to see what they had created.

We had a visit from Mr. Takeda [Genyo Takeda—one of Nintendo's top engineers]. We decided to show him a demonstration of a boxing game we had created, using rendered graphics on a Silicon Graphics workstation. He was very impressed and asked, "What would this look like on a Super NES?" So into the evening and the next day, we had two of our engineers work on taking the 24-bit true color imagery and converting it to Super NES.

—Chris Stamper, cofounder, Rare, Ltd.

One of the strengths of Chris Stamper's design was that it showed objects on the Silicon Graphics workstation with the same amount of detail that they would have when displayed on the Super NES. Hence, when the Stampers showed

Takeda their boxing game on a Super NES the next day, it looked almost identical to the game they had shown him on the workstation the day before.

When we took the guys from NCL [Nintendo Co., Ltd.] to the art department and showed them what we had, they kept looking under the table. I asked what they were doing. They said they were looking for the big computer because they didn't understand that everything was being done in the small box.

—Tim Stamper, cofounder, Rare, Ltd.

Impressed with what he had seen, Takeda returned to Japan and reported the invention to Nintendo chairman Hiroshi Yamauchi. When Yamauchi responded by asking the Stampers what kind of game they wanted to make, Tim said that he wanted to make a game with the character Donkey Kong. With Yamauchi's and Donkey Kong creator Shigeru Miyamoto's blessing, Stamper and his design team began work on the game.

Knowing that they were working on an all-important holiday release, the people at Rare went to great lengths to ensure the quality of their game. Their in-house musician created several themes to accompany the game. The art was inspired by concept drawings that Miyamoto sent over, but Tim Stamper's team had license to take the concepts in their own direction. Stamper mapped out the levels for the game by drawing sequences of sketches on Post-it notes, then arranging them in a straight line.

The process for creating the objects and characters in *Donkey Kong Country* involved building 3D images using flat polygons. Once the shapes were complete, the artists would assign textures and colors to various polygons to add skins for their wire-frame creations. The artists used objects from Rare's converted farmhouse-headquarters to create images. When they needed textures for trees, they plucked leaves from a tree. When they needed a texture that resembled rusted metal for a wheelbarrow, they scanned an old shovel.

The end result was a side-scrolling game with characters that moved smoothly but looked as real and three-dimensional as the dynamations in a Ray Harryhausen movie. Rare had created new characters for the game, and the storyline was filled with British puns and humor.

When editors and buyers saw their first demonstrations of *Donkey Kong Country* at CES, they immediately knew what the big game of 1994 was going to be.

The first time I saw *Donkey Kong Country*, I realized that Super NES could do everything that Nintendo said it could do.

—RJ Mical, former fellow, the 3DO Company

Sega's Showstopper

When you have an installed base as large as Sega has with the Genesis, and you come out with anything that costs less than \$200, some people are going to buy it. That makes the release of the 32X a very nice financial event for Sega as a company.

—Trip Hawkins

Sega's big CES product was 32X. Originally named "Mars," 32X was billed as the poor man's entry into "next generation" games. It was a mushroom-shaped peripheral that snapped into the cartridge slot of the Genesis console, giving it 32-bit processing power that Sega said would enable the system to work 40 times faster. In the heart of 32X sat two Hitachi 32-bit RISC chips, a 3D graphics processor capable of rendering 50,000 polygons per second, and some minor enhancements designed to work in tandem with Genesis audio and visual technology. Sega had already announced plans to release a superior 32-bit CD-based system called Saturn in Japan; but retailing at \$159, 32X was supposed to be a much less expensive alternative for people who already owned a Genesis. The one question Sega was not answering, however, was whether a Genesis with Sega CD and 32X would be able to read Saturn software. Always happy to report his competitors' flaws, 3DO-founder Trip Hawkins charged that it would not.

Everyone knows that 32X is a Band-Aid. It's not a "next generation system." It's fairly expensive. It's not particularly high-performance. It's hard to program for, and it's not compatible with the Saturn.

—Trip Hawkins

Sega executives argued with Hawkins's rhetoric, furiously telling people that he did not know what he was talking about. Even as they did this,

however, they refused to state once and for all whether the 32X and Saturn were compatible.

Both systems have the same architecture. You read between the lines.

Sega has never abandoned its customer base. When we released the Genesis, we created an adapter that allowed them to play Master System cartridges. The 32X lets you run titles from your Genesis library.

—Richard Brudvik-Lindner

Hawkins, of course, had been correct. The 32X was not powerful enough to run Saturn software. It was, however, a huge improvement over the original design that was created by Sega of Japan. The project, which eventually turned into 32X, began as an entirely new console that was developed in Japan. When the unit was demonstrated to American executives, however, the reaction was less than favorable.

We were told that there was going to be a thing called the Genesis 2. It was going to be another version of Genesis—an entire system. The only difference was that it was going to have double the colors and a lower cost.

So Joe Miller said, "Oh, that's just a horrible idea. If all you're going to do is enhance the system, you should make it an add-on." He said, "If it's a new system with legitimate new software, great. But if the only thing it does is double the colors . . ."

—Michael Latham, former executive producer, Sega of America

Joe Miller, head of Sega of America's research and development, fought against the idea of releasing an entire new game console that was little more than a Genesis with a larger color palette. At his suggestion, 32X was changed into a peripheral and made more powerful with a new set of processing chips. At Miller's suggestion, Sega of Japan made 32X a more significant product. What the company would not do is make it into a Saturn.

Joe may have been "the father of the 32X," but in his defense, he had to choose between bad choice number one and bad choice number two. I think

he picked the better choice and made a valiant effort to make the best of an impossible situation.

—Michael Latham

Once the design specifications were completed, Sega worked hard to evangelize the new platform in the third-party community, but the system was a tough sell. The top developers knew about Saturn and Ultra 64. They also knew about a new console that Sony planned to release in 1995. Anybody who had read the design specifications of any of the new consoles knew that 32X could never hope to compete, and no one felt any enthusiasm about its chances.

Sega got the same response from journalists. More seasoned journalists, such as *Electronic Games* editors Arnie Katz, Joyce Worley, and Bill Kunkle, questioned the logic of releasing inexpensive and full-priced game consoles that basically played the same games.

Sega claims it is segmenting the market like General Motors. "The Saturn [the 32-bit machine] is the Cadillac, the Neptune [a never-released Genesis-32X all-in-one console] is the Oldsmobile, and the Genesis is the Chevrolet," says Rioux. Already analysts are worrying about this wide array of products. "There are too many planets; it is a confused strategy," says Edward Brogan of Jardine Fleming.⁴

In an effort to win journalists over, Sega held a huge party at a San Francisco dance club. The event turned out to be a fiasco. Sega flew journalists in from all around the country and put them up in the Sofitel, a hotel located beside Sega's Redwood City headquarters.* That evening Sega hired buses to drive the journalists to the dance club. The party began with Tom Kalinske giving a speech, then a local rapper performed a lengthy piece about the greatness of 32X. The music was too loud and the 32X games that Sega had placed around the dance club were so unimpressive that no one wanted to play them. Most attendees crowded into the lobby of the dance club to escape the loud

* Coincidentally, Sega headquarters was located on Marine Drive, a location that had once been used for a safari park and was the exact location Nolan Bushnell used for the coming out party that he threw for Sente Games.

music. Some journalists tried to leave, only to discover that the buses had departed and would not return until the party was over.

The retail community, on the other hand, greeted the news about 32X enthusiastically. Sega could not keep up with the demand among retailers, but when the unit actually went on sale, the public did not bite. One problem was that only six games were available at launch. While two of the launch titles were strong—*Virtua Racing* and *Doom*—other 32X games were inexplicably bad. One, a fighting game called *Cosmic Carnage*, looked and played so poorly that reporters made jokes about it.

We were rushed. We had to get games out for the 32X and it was going to be such a close cycle. When *Cosmic Carnage* showed up, we didn't even want to ship it. It took a lot of convincing, you know, to ship that title.

—Michael Latham

As some members of the press predicted, 32X did not sell well. Within a few months, Sega dropped its price to \$99 and it was ultimately cleared out of stores at \$19.95. And Sega's woes were just beginning.

The Return of Kong

The video game market fell into a three-year slump in 1993. In September 1993, Nintendo Co., Ltd., reported a 24-percent drop in profits. The following September, Nintendo reported a 32-percent drop in worldwide sales.⁵

After a decade of torrid growth, the market is slumping. Sega's earnings plunged 64 percent last year. Nintendo reported a 41-percent drop; its stock has declined drastically over the last year, and no respite is in sight. Nintendo has "another bad year coming," predicts Joseph Osha of Baring Securities in Tokyo.⁶

The late November release of *Donkey Kong Country* stood in stark contrast to the gloom and doom faced by the rest of the video game industry. After three holiday seasons of coming in second to Sega, Nintendo had the biggest game

of the year. Sega still outperformed Nintendo in overall holiday sales, but the 500,000 copies of *Donkey Kong Country* that Nintendo sent out in its initial shipment were mostly sold in preorder, and the rest sold out in less than one week. Shortages were inevitable, and many retailers accused Nintendo of purposely undermanufacturing the game to drive up demand.

While analysts criticize Nintendo for trying to milk its existing technology, the 16-bit machine, even as others were leapfrogging that technology by moving to 32-bit machines with a CD-ROM drive, the bestselling item in the industry this Christmas was *Donkey Kong Country*, a game written for that supposedly outmoded 16-bit platform. In the last 45 days of 1994, Nintendo's new game sold 6.1 million units, making it the fastest-selling game in the 20-year history of the video game industry and clearly a hotter item than Sega's new *Sonic & Knuckles* title. Visually, the game is at least as impressive as those played on 32-bit machines.⁷

By the end of the 16-bit generation, Nintendo would go on to sell 9 million copies of *Donkey Kong Country*, making it the bestselling game since *Super Mario Bros.* 3. *Donkey Kong Country* made Rare, Ltd., Nintendo's most important second-party developer. It established the Super NES as the better 16-bit console and paved the way for Nintendo to win the waning years of the 16-bit generation. More important, *Donkey Kong Country* sounded the death knell for Jaguar and 3DO by convincing consumers that the first systems in the next generation of game consoles had little to offer that could not be found on Super NES. *Donkey Kong Country* may not have destroyed the competition, but it certainly cleared the way for the more impressive competitors that were about to arrive.



The “Next” Generation (Part 2)

For a company that is so new to the industry, I would have hoped that Sony would have made more mistakes by now.

—Trip Hawkins, founder, the 3DO Company

\$299.

**—The entire text of a speech at the first Electronic Entertainment Expo, Steve Race,
former CEO, Sony Computer Entertainment of America**

An Industry-Wide Low

By 1995, the video game industry appeared to be dying. According to the toy market-tracking NPD Group, the U.S. console market netted \$4.55 billion in 1993. By 1995, that number was down to \$3.07 billion. The NPD Group's TRST data showed a 17-percent drop in 1994, followed by a 19-percent drop in 1995.

In 1992, the year Sega smashed Nintendo's dominance in the U.S., Sega's U.S. video game sales rose 50 percent, but it barely made a profit on them. In 1993, Sega's earnings dropped 64 percent to \$112 million. In contrast, Nintendo profits fell 40 percent in 1993, but it still pulled in \$500 million in net profits and over \$1 billion in pretax profits. It also has no debt and \$3.3 billion in cash, and controls 70 percent of the world video game market. Sega has \$700 million in debt and about 25 percent of the world market.¹

Having lost the temporary boost it received from *Street Fighter II* and *Mortal Kombat*, the arcade business was in even worse shape. Taito, the company that ushered in the golden age of arcades with *Space Invaders*, closed its U.S. offices in 1995, and Data East sold its pinball division to Sega of America. That year's Amusement and Music Operators of America show, held in Dallas, was even smaller than in previous years, and rumors of companies closing were rampant around the floor of the show. One Data East employee was so unsure of his company's future that he applied for jobs at the show in a unique fashion. Data East was demonstrating an arcade machine that took people's photographs and printed them on sheets of half-inch stickers. The employee made stickers of himself holding a little sign that said, "HIRE ME," attached them to his business cards, and handed them out to other companies.

The two companies hit hardest by the 1994 and 1995 drops in the market would ultimately be the 3DO Company and Atari. They had failed to build sufficiently solid customer bases to withstand the storm that was about to strike in Japan.

The Tsunami Hits Japan

On November 22, 1994, Sega released a 32-bit video game console called Saturn in Japan. Breaking with tradition, the launch took place on a Tuesday, causing added annoyance for Tokyo commuters because the response to Saturn was so

phenomenal. The 200,000 consoles that Sega shipped sold for 44,800 yen, or approximately \$469. Most stores had customers pre-reserve their consoles and sold out their entire inventories more than a month in advance. Days before the launch, lines formed in front of those stores that sold their Saturn inventory on a first-come, first-served basis. Their supplies came nowhere near to meeting the demand. But the star of the day was not the Saturn console but a Saturn game—*Virtua Fighter*.

It was developed by Sega's most famous internal development team—AM2, led by Yu Suzuki. Suzuki was Sega's answer to Nintendo's Shigeru Miyamoto. Having created such arcade classics as *Space Harrier*, *Hang-On*, *Out Run*, and *Virtua Racing*, Suzuki had reached minor celebrity status. But Suzuki's biggest console hit was the Saturn version of *Virtua Fighter*, a fighting game featuring 3D polygonal combatants using a variety of authentic fighting styles, ranging from Kung Fu to professional wrestling.

Suzuki's games reflected his wide-ranging tastes. Suzuki was a man of sophisticated discernment who collected fine wines and drove a Ferrari to work. His game designs often reflected his style, offering a nearly perfect mixture of realism and fantasy, wrapped in the most technologically advanced arcade cabinets on the market. Suzuki constantly pushed his managers to allow him to add features to his designs. His games generally had force-feedback controllers that rumbled or shook in response to action in the games and the largest and highest-resolution monitors of any games on the market. When his bosses balked at the cost of building his proposed *Space Harrier* cabinets, Suzuki promised to return his salary if the game bombed. It was a major success.

In the early 1990s, Suzuki was one of the first arcade designers to experiment with 3D polygonal graphics.* His first use of this technology was a game called *Virtua Racing*, which went on to become an international arcade smash. Suzuki followed up with *Virtua Fighter*.

The brawlers in *Virtua Fighter* were not as ornate as the 2D combatants in *Mortal Kombat* or *Street Fighter II*. Because of the early technology available at the

* Dave Theurer, the Atari designer who created *Missile Command* and *Tempest*, introduced 3D polygons into arcades in his 1984 game *I*Robot*. Suzuki openly admits that he got the idea of using his technology in a driving game after seeing a 3D racing game called *Hard Drivin'*, which Atari released in 1989.

time, the artists who created the game had to create each character with less than 1,200 polygons. This resulted in fighters with square shoulders and boxy-looking arms. Although Suzuki's foray into 3D graphics did not compare well against the polished cartoon look of other fighting games, it paved the way for beautifully fluid body movements.

As an arcade game, *Virtua Fighter* was one of Sega's most successful games in Japan. The incarnation of *Virtua Fighter* that appeared on Saturn was almost indistinguishable from the arcade game. It did not come bundled with Saturn (no games were packed in with the console), but at a price of 7,800 yen (more than \$80) the *Virtua Fighter* CDs sold at nearly a one-to-one ratio with Saturn consoles.

On December 3, 1994, Sony launched a new console called PlayStation into the Japanese market. Unlike Sega, Sony was not an established game company, and only 100,000 consoles were shipped at a retail of 39,800 yen. The launch was not as highly anticipated, and many people who had not preordered consoles were able to purchase them at stores before the inventory ran out. Unlike Sega, Sony did not have famous in-house design teams. The most notable game for PlayStation was *Ridge Racer*, a solid translation of an arcade racing game. Namco published both the arcade and PlayStation versions of this game.

To show that consumers would choose Saturn over PlayStation, Sega waited until the day the Sony console launched to ship more Saturns. Once they did, and the systems were sold side-by-side, Saturn proved the more popular system.

A New Show

So, for some period of time, there was a pitched battle between E3 expo and CES for exhibitors, with CES obviously arguing that they were the show of choice because Nintendo was going to be there and E3 Expo arguing they were show of choice because they had Sony, Sega, and most of the major third parties lining up.

—Douglas Lowenstein, president, Interactive Digital Software Association

Back in the United States, Nintendo and Sega continued to wrangle for leadership of the video game industry. Sega lost the battle over the rating system, but a new struggle erupted over trade shows.

Since the early days of Atari, video game companies had unveiled their products at the Consumer Electronics Show (CES), a show run by a trade organization called the Electronic Industry Association. CES was about more than interactive games, however. It was the place where manufacturers unveiled new televisions, car sound systems, telephones, and refrigerators. Despite the bad years for video games, more and more computer software companies were publishing games, and floor space was becoming a limited commodity. In an effort to keep the game makers happy, the Electronic Industry Association proposed a show called CES-I.

With the creation of the Interactive Digital Software Association (IDSA), the video game industry had its own trade organization and was large enough and prosperous enough to run its own show. As the Electronic Industry Association made plans for CES-I, a large international publishing company called IDG Communications approached the IDSA with a proposal for an annual show called the Electronic Entertainment Expo (E3) that would supplant CES as the show for the interactive entertainment industry. Sega, Sony, Atari, and several leading software publishers immediately announced support for the show, while Nintendo and Microsoft threw their weight behind CES-I.

When we decided to create a trade show, everyone, including Nintendo, supported a dedicated trade event for the industry. Two organizations were presenting and seeking our support at the time and we had to decide which one to endorse. EIA (Electronic Industry Association) had put together a version of its CES Spring show that was very broadly defined as interactive television entertainment. At the same time, IDG had developed the concept for the Electronic Entertainment Expo. Both organizations were pitching for our support, and, ultimately, we voted to endorse E3, and Nintendo made a decision to sign up with the CES Philadelphia show.

—Douglas Lowenstein

Nintendo became isolated. As more companies queued up in support of E3, Nintendo eventually had to fall in line.

At the end of the day, after some period of time . . . Nintendo recognized that the industry had essentially voted with its feet, with an overwhelming

number of companies signing up with the E3 event. They [Nintendo] then eventually joined the rest of the industry in signing up.

—Douglas Lowenstein

The Electronic Entertainment Expo was about to become the next great battlefield.

Inside Sony

The other thing that really helped us, and this is important, is that when you put those four letters on a product, S-O-N-Y, it gives you tremendous credibility. It gives the customers great permission to buy, particularly when they've been burned by the 3DOs and the Jaguars of the world.

—Jim Whims, former executive vice president,
Sony Computer Entertainment of America

Ken Kutaragi, the engineer who created PlayStation, faced many obstacles while completing the game console that would eventually be known as the Sony PlayStation. His final unit bore almost no resemblance to the Play Station CD-ROM device that he was creating for the Super NES. He designed the final version around the 32-bit R3000A RISC chip, a processor that was supposed to be capable of rendering up to 500,000 texture-mapped polygons per second. PlayStation's performance, however, rendered approximately 350,000 polygons per second. While Saturn and PlayStation supposedly had fairly similar capabilities on the surface, there were several very important differences in both design and marketing.

PlayStation had a single processing chip with a 3D geometry engine in its CPU. This processor, along with the excellent development tools Sony made available, made PlayStation extremely easy to program. That ease of programming, along with Sony's liberal \$10 per game licensing fee and its aggressive marketing plans, made PlayStation an attractive prospect for game designers. Nearly 100 game companies had signed licensing agreements with Sony by the time PlayStation launched in the United States, and more than 300 individual game projects were planned or underway.

Before Sony could become a serious contender in the game market, it would have to overcome its past. Along with being humiliated by Nintendo over the Super NES CD-ROM drive, Sony also had a dismal history as an entertainment software publisher. Sony Interactive, a small and unsuccessful software arm of the giant electronics company, had earned critical success with a game called *Mickey Mania* for Super NES, Genesis, and Sega CD, but most of its games were panned by the press and ignored by consumers. Sony published a series of ESPN Sports simulations that were generally acknowledged to be among the worst sports games on the market.

In what seemed like a poorly aimed attempt to buy its way into respectability, Sony bought Psygnosis, a Liverpool-based software company, for \$48 million. At the time of the purchase, it seemed a strange move. Psygnosis's only hit, a game called *Lemmings*, had been created by outside developers; yet Sony paid top dollar for the company.

We got into this business for one and only one reason, and that was to become leaders in the next generation marketplace. And eight months ago we were the new kids on the block, with a lot of hopes and dreams and aspirations and an absolutely 0 percent market share.

—Jim Whims

When it came to marketing PlayStation in the United States, Sony left little to chance. Sony Computer Entertainment of America (SCEA), the American organization charged with the task, was built around a group of experienced game-industry veterans.

Steve Race, the president of SCEA, had been the vice president of Atari's European division during the heyday of the 2600. After the crash of 1982, Race and several friends founded Worlds of Wonder—the company that created Teddy Ruxpin and helped market the Nintendo Entertainment System. In 1990, as Tom Kalinske became the new CEO at Sega of America, he brought Race in as a marketing consultant.

Race's senior vice president of marketing was Jim Whims, who, like Race, was an ex-Worlds of Wonder executive who had a long history with video games that included stints with iMagic and Data East. Tall, comfortable around strangers, and athletically built, Whims had the look of a leader.

For his head of third-party relations, Race hired Bernard "Bernie" Stolar, whose roots in the industry reached all the way back to Marty Bromley and David Rosen. In earlier days, Stolar headed a small arcade company called Game Plan that made the 1981 game *Shark Attack*. Knowing that Sid Sheinberg, head of Universal Studios, might approach him about a possible infringement on the movie *Jaws*, Stolar met with and outsmarted the intimidating studio chief. Thinking he was giving Stolar a break, Sheinberg said that he would not demand a royalty on the first 1,000 machines. Stolar responded by cutting his manufacturing run after building the first 990.

As the person responsible for working with third-party companies, Stolar played a major role in luring outside developers to make games for PlayStation. Some of his decisions proved absolutely brilliant. Stolar actively courted Williams Manufacturing and arranged a six-month exclusive deal for the highly anticipated game *Mortal Kombat 3*, a move that virtually guaranteed PlayStation sales among members of the game's rather large cult following. On the negative side, Stolar felt that role-playing games, while very important in the Japanese market, were unnecessary in the United States.

Race hired an old friend named Peter Johnson away from Sega to handle marketing and communications. Though Sony was new as a company, its administrative team was composed largely of seasoned game executives.

We had a lot of people with very, very good industry experience, and qualified guys who I could trust and women who I could trust who had either been in the industry or I had worked with before in some capacity. We got enormously lucky with the talent pool that we had, and we got dealt a great product, and then the rest we just put together.

—Steve Race

In October 1994, tragedy struck Sony. Peter Johnson, the man Race had hired away from Sega to run marketing communications, was killed in a plane crash while traveling to the East Coast on business.

I was a basket case for a long time. Peter and I had worked at three different companies together and he was a close personal friend. The night before the

crash, I had gone to a Rolling Stones concert with him and his wife. I was devastated by it.

—Steve Race

There was never any question about the quality of the PlayStation hardware or the personnel Race hired, but other issues plagued SCEA. Kutaragi and other executives at Sony did not always share Race's vision for how to run the company. They fought over everything from the length of the cords connecting the PlayStation's game pads to the launch price for the console itself.

I'd been over to Japan a couple of times and we disagreed about pricing, positioning, advertising, color, and ninety-nine other things that you would do for a product to Americanize it or to make it acceptable in the United States.

It was funny. I would say, "Why are we doing this controller? It should look like this or it should be this size." Norio Ohga was the president of Sony at the time, and they'd sort of say, "Oh, no, no, no. Mr. Ohga wants it this way. Mr. Ohga designated this one."

I kept thinking to myself, what is a guy running a \$44 billion company doing going around with controllers for a game system?

—Steve Race

Race's problems with Sony Computer Entertainment in Japan were well-known throughout the industry. Rumors about Race being fired were widespread. Opinionated and outspoken, Race sometimes seemed like a strange fit for the role of an American executive working in a Japanese company. The battles continued as Sony prepared for the official American unveiling of PlayStation at E3.

Inside Sega

Clearly, Sega broke some promises about times and dates and all that. If you look at the recent legacy with Sega, between Sega CD and 32X and . . . well, I guess Nomad's still around, there were a lot of disappointing products that

[Sega said] were next-generation systems that weren't fulfilled. They certainly weren't supported by the third-party community.

—Jim Whims

As Trip Hawkins had predicted, Sega had stretched its resources by maintaining too many incompatible platforms. By the end of 1995, Sega of America found itself juggling seven separate and incompatible game platforms—Saturn, Genesis, Game Gear, Pico, Sega CD, 32X, and 32X CD. Amazingly, even Master System was rumored to still be active in some South American markets. There was no way one company could support every one of those systems. With an eye toward the future, Sega Enterprises CEO Hayao Nakayama made the logical choice to concentrate on Saturn.

From the Japanese perspective, Nakayama made the only possible decision. Mega-Drive, the Japanese name for Genesis, never caught on in Japan. Saturn, on the other hand, was outselling PlayStation and looked to be the dominant system. What made sense in Japan, however, was about to become a disastrous move in the United States.

I would absolutely defend the American management on that. Tom knew that the 16-bit business was going to be there. Paul Rioux knew it, and so did Shenobu Toyoda; but Japan refused to believe. They were convinced, and they would not listen to Tom [Kalinske]. They would not listen to Paul [Rioux]. They would listen to no one and they absolutely bullied the U.S. into launching the system. It very much compromised their ability to keep the 16-bit business.

—Michael Latham, former head of Omega Team, Sega of America

Back in the United States, the magazine *Next Generation* ran an article in which the internal components of PlayStation and Saturn were shown side by side. The editorial staff had developed a preference for PlayStation over Saturn, based on game performance, and that preference became far more pronounced as more games were published. *Next Generation's* editors described PlayStation's design as "elegant" because all of the components fit neatly on one single circuit board. The Saturn design, by comparison, seemed jumbled, with its CD-ROM controller placed on a separate daughterboard.

I think a lot of people are confused about that. I've heard a lot of people say, "Oh gee, look at all these chips they've got." Well, there's a reason for it and the reason is that our people feel that they need the multiprocessing to be able to bring to the home what we're doing next year in the arcades. That kind of power requires what we've got and we don't think the other machines can take advantage of.

—Tom Kalinske, former CEO, Sega of America

In theory, Saturn, which featured two Hitachi SH2 32-bit central processing chips, was more powerful than PlayStation. The truth was that the SH2 chips were somewhat inferior to the chip Sony had selected. There was even a rumor that Nakayama had selected the chip as a favor to a golf buddy. All rumors aside, programming Saturn was difficult, and allotting different operations to both of the processing chips proved nearly impossible. In an interview with the press, Sega star arcade-game designer Yu Suzuki openly admitted having trouble with the dual-processor design while working on the Saturn version of his hit game *Daytona*.

As E3 approached in mid-May, Sega announced that the release of Saturn would take place on September 2—Sega Saturn Saturday. Behind the scenes, however, Sega was preparing an E3 surprise.

Inside Nintendo

I realize that Nintendo keeps saying [that the Ultra 64 will be released in] 1995, but there is absolutely no evidence to support that. What they did in Chicago [at the 1994 Summer Consumer Electronics Show] was show people the coin-op hardware, which has absolutely no connection with the Ultra 64 from an internal standpoint. No way, Jose. It's a big promotional head fake.

If he [Nintendo vice-president Peter Main] told you six months, mark your calendar and call him on that date. He'll tell you, "No, six months from now," and he'll still be blowing smoke at that point.

—Trip Hawkins

On August 23, 1993, Nintendo announced plans to collaborate with Silicon Graphics on "Project Reality," a new technology that would be incorporated

into a future game console. The pairing seemed perfect. Silicon Graphics was the leading company in high-end computer graphics. Hollywood special-effects studios used their workstations to create the effects in such movies as *Terminator 2* and *Jurassic Park*. The new system, which Nintendo claimed would be released in 1995, would include a modified version of the technology used in Silicon Graphics' expensive Indigo workstations and would sell for under \$250. Nintendo would not give many specifics on what the system's architecture would look like, but it was stated that the final product would have a 64-bit processor.

He's [Howard Lincoln] convinced that the new Nintendo momentum will carry over into 1997. "One of the things I find most incredible," he says, "is how anyone could possibly conclude that Nintendo will not have a predominant share of the next-generation platform. We have the best technology—namely, Silicon Graphics' proprietary technology. Mr. Nakayama [Sega's president] wanted that technology as badly as Yamauchi [Hiroshi Yamauchi, president of Nintendo Co., Ltd.], but Yamauchi got it," he says. "Sega and Sony have world-class 32-bit systems. But unfortunately for them, we will be marketing a world-class 64-bit system at the same time."²

In 1994, Nintendo kept up a fairly regular rhythm of announcements. In March, Nintendo of America chairman Howard Lincoln announced that the British developer Rare, Ltd., would make games for Nintendo's new Project Reality console. This announcement was made two months before the unveiling of *Donkey Kong Country*, so few people knew anything about Rare. A quick scan of old Nintendo cartridges would have revealed that Rare was the company behind *Battle Toads*, but that was the only thing anyone outside of Nintendo knew.

On May 2, 1994, Nintendo announced that a Scottish firm called DMA Designs had signed up to do games for Project Reality. No better known than Rare, DMA had one significant claim to fame—it was the company that created *Lemmings*, Psygnosis's one big game. Three days later, Nintendo announced that Project Reality would use cartridge media instead of CD-ROM. This was a much more significant announcement.

At the time, Howard Lincoln claimed that the reason Nintendo decided to stick with cartridges instead of moving to CD-ROM was speed. With CD-ROMs,

game consoles access information and load it into memory. These "access times" could take a few seconds with early CD-ROM drives such as the ones used in Sega CD and 3DO. Nintendo said that waiting for the games to load up diminished the experience. Because cartridges have ROM chips built into their circuits, access time is not a problem.

What makes Nintendo's platform so much cheaper than competing machines is the lack of a CD-ROM drive. Critics claim this is a great weakness. Everyone thinks the transition to CD-ROMs is inevitable because they can be manufactured much more quickly and inexpensively than cartridges. They also have much more memory, which allows developers to throw in movie and music clips. There is a problem, however. There is a difference in data-access speed of 1,000 times. To get around this, companies have had to build in lots of internal memory in the machines. But that is expensive. For software houses, it is cheaper to make CD games, but Nintendo says its cartridges will be priced the same as CDs and that for hot titles there will be plenty of margin for profit.³

Cartridges are a very expensive medium, however, and many game developers resented Nintendo's decision to continue using them. Sony's licensing structure was built around a \$10-per-game arrangement that included manufacturing disks, manuals, and packaging. Compared to the cost of pressing CDs, manufacturing cartridges for Project Reality would be prohibitively expensive. At the time, it cost more than \$20 to manufacture an 8-megabyte cartridge, compared to less than \$2 to press a 640-megabyte CD. And the additional storage space on CDs could be used for video clips, animations, audio files, music, and larger games. Even as Lincoln told the media that Nintendo had forms of compression that would vastly increase the amount of information that could be crammed into an 8-megabyte cartridge, it was widely accepted that Project Reality games would simply be smaller than those on Saturn and PlayStation.

Speculation about why Yamauchi had chosen cartridges ranged from curiosity to antagonism. Tom Zito, founder of Digital Pictures, said that Nintendo went with the cartridge format because cartridges are harder and more expensive to copy—making it easier for Nintendo to avoid piracy. Other game

company executives claimed Nintendo went with cartridges so that it would have complete control over the manufacturing of games for the console and maximize its profits.

It was a combination of things. There was a technology element to it and there was that counterfeiting element to it, big time.

The technology argument, I think, at the time was legitimate. . . . At the time, Takeda [Genyo Takeda, the Nintendo engineer working with Silicon Graphics to design Project Reality] and those guys felt very strongly that it was absolutely essential to have it on a cartridge in order to do the kind of things that we wanted to do with *Super Mario*.

The counterfeiting thing, I think, turned out to be correct, with the huge counterfeiting problem that Sony has.

I've seen speculation about how this was some plot to control third-party publishers. That's completely nonsense. There is just not a grain of truth in that thing. No discussion like that ever occurred; that was never an issue. It was strictly technology and counterfeiting.

—Howard Lincoln

In the days leading up to the 1994 Summer Consumer Electronics Show, Nintendo made two more announcements. On June 5, Lincoln announced that Alias Research, one of the leading computer-graphics companies, would create custom software tools for Project Reality. On June 23, Lincoln announced that the final name of Nintendo's new console would be "Ultra 64" and that Acclaim Entertainment would create a game called *Turok: The Dinosaur Hunter* for it. Then came the closed-door meetings at CES, in which reporters and analysts were shown glimpses of *Killer Instinct* and told they were running on prototype Ultra 64 hardware.

On January 5, 1995, Nintendo announced that Silicon Graphics had completed the final chip set for Ultra 64 and gave the console's final specifications. Critics, such as Trip Hawkins, openly challenged Nintendo's assertion that Ultra 64 would be ready in 1995. But with the announcement that the chip set was complete, Nintendo's claim that a powerful system would be ready later that year seemed more believable.

According to the announcement, Ultra 64 would indeed have a 64-bit processor—easily the fastest processor in any of the next-generation consoles. Ultra 64 would also have a separate graphics processor that could generate 100,000 texture-mapped polygons per second, while handling several graphics-enhancing processes such as ray-tracing, anti-aliasing, and tri-linear mip-mapping interpolation—processes that were not available on PlayStation or Saturn.

After announcing that the chip set was complete, Nintendo began disclosing new partnerships with more “dream team” developers. Williams Manufacturing, the arcade company behind such Acclaim cartridge hits as *NBA Jam* and *Mortal Kombat*, joined on, as did noted PC flight simulation publishers Sierra and Spectrum HoloByte. Angel Studios, a computer-graphics company best known for making special effects for movies, and Paradigm Simulation, a company that designed high-end virtual reality software, joined the team. Then Ocean of America and GameTek—and the team started looking haphazard. Once, when asked why he selected Ocean as part of his “dream team,” Lincoln was unable to stop himself from laughing. When he was able to respond, he smiled and said, “I’m surprised you did not ask, ‘Why GameTek?’”

But Ultra 64 was not the only “next-generation” system Nintendo planned to release in 1995. Nintendo’s research and development Team 1, led by Gunpei Yokoi, had created a portable game system called Virtual Boy.

Compared to the multimillion color-producing consoles being created by Sega, Sony, and Nintendo, Virtual Boy was an anomaly. Supposedly the heir to Game Boy, it had single-color graphics. The system was built around red LED arrays, so it only showed red objects against a black background. The catch, however, was that it had two mirror-scanning stereoscopic displays that enabled it to create the illusion of three-dimensional objects. Reflections Technology, a Massachusetts-based company that was not normally associated with games, had created Virtual Boy’s stereoscopic LED technology years earlier. But marketing the idea to game companies had proved difficult.

I turned down Reflections Technology twice. They came to me when I was with Mattel and showed me this thing called “Red World.” Then they came to us before going to Nintendo and I looked at it and thought, “This looks very familiar.”

—Tom Kalinske

When Reflections Technology executives took their idea to Nintendo, they found a willing advocate in Gunpei Yokoi. Yokoi, who designed Game Boy, was looking for a new technology that might "encourage more creativity" in games.

I saw that the market was so saturated with video games that it became nearly impossible to create anything new. There were a lot of creative ideas for games for the NES and for Game Boy. But there were not so many new ideas for games for the Super Nintendo. I think game companies ran out of new ideas. I wanted to create a new kind of game that was not a video game, so that designers could come up with new ideas.

**—Gunpei Yokoi, former head of Research and Development Team 1,
Nintendo Co., Ltd.**

Yokoi appears to have been less than excited about creating a system with a single-color display. He looked into making a color version of the technology but found that it would have to retail for over \$500, far too expensive.

In the beginning of the development, we experimented with a color LCD screen, but the users did not see depth, they just saw double. Color graphics give people the impression that a game is high tech. But just because a game has a beautiful display does not mean that the game is fun to play.

I also wish to explain that LEDs come in red, yellow, blue, and green. Red uses less battery and red is easier to recognize. That is why red is used for traffic lights.

—Gunpei Yokoi

As the project progressed, Yokoi made his new game console less like a virtual reality head-mounted display and more like a Viewmaster. Deciding that head-tracking caused motion sickness, he created his system without tracking technology. Then he decided that wearing a heavy helmet was uncomfortable, so he mounted the unit on a stand. Instead of a visor, he ended up with a console shaped like a diver's facemask with a rubberized seal for blocking outside light.

Nintendo first announced work on a virtual reality project in the summer of 1994. In November, the console was unveiled at Shoshinkai, a proprietary trade show Nintendo held in Tokyo every winter. The general reaction was less than favorable. One reporter dubbed the system "Virtual Dog."

The November unveiling of Virtual Boy in Japan signifies an important change in direction for Nintendo. Either it has gone completely mad or it deems the future of videogaming to be crude, red, and likely to induce headaches.⁴

At the show, Nintendo announced that Virtual Boy would retail in Japan for 19,800 yen (approximately \$207). Show attendees seemed unimpressed by the hardware and equally unimpressed by the games, which included a remake of the 1981 arcade classic *Mario Bros.*, a pinball simulation, and a boxing game called *Telero Boxer*. Of the three, only *Telero Boxer* tried to take advantage of Virtual Boy's 3D capabilities.

Even worse, several people who tried the system complained about having headaches after using it. Players needed to focus the mirrors inside Virtual Boy before every use to avoid getting headaches. And even if they did, staring at the red and black screen for prolonged periods of time could still produce headaches or dizziness. By the time Virtual Boy came to the United States, it bore a statement warning that extended use could cause headaches.

In January 1995, Nintendo of America unveiled Virtual Boy at Winter CES in Las Vegas but did not give specific launch information and only showed the partial games that were shown at Shoshinkai. For final launch information, reporters would have to wait for E3.

Nintendo Comes Clean

On May 4, 1995, a *Wall Street Journal* reporter named Jim Carlton interviewed Greg Fischbach about Acclaim's annual report. As he reviewed the report, he noted that while Acclaim had earnings projections for Saturn and PlayStation sales, there were no projections for Ultra 64 sales. When he asked Fischbach about this, Fischbach quickly said, "No comment."

Armed with this information, Carlton called Nintendo marketing and communications manager Perrin Kaplan and told her what he had found. She said she understood and asked for one hour to prepare a response. Kaplan

went directly to Howard Lincoln, chairman of Nintendo of America, and Minoru Arakawa, president of Nintendo of America, and told them what had happened. With no other option, they admitted that Ultra 64 would not be released in 1995, and Carlton had a scoop for the next day's paper.

The next morning, Howard Lincoln came in early and called reporters around the country to warn them about the *Wall Street Journal* article and to let them know that Ultra 64 would not be out for another year.

The Really Big Show

The first Electronic Entertainment Expo took place in the Los Angeles Convention Center on May 11–13, 1995, and all the major players were ready to put on a show. On the first day, Tom Kalinske, president of Sega, and Olaf Olafsson, president of Sony Electronic Publishing, were scheduled to give keynote presentations from 8:30 A.M. to 9:45 A.M. Kalinske discussed Sega's heritage in arcades and as a game company. He announced that the retail price of the Saturn would be \$399 and began describing what a powerful system it was. Then he gave the punchline—the console had already shipped. September 2, Sega Saturn Saturday, was still going to be the official launch date for Saturn, but 30,000 systems had already been shipped to four key retailers: Toys "R" Us, Babbages, Software Etc., and Electronics Boutique.

Next came Sony's turn to drop a bomb. Olafsson was supposed to discuss "what it's going to take to be successful storytellers in coming years." The topic obviously gave him room to discuss the technological strengths of PlayStation, and he was expected to announce the system's price and launch date. At the time, it was generally assumed that PlayStation would likely be as expensive, or possibly more expensive, than Saturn. Olafsson started his speech as expected, then interrupted himself.

Olaf [Olafsson] was about two-thirds of the way through his speech when he said, "I'd like to call up Steve Race to tell you a little bit more about the Sony PlayStation." So I walked up. I had a whole bunch of sheets of paper in my hands, and I walked up, put them down on the podium, and I just said, "\$299," and walked off stage to this thunderous applause.

—Steve Race

Sony clearly won the first battle of E3. By sending Saturns to four retailers only, Sega offended several of its best outlets. Kay*bee Toys responded by dropping Sega from its lineup. More important, releasing in spring or summer, typically slow seasons for video game hardware sales, did not give Sega any advantage. Having a surprise launch meant that Sega had forfeited any chance of having a big send-off for Saturn and gave the appearance of being afraid of head-to-head competition with PlayStation.

I think Japan was scared of PlayStation; at least more than we were in the U.S. Tom was not afraid. Tom was ready to go to battle because Tom was used to hardware that wasn't necessarily the best in the market anyway.

—Michael Latham

Sony's surprise was more effective. Even though Saturn came bundled with a highly desirable game, *Virtua Fighter*, it was too expensive for the consumer electronics category. The \$399 price point was known to be more of a high-end electronics ticket, something that people might pay for a stereo component but not for a video game console. Sega was making the same mistake Trip Hawkins had made with 3DO.

I'm sure that price came from Japan. Tom was frequently dealt some very difficult cards to have to play, and he did a very good job of melding his deck and doing as much as he could with the cards that he was dealt. My hat is off to the guy.

—Steve Race

While Nintendo, Sega, and Sony threw million-dollar parties at E3, Trip Hawkins held a quiet and elegant dinner at a fine restaurant. In his typical socially graceful fashion, he left one seat open at every table and shuttled from one table to the next through the meal so that he could speak with all of his guests. During the meal, a reporter asked him what he thought of Sony. Sighing and looking a bit tired, Hawkins replied, "For a company that is so new to the industry, I would have hoped that Sony would have made more mistakes by now."

Nintendo executives focused on Super NES, Game Boy, and Virtual Boy rather than Ultra 64. There were no Ultra 64 prototypes for guests at the Nintendo booth, and by this time everybody knew that Nintendo had no plan to release the console in 1995. Lincoln did announce, however, that Virtual Boy would come out in August for a suggested retail price of \$179. Nintendo's other big announcements were three Super NES game—*Donkey Kong Country* 2, *Killer Instinct*, and *Yoshi's Island*.*

The Launch Season Begins

One problem with launching Virtual Boy, along with the general lack of interest most consumers had in the product, was that the only way to see its 3D images was to place your face against it. This meant that shoppers would not see the 3D images as they walked past them in stores. Also, the system could not be effectively demonstrated on television.

Virtual Boy was released on August 14 to generally lackluster reviews. Although reviewers at *Entertainment Weekly* and *Popular Science* gave it glowing reviews,

* An interesting story lies behind *Yoshi's Island*. When Shigeru Miyamoto first demonstrated the game to Nintendo's marketing department, it was rejected because it had Mario-related graphics rather than the waxy, prerendered graphics of *Donkey Kong Country*. Rather than change to an artistic look he did not like, Miyamoto made the game even more cartoon-like, giving it a hand-drawn look. The second version was accepted.

Miyamoto, who is rightfully proud of his work, was offended that the first version was rejected. That same month, I interviewed Miyamoto and Tim Stamper, creator of *Donkey Kong Country*, together and noticed that Miyamoto was a bit hard on Stamper, making such statements as "*Donkey Kong Country* proves that players will put up with mediocre gameplay as long as the art is good."

In a later interview, Miyamoto admitted that *Yoshi's Island* had been a touchy subject at the time:

I think that it happened after *Donkey Kong Country* was introduced. In comparison with the graphics of the *Super Donkey Kong*, there was not enough punch to *Yoshi's Island*. That was what I was told by the marketing people.

I intensified my hand-drawn touch on *Yoshi's Island* from the initial part of the program. Everybody else was saying that they wanted better hardware and more beautiful graphics instead of this art.

Even while I was working on the *Super Mario World*, I was thinking that the next hero should be Yoshi. Other people have created games based upon Yoshi. . . . *Yoshi's World Hunters*, *Yoshi's Egg*, *Yoshi's Cookie*, and so forth—games that I don't really like. So I decided that I should make an authentic Yoshi game.

game magazines panned it. When the editors at *Next Generation* opened the box in which their Virtual Boy was packed, they began playing volleyball with the inflated bags Nintendo had used as packing material. "It was the most fun we were ever going to have with anything in that box," editor in chief Neil West explained when asked about it.

By mid-August, the industry had already lost interest in Virtual Boy, as Microsoft became the focus of worldwide attention. On August 24, 1995, Microsoft launched *Windows 95* (*Win95*), a major upgrade from previous *Windows* operating systems that included technology for running games smoothly. Though Microsoft published a few games to accompany the launch of *Win 95*, it would take months before people realized the deep impact the new operating system would eventually have on gaming. By the end of the year, people would even be able to play first-person shooters without leaving the *Windows* environment, making computer game installation suddenly easier.

Though it did not make computers as simple to use as consoles, *Win 95* went a long way toward closing the gap. Computer games did not catch up to console games in overall sales, and the top console games still sold at two to three times the rate of the top PC titles, but video game publishers began eyeing PCs as a viable new platform.

The next big event was the September release of PlayStation. One person who was not going to see this release, however, was Steve Race. On August 7, Race resigned as president of Sony Computer Entertainment of America and resurfaced quickly at Spectrum HoloByte. Few people were surprised by Race's departure; his ongoing battles with his employers in Japan were well-known.

We had celebrated differences of opinion as to where the product should be and how it should be priced and positioned. I wouldn't say we had screaming matches, but we just had long pregnant pauses, and I questioned their heritage, from whence they came. . . . something about female dogs.

—Steve Race

Sony shipped 100,000 PlayStation consoles for release on September 9, almost all of which had been prereserved. The entire shipment sold out. Two days after the release, Sony had already sold more PlayStations than Sega had

sold Saturns in the five months since the surprise announcement at E3. By the end of the year, Sony boasted of having shipped 800,000 PlayStations into North America while Sega claimed to have sold 400,000 Saturns.

We told people we would ship on September 9th. We shipped on September 9th. We told them we'd have 10 to 15 titles in the first 30 days, and we had 15 titles in the first 30 days. We said we'd have 50 new titles out by the end of the calendar year. We had 55 out by the end of the calendar year. We built credibility not only with the consumer, but with the trade.

When you have two competitors as firmly entrenched as Sega and Nintendo, which are both great companies, make no mistake about it, you have to differentiate yourself. I think we did that.

—Jim Whims

In the meantime, things unraveled for 3DO and Atari. As far as the public was concerned, Nintendo had blown a hole in 3DO's claims of technological superiority with *Donkey Kong Country*. In 1995, Crystal Dynamics released a game about a wise-cracking Hawaiian lizard called *Gex* that brought the same highly polished graphical look to 3DO and supplemented it with the voice files that would never have fit in a Super NES cartridge. Standup comedian Dana Gould performed the voice-over for *Gex*, the main character, giving the game a certain charismatic wit. Realizing that *Gex* was the most surefire game in the 3DO lineup, Panasonic bundled it with their company's version of the console.*

Gex and other highly improved games were not enough; 3DO had lost its position as the most desirable game console the moment Tom Kalinske announced that Saturn had already shipped. By the time Sony launched in September, the only tricks 3DO manufacturers Panasonic and GoldStar had left were to offer rebates and to bundle more software. As one GoldStar print ad stated, "The GoldStar 3DO system is jammed full of space-age technology and comes with lots of FREE stuff."

3DO's window of dominance had been shut, and, in his own evangelical way, Hawkins helped close it. Seeing that there was no way to compete with

* Once, while visiting a game store, Gould asked if a clerk had *Gex*. "It's pronounced Jex," the clerk replied. "it's about a dinosaur."

Sega and Sony, he began talking about the disappointment of the 32-bit generation and the real strengths that 64-bit processing had to offer. Hawkins changed his focus to M2, a 64-bit console that he promised would shame PlayStation and Saturn. M2 never materialized. 3DO sold the technology to Matsushita for \$100 million, and though many game companies did receive M2 development kits, no M2 systems were ever released.

Things were even worse at Atari. Atari president Sam Tramiel struggled to find ways to bolster sales and cut costs. In 1995, he stopped manufacturing Jaguars and concentrated entirely on selling off the existing inventory. He slashed the price of the console to \$149, released an attachable CD-ROM peripheral, and openly courted new game developers. He ran infomercials to try and sell additional consoles, but the infomercials did not reach the right audience. Toward the end of 1995, Atari finally convinced Wal-Mart to carry Jaguar in its superstores, but by that time people knew about Saturn and PlayStation and weren't interested. Nothing seemed to work. The company was hemorrhaging money. The end came when Sam Tramiel suffered a mild heart attack and his father, Jack, came in to run the show in his absence.

Sam had just finished riding a bicycle. He got off the bike, felt somewhat faint, felt a pain in his chest, drove himself to the Stanford Medical Center, and there was informed that he had had a mild heart attack.

Jack came back in [to Atari while Sam was recovering]. Jack knew how bad it was. It wasn't that Jack didn't know, Jack knew. Jack knew all the numbers, all the time.

—Bernie Stolar, president and COO, Sega of America

Many theories arose about why Jack Tramiel purchased Atari. Some people said that he bought the company as a means for exacting revenge on Commodore, the company that he founded, then left under unpleasant circumstances. Another theory was that he purchased Atari to make one last fortune, enough money to ensure the future of his three sons, Sam, Leonard, and Gary. A third theory suggested that he bought Atari as a way of bringing his sons together. If any of these were his reasons, he succeeded. Atari outlasted Commodore, had a few enormously profitable years, and united his sons in a common goal.

On July 30, 1996, Atari Corp. merged with JTS Corporation, a company that manufactured 3.5-inch disk drives, in an \$80 million stock swap. Jack Tramiel was active on the JTS board after the merger. Two years later, Hasbro Interactive purchased the Atari library from JTS.

We were trying to license four products, including *Centipede*, *Missile Command*, *Tempest*, and *Pong*. During the licensing arrangement, we realized that JTS was in financial dire straits, so we decided to take it to a higher level. . . . we moved very quickly and very aggressively and turned this into an acquisition opportunity. We acquired all of the trademarks, patents, copyrights, and intellectual property for all of Atari. Jack Tramiel was involved in the discussions. He was a tough negotiator, as always, but they needed money. The acquisition cost us \$5 million.

—Tom Dusenberry, president, Hasbro Interactive

Time Warner put Atari Coin-Op on the sales block in 1996 as well. In an interesting twist, one of the first people to bid on it was Nolan Bushnell, the man who originally had founded the company. Time Warner turned down his offer, however, and sold Atari to a familiar competitor—Williams Manufacturing.

Nintendo Unveiled

In late November 1995, Nintendo finally unveiled its 64-bit, cartridge-based game console at its Shoshinkai trade show, held that year in a cavernous, warehouse-like convention center called the Makuhari Messe. As a proprietary show featuring only games for Nintendo systems, Shoshinkai was considerably smaller than E3 or the Tokyo Game Show. The entire show fit into one section of the Makuhari Messe and filled less than two-thirds of the floor.

Nintendo's next-generation console underwent three name changes by the time it was unveiled. First known as Project Reality, then Ultra 64, the final name of the console was "Nintendo 64 (N64)." Although Nintendo had released many details about the new console during the months leading up to the unveiling, no information was ever leaked about the system's controller. Created by Genyo Takeda and Nintendo Research and Development Team 3, N64 had a new and revolutionary three-handled controller that featured both

a traditional digital directional pad and a new analog directional lever. The T-pad, which was especially good for fighting games, worked a lot like a light switch. It did not read how hard you pushed, it simply noted when you pushed down on it and from what direction you pushed, then moved you in that direction at a constant speed. The analog lever, on the other hand, responded to pressure. Push slightly to the right, and the character you were controlling would inch in that direction. Push the lever all the way over, and your character would run at full tilt.

We tried a motion sensor wristwatch-style controller. We made a prototype and applied for a patent. Everything was good, but players didn't understand the internal mechanism and had trouble controlling it, so we abandoned it.

—Genyo Takeda, manager R&D Team 3, Nintendo Co., Ltd.

Hiroshi Yamauchi was clearly proud of the new controller. In a lengthy speech given the first day of the show, he said, "If you think this is just another game pad, then you know nothing about video games."

Most of the floor space was dedicated to Super Famicom (the Japanese name for Super NES), with a fairly large section for Game Boy and a much smaller corner of the floor for N64. Obviously, most people at the show crammed in around the N64 area, taking turns playing the only two games on display—*Super Mario 64* and *Kirby's Air Ride*. Although the show ran smoothly, it was obvious that some decisions had not been made until the morning of the show. When an American reporter emerged from the N64 area, Howard Lincoln approached him and asked what he thought of the game. "The Mario game was great, but that other game wasn't amazing."

"We're only showing one game," replied Lincoln, who had not been told about a last-minute decision to show *Kirby's Air Ride*.

The Last Days of Yokoi

Across the floor of Makuhari Messe, in the corner farthest away from N64, Gumpei Yokoi manned the little booth where Virtual Boy was being displayed. As he always appeared when in public, Yokoi was impeccably dressed in a dark suit, crisp white shirt, and modest red tie. He was a thin man with narrow

shoulders whose head always appeared slightly large for the tiny frame of his body. The touches of white along his temples added to his dignified air. Few people stopped by his booth, so Yokoi was able to personally demonstrate games to those who did.

This was his punishment, the Japanese corporate version of Dante's *Inferno*. Gumpei Yokoi, the engineer who had created Nintendo's first toys in his spare time, had been placed in the proverbial doghouse for creating the debacle that was Virtual Boy. Having received shipments of Virtual Boy less than one year earlier, Tokyo stores were now discounting it so heavily that customers could buy it for less than \$100—under half the original cost.

When employees make high-profile mistakes in Japan, it is not unusual for their superiors to make an example out of them for a period of time, then return them to their former stature. Such seemed to be the case with Yokoi. Yamauchi would pretend to have forgotten that Game Boy, *Metroid*, and *Dr. Mario* had all come from Yokoi's team; would leave him to man a booth with a dying product; then eventually would bring him back into grace. So, armed with *Bound High*, a first-person perspective game in which players sat inside a bouncing ball and tried to steer it, and an adventure game called *Dragon Hopper*, Yokoi greeted buyers and the media and cheerfully tried to explain that there was still life in Virtual Boy. Not many people came by, but he seemed happy to have an audience when they did.

Yokoi left Nintendo the following August, after spending nearly thirty years with the company. He started his own handheld game company and named it *Koto*, a word meaning "small town." (It is also the name of a classical Japanese string instrument.) His company's first project was a monochrome handheld game system that was similar to Game Boy but slimmer and with a better speaker and a larger screen. Eventually named Wonder Swan, Yokoi's new game system had other nice touches, too. It had directional pads in two different corners so that it could be used to play games with either vertical or horizontal orientation. It also operated on a single AA battery. Yokoi licensed the new handheld to Bandai, Japan's largest toy manufacturer.

On October 4, 1997, Yokoi and a friend were involved in a small accident on the Horukiko Expressway in Kyoto when they rear-ended another car. Both men climbed out to inspect the damage and were struck by a passing car. While his friend suffered fractured ribs, Yokoi sustained much more serious injuries

and died two hours later. As the father of Game Boy, his death attracted a lot of media attention. In the United States, Yokoi's obituary was read on National Public Radio and appeared in the *New York Times* and *People* magazine.

In 1999, Bandai released a new handheld video game system called "Wonder Swan." Though obsolete compared to Game Boy Color, Wonder Swan was launched with some fanfare. One of the first games for the new handheld was a curious strategy game in which players tried to complete circuits of lines by adding tiles with junctions. The game was called *Gunpei*.*

* Several people who have written about Yokoi have used an "n" instead of an "m" when spelling his first name. Although his name appeared with an "m" on his business card, David Sheff chose to use the "n" in *Game Over*, which may be a more appropriate representation of his name.

The Mainstream and All Its Perils

Things are the same as usual here. Dudley's diet isn't going too well. My aunt found him smuggling doughnuts into his room yesterday. They told him they'd have to cut his pocket money if he keeps doing it, so he got really angry and chucked his PlayStation out of the window. That's a sort of computer thing you can play games on.¹

—Harry Potter, *Fledgling Wizard*

Since 1957, in America, the per capita assault rate has gone up seven-fold. In Canada, since 1964, the per capita assault rate has gone up between four- and fivefold. In the last 15 years, in European nations, the per capita assault rate has gone up approximately fivefold, in Norway and Greece, fourfold in Australia and New Zealand. It has tripled in Sweden, and doubled in seven other European nations.

Now, the only common denominator in all of those nations is that we are feeding our children death and horror and destruction as entertainment. And the worst of these is the violent video games, the simulated training devices.²

—Congressional testimony, Lieutenant Colonel (retired) Dave Grossman,
professor, Arkansas State University, 1999 Senate Hearings

The Last Great Hope for Arcades

Steven Spielberg, a longtime fan of video games, made an annual pilgrimage to the Electronic Entertainment Expo (E3), often bringing his children with him. He was said to have several arcade machines in his home and was known to have visited Sega Enterprises in Japan on several occasions. In 1996, three elements came together at one time, creating the opportunity for Spielberg to enter the arcade business in a big way.

I had been talking to Steven [Spielberg] about doing something in the arcade business for years. Then Steven formed DreamWorks, and Sega's home game business started getting into trouble, and Nakayama (Hayao Nakayama, CEO of Sega Enterprises) wanted to get more active in coin-op. I had introduced Steven to Nakayama the preceding year, and we were going to do this project, frankly, just with Sega and DreamWorks. Then Universal was sold and they had a friendly owner and joined us.

But the core idea . . . a place where an adult wanted to go and could get good food, get Starbucks coffee, a good beer, have good music playing and meet other adults in a place that was attractive and appealing, that idea really had its core in Steven.

—Skip Paul, cofounder and CEO, Sega GameWorks

Spielberg found the perfect partner for his arcade ambitions in Skip Paul, a man who had started with Atari as legal counsel and risen to president of the coin-op division. Like Spielberg, Paul was an avid fan of the arcade experience. He also had a great understanding of the video game business. Together, they formed an alliance between Spielberg's DreamWorks, Sega Enterprises, and Universal Studios, having all three companies throw their weight behind a chain of enormous and trendy entertainment complexes that would feature high-quality restaurants, bars, and enormous arcades. They called the venture "GameWorks."

The first GameWorks location, which had more than 35,000 square feet of floor space, opened in downtown Seattle in March of 1997. The opening was treated like a movie premier, with such stars as Will Smith, Gillian Anderson,

and Weird Al Yankovic in attendance. MTV broadcast the event live, and Microsoft chairman Bill Gates walked the floor. The opening of GameWorks was a major press event as well. *USA Today*, *Time*, and many other national publications covered it.

The original GameWorks formula paid homage to the days of classic arcade games by featuring an alcove with two rows of 1980s coin-op machines.* As executives tweaked the GameWorks formula to find the best mix for the public, the classics corner was one of the first casualties.

After the Seattle debut, GameWorks opened several more locations in such cities as Columbus and Chicago. Although GameWorks was the most high-profile entry into the arcade business, other companies also experimented with location-based entertainment. There were still several Chuck E. Cheese franchises, the pizza parlor-arcades originally created by Nolan Bushnell around the United States. On a more upscale note, Disney opened virtual theme parks called DisneyQuests in Chicago and Orlando. More family-oriented than GameWorks, these high-tech wonderlands featured virtual rides and games with distinctly Disney themes. The most established arcade/eatery company, however, was Dave and Busters, a well-managed chain quietly spreading nationwide.

The Making of Mario

Shigeru Miyamoto, creator of *Donkey Kong*, *Mario*, *Zelda*, *Yoshi*, and *Star Fox*, entered the video game industry with a unique philosophy that was always reflected in his games. “When you draw a laughing face, your face should laugh,” he once explained in an interview. “When you draw an angry face, your face should be angry. The character will capture your emotion. The emotions and fun in a game are not made while thinking about business.”

By the time Nintendo launched Nintendo 64 (N64), Miyamoto had been creating games for nearly twenty years. He had witnessed and aided the evolution of the business, software, and technology of video gaming. His first

* Purists complained that the classic machines, which included *Donkey Kong*, *Moon Patrol*, *Gorf*, *Popeye*, and *Robotron 2084*, had been stripped out of their original cabinets and placed in matching oak cabinets.

game, *Donkey Kong*, was created by a five-man team and contained approximately 20K of code. Now, as he made the flagship game for N64, his team had swollen to more than fifty members. Instead of 20K, he and his team would write 8 megabytes of code—more than 400 times more code than in *Donkey Kong*. Instead of designing game levels that fit on a single screen, they created enormous 3D landscapes complete with trees, castles, and dinosaurs. Adapting to this new challenge, Miyamoto created a new philosophy. While most game designers were coming up with features, then building their games around them, Miyamoto worked on creating expressive landscapes, then created ways to use them.

One thing that was different with *Super Mario 64* was [that] we wanted to make some snow mountain, a really big one. That came first, and afterward we asked [each other] for the ideas about how to make use of this mountain.

It was as if we were building up an amusement park. We first found our location. We purchased the mountain, and afterward, we thought of some interesting things we wanted to implement on the mountain.

—Shigeru Miyamoto, game designer, Nintendo Co., Ltd.

Super Mario 64, Miyamoto's lead game for N64, did a better job of bringing a two-dimensional side-scrolling game into the world of 3D than any game before it. To accomplish this, Miyamoto's team used all of the old characters and objects made popular in earlier Mario games, then incorporated new devices that could only occur in the 3D environment. The big end battles, for instance, pitted Mario against a much larger foe on a huge 3D platform. The only way for Mario to win was to circle around the enemy.

Building from Miyamoto's amusement park analogy, *Super Mario 64* included huge slides and other kinds of activities that brought true variety to the game. Everybody at Nintendo recognized the game as a masterpiece; the only problem was that Miyamoto was taking too long to build it. According to Hiroshi Imanishi, Nintendo president Hiroshi Yamauchi's right-hand man, the release of N64 was delayed until Miyamoto was satisfied with *Super Mario 64*. The delay would have been even longer, but Yamauchi finally told Miyamoto that the game was good enough.

Another Battle at E3

There may have been an agreement. I certainly wasn't a part of these conference calls that they had. Quite frankly, they have a CEO roundtable, and they weren't going to let lowly executive vice presidents on these panels.

—Jim Whims, former executive vice president,
Sony Computer Entertainment America

Concentrating on Saturn proved to be a tactical mistake that cost Sega millions, if not billions, of dollars at the end of 1995. According to TRST data released in 1997, 32-bit products made up less than 20 percent of 1995 video game sales, while 16-bit sales accounted for approximately 64 percent of the market. With only a few hundred thousand people owning Saturn, the market for Saturn software was tiny compared to the Super NES and Genesis markets. Nintendo concentrated on its 16-bit sales that Christmas and had the most lucrative holiday season of any game manufacturer. Cash-starved Sega did not have the inventory or new games to capitalize on Genesis.

Sega was also lagging in the 32-bit arena. In March, Sony sent out a press release announcing that it had shipped more than 1 million PlayStations into North America. By September, that figure would grow to 2.3 million units in North America and more than 8 million units worldwide.

Going into the 1996 Electronic Entertainment Expo, Nintendo looked strong, based on the glowing reviews N64 had received at Shoshinkai, an annual trade show Nintendo held in Japan. Sony also looked strong, having shipped more than 5 million PlayStations worldwide.

As they did during the days of the Consumer Electronics Show, Nintendo executives held a major press conference the day before E3 began. During this conference, held in the Biltmore Hotel, Nintendo chairman Howard Lincoln officially presented the N64 to the American press, and Nintendo spokespeople Ken Lobb and Isaac Marshall demonstrated *Super Mario 64* and *Pilotwings*. Lincoln announced that Nintendo 64 would be launched on September 30, at a retail price of \$250.

Next, Peter Main, Nintendo of America vice president of marketing, described the future of the market as he saw it. Sony, he said, currently controlled

80 percent of the 32/64-bit market. Even calculating in the September release of N64, Main conceded that Sony would control 50 percent of the market in 1996, with Nintendo wresting 34 percent of the market away from Sega and Sony. By Main's figures, Sega was not much of a threat. He predicted that Sega would control only 16 percent of the market in 1996. And that 16 percent, he predicted, would drop to 8 percent in 1997, as Nintendo once again became the industry leader and claimed 53 percent of the market share, leaving Sony with only 39 percent. That night, Nintendo threw a lavish party in which Cirque Du Soleil performed. As far as Nintendo was concerned, the show had started perfectly. But Nintendo had no idea what Sony had planned.

As his predecessor had done the year before, Sony executive vice president Jim Whims decided to start the show "right" by making a momentous announcement during his keynote address. Though Sony could barely keep up with the demand for the PlayStation at \$299, he announced that the company had decided to drop the price of the console to \$199. The announcement caught Nintendo and Sega flatfooted. It was later revealed that there had been a gentleman's agreement barring price announcements at the show.

Last year, Steve [Race] got up and said, "\$299," and the place went crazy. So dropping to \$199, this had been part of our plans for a long time. If we had to hire a streaker to run across the stage with a sign that said \$199, we would have done it. This was part of our legacy now: don't miss the keynote address if Sony's up there.

—Jim Whims

Whims's announcement sent shockwaves through the show. Sega had fought against dropping the price of Saturn to \$299. Saturn hardware was more expensive to manufacture than PlayStation, and Sega did not have Sony's deep pockets to help absorb the costs of giving away hardware and profiting from software. Executives at Nintendo and Sega were not prepared to respond, but both companies eventually dropped their prices to match Sony's. Through Jim Whims's calculated game of chicken, Sony flexed its marketing muscle and proved itself to be the industry leader.

Sony's leadership came with a certain amount of arrogance. On the third day of the show, Sega spokeswoman Angela Edwards brought signs saying,

“Saturn, now only \$299.” As she stood outside the show, waiting for help carrying the signs, an employee of Sony approached her, looked at the signs, and said, “You’re pathetic!”

Sega was in a bad position. Long known for its sports simulations, Sega did not have a football game ready for the 1996 fall season, and Electronic Arts did not release a 32-bit version of *Madden NFL '96*, meaning there was no football game on Saturn. Sony, on the other hand, produced an excellent game called *NFL GameDay* and took leadership of the sports category.

Sega had squandered its five-month lead to market, releasing only one new game all summer long. By 1996, Sony had a much larger library than Sega, and Sega’s only hope at E3 would be new games. The company’s hottest prospect was *NiGHTS*, a game created by Yuji Naka, who also designed *Sonic The Hedgehog*.

Naka may have established his reputation as a great designer with *Sonic*, but with *NiGHTS* he demonstrated his versatility. The game revolved around two young children who, in their dreams, gracefully flew through a surrealistic world and faced personal demons. Always the perfectionist, Naka, the main programmer on the *NiGHTS* project, fretted over every detail in the game.

NiGHTS was a difficult game to make. . . . Very difficult. It wasn’t just the 3D aspects, it was more the actual game itself, the worlds and the way the characters interacted. If the game was missing one important element, it was going to be a complete failure and everybody would look at it and say, “This is really a disappointment.”

—Yuji Naka, leader of Sonic Team, Sega Enterprises

NiGHTS showed the strengths and weaknesses of Saturn. The game’s atmosphere and design were exceptional; but while the game had a free-flowing 3D feel, most of it actually took place in two dimensions. Although Nintendo and Sony had true 3D game machines, Sega had a 2D console that did a good job with 3D objects but wasn’t optimized for 3D environments.

Interestingly, *NiGHTS* became part of a new kinder, gentler image that Sega tried to evoke in 1996. The Sega scream disappeared from the company’s advertising and Sega held press events for educators and gave Internet-ready Saturns to schools. Things were closing in on Sega. The company that had

once proved that the market was big enough for two competitors was now demonstrating that it wasn't big enough for three.

The Launch of Nintendo 64

In mid-June 1996, Nintendo shipped 300,000 N64 consoles for the June 23 Japanese launch date. Only three games were ready on the day that the console launched: *Super Mario 64*, *Pilot Wings 64*, and a Japanese chess game called *Shogi*. In what may have been the most orderly launch of a highly anticipated console ever, Nintendo sold all 300,000 consoles, plus 300,000 copies of *Super Mario 64* and nearly 200,000 copies of *Pilot Wings 64*.

Judging by the quiet Sunday morning launch, observers might have misjudged how excited people were over Nintendo 64. A Japanese fast food chain started serving “Mario milkshakes” and a new television game show based on Nintendo 64 appeared on television. Nintendo planned to ship more than 1 million more consoles by the end of the summer, but the euphoria did not last. Instead of shipping more consoles, Nintendo needed to ship more games.

In the meantime, Nintendo executives steadfastly tried to explain to the press why it was actually advantageous to launch after Sega and Sony.

It has always been the contention of Nintendo that among the criteria for success, “first” is pretty far down the list. The three factors that most motivate our customers—and those of our competitors—remain constant, no matter how the technology advances. First, is the “content” or entertainment made possible by the technology. Second, does the new technology actually deliver performance which is immediately and palpably better than what they already own? And third, and perhaps most important, can they afford it?³

Milestones

By the spring of 1996, the industry was rife with rumors that Tom Kalinske was leaving Sega. People assumed he was going to work for Disney when he was seen having lunch with Disney CEO Michael Eisner. Indications hinted that Kalinske was ready to leave. Mike Ribero, a former hotel executive hired by Sega, was rumored to have told people that he was replacing Kalinske.

Moreover, there were stories about Kalinske falling asleep during company meetings and reports that he didn't seem as intense as he had been in earlier years.

He [Tom] would fall asleep on occasion in meetings. That is true. These were nine-hour meetings. Sega had a thing for meetings. You'd get there at 8:00 A.M. and then you'd get out of the meeting at, like, 4:00 P.M., so he wasn't the only person.

—Michael Latham, former head of Omega Team, Sega of America

Saturn continued to do well in Japan, and Sega's Japanese executives blamed their American affiliate for any problems in the U.S. market. Hayao Nakayama made frequent trips to Sega of America's Redwood City headquarters, and the Japanese team seized more and more control of how the company was run.

According to some people who worked with him, Kalinske seemed less interested in the work. People talked about walking into his office and seeing him staring out his window at nearby Oracle Headquarters. He didn't seem as ready to fight Japan on decisions he knew were incorrect, and when his marketing team sent out a poorly conceived advertisement, he replied with a surly memo that said simply, "Have we lost our collective minds?"

It wasn't the failure of Saturn that made him lose interest; it was the inability to do something about it. He was not allowed to do anything. The U.S. side was basically no longer in control.

—Michael Latham

On July 15, Sega announced that Kalinske had tendered his resignation. Within the week, Sega cofounder David Rosen resigned as chairman of Sega Enterprises and Hayao Nakayama resigned as CEO. Shortly after leaving Sega, Kalinske reemerged at Learning Technologies, a company founded by Oracle chief Larry Ellison and famed stock trader Michael Milken, both personal friends of Kalinske. Nakayama and Rosen remained with Sega, with Rosen acting as senior advisor.

One week after Kalinske left Sega, Sony Computer Entertainment of America announced that Jim Whims had resigned. For the next six months,

Sony executive Shigeo Maruyama would fill in as chairman, commuting from Japan on a weekly basis.

Mr. Maruyama came in to become the chairman, and he did the infamous commute. He commuted between Tokyo and Foster City every week for six months. He would start the week on Monday, work in Japan Monday and half a day on Tuesday, then he'd get on a plane that would get him here Tuesday morning. He would work in Foster City Tuesday through Thursday, and then he'd catch a plane on Friday, which got him back to Tokyo on Saturday in the afternoon.

—Kazuo “Kaz” Hirai, president and COO,
Sony Computer Entertainment America

Maruyama eventually brought in Kazuo “Kaz” Hirai to run the American side of the PlayStation business. Hirai, who had been with Sony Music Corporation since 1984, was an excellent choice. Tall and elegant, Hirai spoke flawless English, though he was originally from Japan. He projected the very image Sony wished to convey—educated, sophisticated, and confident. Under Hirai's leadership, Sony Computer Entertainment America prepared for the launch of Nintendo 64.

These were busy months for Sony. On September 5, Sony released a game called *Crash Bandicoot*. The term *bandicoot* referred to a class of Southern Pacific marsupials that included Tasmanian devils. Hence, it surprised no one when the animal in Sony's new game turned out to be a dim-witted brute with a spin attack. Critics charged that as a game, *Crash Bandicoot* was too derivative. Like Mario and Sonic, Crash ran around jumping on enemies and collecting things—mostly apples. But Crash was a character with a strong personality, and the people behind the game had a great eye for gameplay. Hence the character seemed destined to become Sony's marsupial mascot. The character certainly took a step toward mascot status when an actor dressed in a Crash Bandicoot costume did a television commercial in which he visited Nintendo headquarters.

The commercial began with a quick glimpse of the sign outside Nintendo's Redmond, Washington, headquarters. (Except for that initial shot, none of the filming was done at Nintendo.) In the commercial, the actor playing Crash stood in Nintendo's parking lot, calling the “plumber boy” out for a showdown, until

Nintendo security escorted him away. While *Crash Bandicoot* was Sony's big game of 1996 and Crash became a popular character, Kaz Hirai and the rest of the Sony staff refused to acknowledge him as their mascot, though he would not have been Sony's first spokes-cartoon. Around the time of the first E3, Sony briefly flirted with the idea of using a character called "Polygonman" as its spokesperson. Polygonman looked like a stained-glass version of a *Simpsons* character. After E3, Sony quickly abandoned him and company spokespeople claimed to have never heard of the character.

And if you take a look at Sony advertising, they never used any sort of celebrity or character endorsements. We never intended for Polygonman to be a character in a game. He was never going to be a Sonic or a Mario. He was always supposed to be something like the Master Game or something out there in the ether that was always challenging you. It was the challenge of video games that he was supposed to represent.

And the Japanese took it much more literally and thought that this was something that we were trying to do that was going to supplant Sony. We introduced Polygonman at E3. The Japanese saw it and went postal on us.

—Steve Race, former CEO, Sony Computer Entertainment America

Mario Returns

The American launch of Nintendo 64 was more phenomenal than the one in Japan. Nintendo made a press event of the shipping process by inviting a television crew to film pallets of consoles being loaded onto a plane. After more than a year of waiting for Nintendo to unveil the new game console, the media became a willing accomplice and the event made the national news. Nintendo originally announced that the release date would be Monday, September 30, then moved the launch up one day to the 29th. Having already presold their entire inventory, many stores started handing out their consoles on Friday the 27th, and all 500,000 units that Nintendo had shipped to the United States were gone by weekend's close. Though the stated plan had long been to release a very limited number of Nintendo 64s in the United States in 1996, Nintendo executives recognized what a vital market they were dealing with and scrambled to find more.

To accommodate the red-hot U.S. market, Nintendo rerouted consoles earmarked for the Japanese and European markets. Rerouting Japanese consoles was of little consequence; demand for the unit had slowed by mid-July. The fact that Nintendo had plundered the few consoles targeted for Europe, however, offended certain European retailers and game publications.

Back in the United States, demand for N64 held strong, but a problem that plagued the Japanese market was becoming apparent in the United States as well. The predictions of gloom and doom appeared to have been correct. Due to the cartridge format, there simply were not enough games for the new console, and many games that came out were expensive or small. *Super Mario 64* and *Pilot Wings 64*, the first games Nintendo released for N64, both came from Shigeru Miyamoto's design team and received rave reviews. The next titles, however, did not fare as well. *Cruis 'n USA*, a Williams arcade game published under the Nintendo label, had a slow frame rate, causing the game's motion to look jerky.

Now, I'm going to be very direct with you. The very best games out there right now are N64 games. On the other hand, when it comes to *Cruis 'n USA*, I wouldn't be honest if I said that *Cruis 'n USA* was much of a game; but that product is selling. I think it would be fair to say that we know that some of the N64 software is not better than [the software you find] on other platforms. The challenge for us is to continue to try to keep that quality on the way up. Hopefully, we're going to succeed most of the time, but occasionally we're not. It's like saying to MGM, "You made *Gone with the Wind*. How come all the rest of your movies are not *Gone with the Wind*?" It just doesn't work that way.

—Howard Lincoln

There were other disappointments, too. *Mortal Kombat Trilogy*, a game that many people thought would only come out on N64, was released on other systems. The PlayStation version was superior.

When played side-by-side, the PlayStation version makes the N64 version look like it's on a SNES [Super NES]. Then there's the sound: The digitized sound effects are utterly atrocious. In fact, it's so muffled that players may as well put their speakers on the other side of a cement wall

before starting the game. The music is typical of a non-CD game—that is to say, worthless. It’s tinny and very electronic sounding.

Mortal Kombat Trilogy proves that the Nintendo 64 is merely mortal. While it surpasses the PlayStation version in regard to load time, it still suffers a three or four second delay when loading a new character in multiplayer fighting. Ultimately, only *Mortal Kombat* addicts, who don’t already own a PlayStation, will find this game worth picking up.⁴

When asked about these titles, Nintendo executives often defended them by pointing out that consumers had voted with their wallets—nearly every title released for Nintendo 64 was a million-seller. Nintendo’s statistics were accurate: the company quoted TRST data with nearly religious reverence. The numbers, however, did not reflect the entire story. Millions of people purchased N64 hardware in the first year, then had only a few games to choose from. Every game for Nintendo 64 had reached bestseller status, but the sales were only being spread across a handful of games, whereas Saturn and PlayStation software sales were spread across five times as many games.

Nintendo did publish some brilliant games in the early days of Nintendo 64. During the first year after releasing the console, Nintendo released a few games that appealed to mainstream audiences, including *WaveRace 64*, *Mario Kart 64*, *GoldenEye 007*, and *Star Fox 64*. But the Nintendo 64 library was limited and expensive. By the end of 1997, PlayStation and Saturn had hundreds of games, most of which sold for under \$50. By comparison, there were merely dozens of games for N64, some of which sold for nearly \$80, and rumors were that future third-party cartridges might cost as much as \$100. People outside Nintendo speculated that the console manufacturer had to sell its games at a loss and subsidize costs for other companies to keep prices down. Nintendo of America adamantly denied these stories, and the price of cartridges never reached \$100. By 1998, the cost of cartridge manufacturing came down, and Nintendo 64 cartridges generally retailed for \$10 more than PlayStation games.

Nintendo Loses Square

During this crucial time, Nintendo lost an important third-party partner called Square Soft. Square Soft specialized in publishing role-playing games (RPGs), adventure games in which players traversed elaborate worlds, gaining experience

and learning fighting techniques while completing a quest. Although Square Soft published many highly respected games, its crown jewel was a series of games called *Final Fantasy*, created by Hironobu Sakaguchi, one of the world's most respected game designers.

Sakaguchi did not start out making RPGs. After joining Square Soft, he made three computer games, then switched platforms to Famicom and made *Highway Star* (released in the United States as *Rad Racer*), *King's Knight*, and *World Runner*. Sakaguchi was not excited by any of these games. His bosses assigned him to make 3D games because the programmer working with him, a notable Apple II game designer named Nasir Gebelli, was good at coming up with 3D code. Square sold approximately 500,000 copies of *Highway Star* and *World Runner*, pleasing Sakaguchi's employers. But Sakaguchi had become bored with game design.

In an effort to get more excited about his work, Sakaguchi decided to switch genres and work on a game that would be more interesting to write. He decided to create an RPG and brought the idea to his boss.

The only person you had to go to at that time was the president [of the company], and he didn't really understand games that well. Selling him on the concept of an RPG wasn't that hard. I just went up and said, "I want to do an RPG."

He said, "Is that good, is that interesting?" and I said, "Yeah, it's fun." So he said, "Okay."

—Hironobu Sakaguchi, president, Square USA

Since he planned to quit making games after this first RPG, Sakaguchi named his game *Final Fantasy*.

The basic concept was really a mythical concept of the whole earth, with fire and water representing everything on earth. I took that concept and represented those elements into a crystal, and that essentially became sort of the core theme for *Final Fantasy*.

I took a preexisting idea—the four or five basic elements of the world; sort of an orthodox and mythical concept—then molded it into an original fantasy story.

—Hironobu Sakaguchi

Creating *Final Fantasy* was a much larger and more involved task than making *World Runner*. Though he was able to create his earlier games with a three-person team, he needed a fifteen-person team for his RPG.

I started with the story and the overall worldview of the game. I had the graphics designer do the drawings.

Initially, the process was different from what we do now. Currently, we write the story completely and work from the storyline.

When we first started *Final Fantasy I*, we were really limited, technologically. So what I had to do first was make a basic rough idea for the game [then we would test it]. We had to deal with the hardware first. By doing so, we would come up with the graphics on the screen and figure out, based on the limitations and the capabilities of the hardware, how big the world was going to be and how many locations I could have.

After that, I would incorporate my rough ideas and build up a story based on what I had to work with. It was kind of working backwards.

—Hironobu Sakaguchi

A huge bestseller, *Final Fantasy* was not the swan song Sakaguchi intended it to be. It resonated so well with Japanese audiences that Nintendo published it in the United States under its own label, and an unshakable relationship was forged between Square Soft and Nintendo.* In the early 1990s, as other companies flocked to Sega, Square Soft remained exclusive to Nintendo, publishing games like *Chrono Trigger* and *Secret of Mana* and always having its biggest sales with Sakaguchi's *Final Fantasy* games. Square Soft became one of Nintendo's most influential partners, a partnership that was covered by such publications as *Businessweek*.

The American audience was never as interested in RPGs as the Japanese. Though Square Soft's RPGs had a loyal U.S. following, sales were not as high as company officials hoped, and the company did not release *Final Fantasy V* in the United States. Then in 1994, as the market entered its major slump, Square released *Final Fantasy VI* for Super NES. (As there had been no American versions

* Square later released *Final Fantasy IV* in the United States as *Final Fantasy II* for the SNES.

of the previous three games, it published game six as *Final Fantasy III*.) *Final Fantasy III* was one of the top-selling games of 1994, but Square Soft employees were not satisfied.

When you look at that game and the numbers in Japan . . . It sold 3 million copies in Japan. Judging by the [U.S.] population alone, we predicted millions. So, it didn't do that well.

—Hironobu Sakaguchi

Square Soft's final title for Super NES was *Super Mario RPG*, a game that took Square Soft's signature in-depth stories and turn-based combat and applied them to the Mario universe. With the game's great graphics and a slowly growing base of RPG players, *Super Mario RPG* sales exceeded Nintendo's rather conservative expectations. Then, as Nintendo prepared to unveil Nintendo 64, Square Soft announced that it was switching allegiances. Like Namco before it, Square Soft was going to make console games exclusively for PlayStation. The split was bitter. So bitter, in fact, that even after Nintendo reestablished relations with Namco in 1999, Yamauchi still refused to work with Square Soft. When asked if Nintendo would allow Square Soft to publish games for a new console called "Dolphin" that would not be released until the year 2001, Minoru Arakawa quietly replied, "I do not think it is yet time for Square Soft."

Square Soft's decision to switch to Sony was largely due to aesthetic considerations. In a 1997 interview, Hironobu Sakaguchi explained that Sony's CD-ROM format allowed for more artistic freedom. His next game, released as *Final Fantasy VII* in both Japan and the United States, would be the biggest game of 1997 and one of the first RPGs to crack the U.S. market.

With PlayStation's 32-bit processing power and the seemingly unlimited storage of CD-ROM, Sakaguchi was able to increase the artistic qualities of his games. Sakaguchi had always had an eye for cinematics, art, and intricate storytelling, but working with CD-ROM gave him the opportunity to enhance these features exponentially. *Final Fantasy VII* had epic dramatic cut scenes with symphonic music. Sold under the Square Soft label in Japan, it was marketed by Sony with a huge budget in the United States. Nintendo had always published the bestselling game of the year in the United States, but with Sakaguchi's amazing

animations and Sony's big-budget marketing, *Final Fantasy VII* became the biggest-selling game of 1997 worldwide. Once, when asked if the time and money spent on the game paid off, Sakaguchi happily replied, "Big time. It sold better in the United States than in Japan, and six million worldwide."

Violence Becomes the Issue

In August 1997, Nintendo released *GoldenEye 007*, a game that Rare, Ltd., developed, based on the James Bond movie *Goldeneye*. Few people paid close attention when Nintendo first announced plans to make a game based on James Bond, and interest waned even more when it was announced that the game would be a first-person shooter. When the game was released, it became a sleeper hit. PCs would remain the best platform for first-person shooters, but *GoldenEye 007* set the standard by which console versions of this genre would be judged.

The Rare team members who designed *GoldenEye 007* had been meticulous. They requested blueprints of set locations to be sure that their virtual locations matched those in the movie. They filled their game with Bond music and created a storyline that was reasonably true to the film.

As the game progressed, one designer asked Ken Lobb, the Nintendo of America executive in charge of second-party games, if he would like to appear in it. Tickled at the idea of becoming a virtual target, Lobb agreed. Curious to see what he would look like, Lobb looked for his image in each unfinished version of the game as Rare submitted them for review. When his likeness did not show up after several versions, he thought that Rare had decided against using it. Then, when a nearly completed version of *GoldenEye 007* came in for review, Lobb's team found a bug in the game and called him for help.

They said they taped it and showed me the tape. It was me. They had made a tape of each of them shooting me, again and again.

—Ken Lobb, head of Tree House, Nintendo of America

GoldenEye 007 was quietly released in August, a month not often associated with blockbuster game releases. But the game's popularity grew steadily. By the end of 1997, Nintendo had sold nearly 1.1 million copies. By 1999, that number would swell to more than 5 million copies worldwide.

This was a watershed game in the history of Nintendo. Rated “T” (or appropriate for players ages thirteen and up), *GoldenEye 007* was, like any other first-person shooter, about traveling through 3D environments and killing enemies. Nintendo, the last holdout of the video game industry, had shed its Disney image.

The Tragic Storm

On October 1, 1997, 16-year-old Luke Woodham of Pearl, Mississippi, used a baseball bat and a butcher knife to murder his mother. He then hid a rifle under his trench coat and took it to school. By the end of the day, he had killed three students and wounded several more before being stopped by Pearl High School assistant principal Joel Myrick, who grabbed a pistol from his car and brought Woodham down at gunpoint. “Mr. Myrick, the world has wronged me,” Woodham told the stunned school official.

On the morning of December 1, exactly two months after the shooting in Pearl, 14-year-old Michael Carneal of Paducah, Kentucky, brought a 22-caliber pistol that he had stolen from his next-door neighbor to Heath High School and entered the lobby where 35 students had gathered together for a prayer meeting. Without warning, Carneal fired shots into the crowd, stopped to reload, and was wrestled down by Ben Strong, the boy leading the prayer. He wounded 8 students, 3 of whom died.

On March 24, 1998, 13-year-old Mitchell Johnson and 11-year-old Andrew Golden of Jonesboro, Arkansas, set off the fire alarm at Westside Middle School, then opened fire on students and teachers from nearby woods.

Two months later, on May 20, after being expelled from Thurston High School, 15-year-old Kip Kinkel of Springfield, Oregon, shot his parents and planted booby-traps around their bodies. He returned to school the next day with a 22-caliber semiautomatic rifle and shot 24 students, killing 2. When several boys tackled him to the ground, Kinkel shouted, “Shoot me!”

These events left the entire nation unhinged. Tragically, the violence did not stop there. On April 20, 1999, 18-year-old Eric Harris and 17-year-old Dylan Klebold of Littleton, Colorado, smuggled four high-powered guns and a stash of homemade explosives into Columbine High School and carried out a massacre that left 12 students and 1 teacher dead, and 23 students injured, before killing themselves. National outrage turned to horror and grief as the media

showed the nation images of the wounded and the dead. As people tried to make sense of what happened, stories about school violence became a common theme in the media.

Video games were not immediately rooted out as a cause of the Pearl, Mississippi, shooting, and the Paducah shooting was said to have been inspired by the movie *Basketball Diaries*. Mitchell Johnson and Andrew Golden, on the other hand, were said to have spent a lot of time playing shooting games, including *GoldenEye 007*, before their 1998 Jonesboro assault. Most incriminating of all, however, was the shooting in Littleton. "The two became 'obsessed' with the violent videogame *Doom*—an interactive game in which the players try to rack up the most kills—and played it every afternoon," reported *Newsweek*.⁵ Harris was said to have created a special version of *Doom* based on his high school.

Months later, the media reported that Klebold and Harris had made videotapes of themselves shortly before going on their killing spree. In the tapes, Klebold and Harris talked about their plans and related it to *Doom*.

Dylan Klebold sits in the tan La-Z-Boy, chewing on a toothpick. Eric Harris adjusts his video camera a few feet away, then settles into his chair with a bottle of Jack Daniels and a sawed-off shotgun in his lap. He calls it Arlene, after a favorite character in the gory *Doom* video games and books that he likes so much.⁶

"I hope we kill 250 of you," Klebold says. He thinks it will be the most "nerve-racking 15 minutes of my life, after the bombs are set and we're waiting to charge through the school. Seconds will be like hours. I can't wait. I'll be shaking like a leaf."

"It's going to be like fucking *Doom*," Harris says. "Tick, tick, tick, tick . . . Haa! That fucking shotgun is straight from *Doom*."⁷

State legislators from Oregon, Arkansas, Florida, and other states proposed legislation to outlaw certain arcade games, and activist groups rose up, decrying violence in the media. In Washington, D.C., Senator Sam Brownback (Republican of Kansas) had long tried to hold hearings that investigated the marketing of violence to children. The events in Columbine gave his hearings a new urgency, and they began on May 4, 1999, just two weeks later.

The hearings had been rescheduled at least twice. We had it previously scheduled, and then an expert witness fell out or we had some objection, so this was like the third time it had been scheduled.

—Sam Brownback, Republican of Kansas, United States Senate

In light of recent events, it was only natural that this round of Senate hearings took on a more serious and heated tone than the earlier hearings. While only a few senators appeared at Joseph Lieberman's 1993 hearings, fourteen made an appearance at the latter ones. John McCain and Orrin Hatch, both of whom would run in the 2000 presidential primaries, delivered statements at the hearings.* Reverend Charles J. Chaput, archbishop of Denver, Colorado, addressed the hearing, as did Motion Picture Association of America president Jack Valenti and Doug Lowenstein of the Interactive Digital Software Association.

The hearings, which focused as much if not more on movies than on video and computer games, began with statements from each senator. Senator Brownback started his statement discussing the connection between the Paducah shooting and the movie *Basketball Diaries*, then turned his attention to video games.

The violence in video games is, in some ways, even more disturbing. A game player does not merely witness violence, he takes an active part. Indeed, the point of such games as *Postal*, *Kingpin*, *Duke Nuke 'Em*, *Guilty Gear*, and others, is to kill as many characters as possible. The higher your body count, the higher your score.^{8**}

—Senator Sam Brownback

Senator Kay Bailey Hutchinson (Republican of Texas) gave one of the most accusatory opening statements.

I think we need to find the connection between our violent art and our violent culture. Modern video games are worse and more realistic than ever. An

* Ironically, Joseph Lieberman, who was also very much a part of these hearings, went further than Hatch or McCain in the 2000 elections. Al Gore, who ultimately won the Democratic nomination, selected Lieberman as his vice presidential nominee.

** This quote and many following quotes were taken directly from the Senate transcripts.

eight-year-old can sneak off into cyberspace, assume a new virtual identity, and commit ghastly acts of violence and brutality. With the touch of a button, our children can torture victims, rip out their hearts or spinal cords, and then wave the bloody debris above their heads.

The statistics on television violence are staggering. The average American child witnesses 100,000 acts of violence and 8,000 murders on television before leaving elementary school, but if a child is playing video games, that number is multiplied and the violence is at his own hands. He pulls the trigger, he likes it, he has fun, and his score goes up. What kind of message is that?

One of our witnesses today says that video games deliberately use the psychological techniques of desensitization used to teach soldiers how to kill in battle. The difference, he says, is that video game violence is associated with reward and pleasure, and not tempered by a respect for authority or the revulsion of war.⁹

—Kay Bailey Hutchinson, Republican of Texas, United States Senate

It was inevitable that the hearings would refer back to the tragedy at Columbine High School again and again, giving the impression that the senators held violent games and movies responsible for the killing. In interviews, however, the senators were more cautious about laying blame. “I don’t know that you could quantify that. We do know, and we now have studies showing a correlation between playing the violent video games and violent behavior, and that correlation is actually higher than the correlation between smoking and lung cancer. So there is correlation, but I don’t know that you can draw that directly on the Columbine case,” Senator Brownback stated in an interview after the hearings.

Slade Gorton, the Washington State Republican who approached Nintendo for help in saving the Mariners, also participated in the hearings. Although he pronounced scathing condemnation of the executives from entertainment conglomerates who refused to appear at the hearings, he also spoke out in Nintendo’s defense.

Colonel Grossman yesterday on *Meet the Press* said that Nintendo marketed a game, or had a contract with the Army to market a game, for target purposes that is also used by children. Nintendo informs me that it does not now

and never has had any contract with the Army or any Armed Service for any purpose whatsoever, and I think their response deserves to be on the record.¹⁰

—Slade Gorton, Republican of Washington, United States Senate

After the senators finished their opening statements, the first of two panels came onto the floor. The members of this panel included Archbishop Chaput; Jack Valenti, of the MPAA; and Dr. William Bennett, former secretary of education and drug czar in the Bush administration.

“Exactly one week ago today, I buried the third of four Catholic teenagers shot to death at Columbine High School,” the Archbishop began. “More than 1,000 people turned out for each of the funerals.” Clearly unfamiliar with video games, the Archbishop mentioned the movie *The Matrix* in his brief talk. He finished by urging the senators to look at the causes, not symptoms, of our violent culture.

The roots of violence in our culture are much more complicated than just bad rock lyrics or brutal screenplays. It is clear that the Columbine killings were planned well before *The Matrix* ever opened. But common sense tells us that the violence of our music, our video games, our films, and our television has to go somewhere. And it goes straight into the hearts of our children, to bear fruit in ways we cannot imagine until something like Littleton happens.”

—Reverend Charles J. Chaput, archbishop of Denver, Colorado

Jack Valenti, the next speaker, brought a revivalist tone to the hearings.

. . . there are three pillars, and only three, which support the rostrum from which springs a child’s conduct: home and church and school. And mothers and fathers and priests and ministers and rabbis and teachers and principals have to insert in a young child’s heart and mind early on an impenetrable moral shield against which all blandishments of peers and all the enticements of the mean streets and clannish cliques and visual and oral images crack and shatter.¹²

—Jack Valenti, president and CEO, Motion Picture Association of America

... absent all that, no abolition of constitutional rights and no presidential executive order, no amount of hand-wringing and fiery advocacy and no congressional law is going to salvage that child's conduct or locate what, in my judgment, is the missing moral core.

Now I know that accusatory fingers point at movies. And I will accept that. Last year in America, we produced over 550 movies. And I will tell you something—when you make that many movies, some of them are going to be slovenly produced.¹³

—Jack Valenti

The final speaker on the panel, Dr. William Bennett, who, as a former drug czar, former secretary of education, author of *The Book of Virtues*, and codirector of Empower America, came to the hearings with an air of authority. Bennett took the discussion in a philosophical direction, calling for social responsibility on the part of movie studios and entertainment companies. After his speech, the floor was opened for discussion, much of which focused on Valenti. Senator Brownback harkened back to Valenti's comment about "slovenly produced" movies and asked him to name examples. Valenti said that he would not do that. Brownback fired back that Valenti's voice would add "extraordinary force" to call responsibility. "Well, I plead with you, I just plead with you, to please—our country needs your voice to clean this up and to be specific on it. We are having a terrible problem, and we really need you."¹⁴

Impassioned as Senator Brownback's pleas may have been, Valenti, as the CEO of the Motion Picture Association of America, was in no position to single out movies of which he did not approve. As Senator Brownback continued to question him, Valenti pointed out that the crime rate among children ages 18 and younger had been steadily dropping since 1994. "Last year, 4/100ths of 1 percent of all young people, under the age of 18, were arrested—not convicted, arrested—for a violent crime. That means that 99.59 percent of all young people in this country are not into violent crime."¹⁵

After rather intense discussion, Senator Brownback called in the second panel, which included Lieutenant Colonel (retired) Dave Grossman, a former Army Ranger who had taught psychology at West Point and was currently teaching at the University of Arkansas, as well as consulting with law enforcement agencies

and other organizations; Daphne White, executive director of a parent advocacy group called the Lion & Lamb Project; Interactive Digital Software Association president Douglas Lowenstein; and Dr. Henry Jenkins of the Media Lab at MIT.

Outspoken and direct, Col. Grossman had become somewhat of a lightning rod in the debate about the effects of video game violence. In his testimony, he discussed how the army had employed training simulators to teach soldiers to fire their weapons during combat.

There is a broad leap, a vast chasm, between being a healthy American citizen and being able to snuff another human being's life out. There has to be a bridge, there has to be a gap. In World War II, we taught our soldiers to fire at bull's eye targets. They fought well. They fought bravely. But we realized there was a flaw in our training when they came on the battlefield and they saw no bull's eyes. And they were not able to transition from training to reality.

Since World War II, we have introduced a wide variety of simulators. The first of those simulators were pop-up human targets. When those targets appeared in front of soldiers, they learned to fire, and fire instinctively. When real human beings popped up in front of them, they could transfer the data from that simulator.

Today we use more advanced simulators. The law enforcement community uses a simulator that is a large-screen television with human beings on it, firing a gun that is identical to what you will see in any video arcade, except in the arcade the safety catch is turned off.¹⁶

—Lieutenant Colonel (retired) Dave Grossman

In answer to the letter from Nintendo read by Senator Gorton, Colonel Grossman stated, "The Army has a device; I will bring pictures. The last time I trained on that puppy, it had a label on it that said "Nintendo."^{17*}

The industry has to ask how it can market one device to the military, whoever is marketing it, and then turn around and give the same device to your children, and claim that it is harmless.

* It later became clear that Nintendo never had a contract to create simulations for the Army.

Doom is being marketed and has been licensed to the United States Marine Corps. The Marine Corps is using it as an excellent tactical training device. How can the same device be provided indiscriminately to children over the Internet, and yet the Marine Corps continues to use this device?¹⁸

—Lieutenant Colonel (retired) Dave Grossman

Grossman next brought up the instructional value of flight simulators, then went on to call violent games “mass-murder simulators.”¹⁹

Now, what we have before us is a new national video game. The children are invested in racking up the new high score in a national video game. The high scorer on this game, instead of getting the three letter initials in the arcade, gets their picture on *Time* magazine and on every television in America. I have been predicting for close to a year now that the next major school shooting will see bombs. How could we have known that?

Well, because if you want to get up to the upper levels in a video game and get that high body count, you have got to have instruments of mass destruction. And every video game incorporates that at the higher levels. We are scripting the children and they are carrying out the scripts.²⁰

—Lieutenant Colonel (retired) Dave Grossman

As he reached the end of his allotted time, Col. Grossman stated that “the willingness of children to commit” crimes was going up and up. Since 1957, he said, the assault rate in the United States had risen “seven-fold.”²¹ He then gave statistics for other nations.

Grossman said that video games should be classified as firearms trainers and, as such, should be judged under the second amendment instead of the first. “And as such,” he said, “these things should be regulated, just like guns. Anybody who gives a child a gun is a criminal. Anybody who gives unrestricted access to these devices are criminals.”²²

What we call for are three things, Senator: Education and legislation and litigation. We must educate America’s parents, as a comprehensive national program, about what the AMA and the APA and the Surgeon General says about the link between violent media and violence in their children.

Legislation: these devices that you see the ads for out there, these devices are law enforcement training devices that need to be legislated. And they are not even remotely a first amendment issue.

And finally, litigation: Three ads here from the video game industry. One is for a joystick in a children's magazine. When you pull the trigger, it bucks in your hand like a gun. The ad says: Psychologists say it is important to feel something when you kill.²³

—Lieutenant Colonel (retired) Dave Grossman

Keep your eyes on that Paducah case, Senator. It will be the Lexington and Concord of the culture wars. It will be the shot heard round the world, as we begin holding these individuals accountable for the toxic substance they are pouring into our children's lives.^{24*}

—Lieutenant Colonel (retired) Dave Grossman

After Col. Grossman's incendiary message, the rest of the proceedings seemed tame. Daphne White, head of the Lion & Lamb Project, echoed Senator Joseph Lieberman's concerns that games that the Entertainment Software Rating Board had given an "M" rating, meaning they were appropriate for players ages seventeen and up, were being marketed to children. One of her strongest themes was that it was ludicrous to give games with violent or sexual content an "M" rating and then make toys based on them.

I have here a *Duke Nukem* [sic] action figure. The same game. One of these games is actually called *Time to Kill*. It says on it [the action figure]: Warning. Choking hazard. Small parts. Not for children under three.²⁵

—Daphne White, executive director, the Lion & Lamb Project

Though she caged it in dramatic tones by comparing regulating video games with the regulation of alcohol and tobacco, White was really asking for strict enforcement of the rating system.

* Col. Grossman may have been referring not only to the Carneal case itself but also to a suit that held video game manufacturers, movie makers, and other entertainment groups partially responsible for the shooting. That case was dismissed but is still up on appeal.

The next member of the panel was Douglas Lowenstein who, as the head of the Interactive Digital Software Association (IDSA), had the unlucky task of representing video and computer companies during the proceedings. This was a particularly unpleasant task, as Senator Brownback openly stated that one purpose of the hearings would be to humiliate entertainment company executives in the same fashion that cigarette manufacturers had been humiliated in other hearings. Brownback was disappointed, however, as all of the executives he invited chose to avoid the hearings.

Lowenstein started his testimony by reciting IDSA data showing that 70 percent of people playing PC games and 60 percent of people playing video games were over 18 years of age. He next cited Entertainment Software Rating Board statistics showing that most games were not violent. He then brought up, as a third myth, the lack of research specifically tracking the effects of video games. Having tried to attack these points, Lowenstein proceeded to present concrete plans for how the video game industry would work to prevent future violence.

First, we will be taking new steps to publicize and increase the visibility of the ESRB (Entertainment Software Rating Board) ratings, increase parental awareness, and encourage their use.

Second, we will explore ways to encourage retailers to enforce the ratings. While our industry has the ability to rate the product, we cannot impose policies on the retail community as to how they will manage those ratings. But our goal has been to work with retailers to put in place systems that directly or indirectly limit the ability of persons under seventeen to buy mature-rated games.

Third, we will review our advertising code of conduct to see what steps we can take to moderate the promotion of violent ads.²⁶

—Douglas Lowenstein, president, Interactive Digital Software Association

The final member of the panel was Dr. Henry Jenkins, director of the Comparative Media Studies program at MIT. Jenkins, who has spent years studying popular culture, described theories he had formulated about the role of video games in modern “boy” culture. “Far from being victims of video games,” Professor Jenkins told the senators, “Eric Harris and Dylan Klebold had a complex

relationship to many forms of popular culture.” Jenkins said that Klebold and Harris were “drawn to dark and brutal images, which they invested with their personal demons.” He encouraged a “national conversation” about popular culture but suggested that such conversations should not take place until the current “climate of moral panic” had subsided.²⁷

We are afraid of our children. We are afraid of their relations to the digital media, and we suddenly cannot avoid either. These factors may shape the policies that emerge in this discussion, but they should not.

Banning black trench coats* and abolishing video games does not get us anywhere. These are symbols of youth alienation and rage, not the causes. And we need to get back to the causes.²⁸

—Dr. Henry Jenkins, director of comparative media studies,
Massachusetts Institute of Technology

Throughout the hearings, Senator Brownback used *Postal* as the example of irresponsible games. After Dr. Jenkins’ testimony, Brownback questioned Lowenstein about the game and was surprised to hear that the game had not sold well and the company that published it was out of business. Even after learning this information, Senator Brownback continued to try to pin down Lowenstein on questions about the availability of M-rated games to children over the Internet and whether or not *Doom* had been licensed to the Marine Corps. While Lowenstein offered to work with the senator to locate this information, these were areas in which he was not prepared to speak. id Software, the company that created *Doom*, was not a member of the IDSA, and although Lowenstein said he had read articles discussing the Marine Corp’s version of *Doom*, he claimed no personal knowledge. As to the marketing plans of individual companies, Lowenstein pledged to try and help Senator Brownback track down the information he wanted.

The final panel to address the hearing consisted of two college professors discussing the results of research tracking the effects of media violence. The first, Dr. L. Rowell Huesmann, a professor of psychology and communications

* Klebold and Harris hung around with a group of students at Columbine High School that referred to themselves as the “Trench Coat Mafia.”

studies at the University of Michigan, discussed extensive research on media-viewing habits and applied some of the results to game playing. The second, Dr. Diane Levine, a professor of education at Boston-based Wheelock College, discussed cross-marketing efforts between TV studios and toy companies.

In truth, though they were far more dramatic, Senator Brownback's 1999 hearings did not have the deep impact on the video game industry that Senator Lieberman's 1993 hearings had. This probably reflected a certain sophistication that Douglas Lowenstein and the IDSA brought to the industry. Under Lowenstein's direction, the industry presented a unified voice and appeared to be much more anxious to cooperate.

Not much came out of the hearings. It was a nice discussion, but I haven't seen much follow-up. We did push for the Federal Trade Commission to do a study on whether violence is being marketed to children by entertainment companies. I think the president put some pressure on the movie industry to be a little more diligent about seeing who's going to their R [rated] and violent movies; but that's about all I can come up with.

—Senator Sam Brownback

And the Cycle Continues

People say that I've been driven by vengeance in going after Sony, and I think they're probably right.

—Bernard "Bernie" Stolar, former CEO, Sega of America

The PlayStation 2 computer entertainment system is not the future of video game entertainment, it is the future of entertainment period.

—Kazuo "Kaz" Hirai, president and COO, Sony Computer Entertainment America

They [Sony Computer Entertainment America] also said they are not the future of video games, they are the future of entertainment; and God bless them. We're the future of video games.

—Peter Moore, president and CEO, Sega of America

The Eclipse of Saturn

I felt Saturn was hurting the company more than helping it. That was a battle that we weren't going to win.

—Bernie Stolar

As Nintendo executive vice president of sales and marketing Peter Main had predicted, much of the success of Nintendo 64 (N64) came at Sega's expense. With the launch of N64, Sega's already-low 32-bit sales were cut in half. By August 1997, Nintendo controlled 40 percent of the next-generation console market and Sony controlled 47 percent, leaving Sega with a mere 12 percent. Price cuts and big-name games did not help.

Bernie Stolar, formerly Sony's vice president of third-party, was president and CEO of Sega of America as Saturn entered its last days. Under his leadership, Sega stopped advertising Saturn on television. Then, on March 14, 1998, Sega announced plans to release three final games in the United States—*The House of the Dead*, *Shining Force III*, and *Burning Rangers*. After the release of these games, Sega of America discontinued the system.

We tried to wind it down as cleanly as we could for the consumer. Again, we knew that the consumer was our judge, and we needed the consumer for the next round of what we were going to do as a company. So we did it slowly, maybe a little bit more slowly than I would have liked, but we did it that way. And I think we didn't hurt the consumer.

—Bernie Stolar

The damage from Saturn's failure was extensive. At the time of the discontinuation, Sega had sold 2 million Saturns in the United States. By comparison, Sony had shipped 10.75 million PlayStations into North America.* Sega would have to absorb a \$450 million loss (a 21 percent drop in sales) in 1998. The impact was devastating, but Sega did not bow out of the market for long. Sat-

* Sony always reported shipment statistics rather than sell-through, which was the kind of statistic that Nintendo and Sega generally used.

urn remained active in Europe and Japan longer than it did in the United States. In the meantime, Sega of America released several games for PCs. Word got out about Sega completing the design of a new system even before the final Saturn games reached store shelves. There were stories about the two systems being developed simultaneously, one in the United States and one in Japan. If these stories were accurate, Sega ended up manufacturing the system that was developed in Japan.

Largely stoked by Sega itself, the rumors continued. First known as “Dural,” a metallic female fighter from the *Virtua Fighter* series, then as “Katana,” a Japanese sword, Sega’s new system was supposed to have a 128-bit processor, a 3D graphics chip from 3Dfx, and a Windows CE operating system. It was said to have a modem, and there were rumors that it would play games on DVDs (digital versatile disks) instead of CD-ROM.

On May 21, 1998, Sega put all the speculation to rest by announcing that “Dreamcast,” the official name of the new 128-bit console, would be released in Japan on November 27. Most of the rumors proved fairly accurate. The final version of Dreamcast featured a Hitachi SH4 CPU and an NEC/VideoLogic PowerVR 3D graphics chip. The original specifications did call for a chip from 3Dfx, but Sega made a last minute change. Dreamcast’s final design included a stereo chip from Yamaha and two operating systems—one from Sega, the other from Microsoft. Rather than a CD-ROM, it utilized a technology called GD-ROM—proprietary double-density CDs that held over a gigabyte of information. Most intriguing of all, however, was that the console included a 56K modem in a modular slot that would allow for updating should Sega choose to release broadband support. According to Sega officials, online gaming would be an essential element in their strategy for Dreamcast.

In Sega’s Tokyo headquarters, a new CEO named Shoichiro Irimajiri hoped to use Dreamcast to reestablish Sega as a dynamic force in games. A former executive at Honda, Irimajiri was an energetic leader with ambitious plans, but before he could get the chance to launch his new system in Japan, Sony stole the spotlight. On March 2, 1999, Sony held a press conference in an enormous Tokyo opera house to announce the details of a “next generation PlayStation” that Sony promised would be released in the year 2000.

Putting on a fascinating show of internal politics, Sony’s retiring chairman Norio Ohga began the meeting by reciting some of PlayStation’s many successes.

Then Ohga made a statement that was meant to send a message to Nobuyuki Idei, who as Sony Electronics president and co-CEO was next in line to be chairman. “I remember when Ken Kutaragi proposed the PlayStation. I was the only one on the board who supported the idea.”

PlayStation, which many Sony executives had viewed as little more than a side trip, had become Sony’s biggest product of the 1990s. With more than 50 million units on the world market, PlayStation accounted for 40 percent of Sony Electronics revenues.

Trying to put a good face on the situation, Idei began his speech by saying, “I always believed in PlayStation.” He then went on to say, “I believe this [the next-generation PlayStation] is something that will surpass a mere game machine.”

Sony Computer Entertainment president Teruhisa Tokunaga came next to discuss the manufacturing partnership Sony had formed with Toshiba. Together, they were spending 20 billion yen (approximately \$160 million against Japan’s weakening yen) on the project. Tokunaga finished by describing the quickening pace of PlayStation sales. It had taken his company nearly two years to ship its first 10 million consoles. The next 10 million shipped in only nine months. Then Sony hit the next 10 million in six months, followed with another 10 million shipped six months later. According to Tokunaga, Sony went from 40 million to 50 million consoles shipped worldwide in just four months.

The final speaker of the day was Ken Kutaragi, the engineer turned Sony Computer Entertainment executive who designed the original PlayStation. As he explained the performance specifications of his new console, it became obvious that Sony had created a stripped-down version of a super computer. Sega’s Dreamcast rendered 3 million polygons per second, nearly 10 times as many as the original PlayStation. This sounded impressive until Kutaragi revealed that his next-generation machine could render 60 million raw polygons per second. He conceded, however, that this performance was slowed as you added in effects such as fogging, shading, and curved surfaces. Even with these effects, however, the new console could render more than 16 million polygons per second.

Central to the new console’s performance was an amazing new processor that Kutaragi called the “Emotion Engine.” This processor was the result of brilliant out-of-the-box thinking. The computer industry had always followed a maxim called Moore’s Law, named after Intel executive Gordon

Moore. According to Moore's Law, the typical high-tech manufacturer would double the speed of its fastest processor every eighteen months. This generally resulted in companies simply doubling the size of their processor. Realizing that doubling everything would make for a very expensive console, the engineers who designed the "next generation" PlayStation decided to isolate the operations that impact gaming and increase them exponentially. While the Emotion Engine was not going to be as fast as a Pentium II for some operations, its graphics processor had 1,000 times more bandwidth than current PC graphics processors at the time and its floating-point calculation performance was rated at 6.2 gigaflops (billion) per second, making it as fast as most super computers.*

Kutaragi's team had pulled out all the stops. The new console would run games on DVD, a medium that held 8 gigabytes on standard disks and 17 gigabytes on dual-layered disks. While he would not commit to whether the new console would play movies on DVD, the announcement led to widespread speculation that it would. What Kutaragi did confirm, however, was that the new console would be backward-compatible with the original PlayStation, meaning it could play the thousands of games that had been released for the Sony platform worldwide.

The event ended with representatives of Namco, Square Soft, and Polyphony, the outside development house that created Sony's bestselling *Gran Turismo*, running short demonstrations on a stack of computers set up to emulate the "next-generation" PlayStation.

Sega was caught flat-footed. Judging by the specifications Sony had released, Dreamcast was obsolete before it even launched. In an effort to respond, Bernie Stolar held a telephone press conference in which he addressed Sony's announcement.

On paper, Sony's machine sounds impressive; but the fact is, it is still on paper. Dreamcast is here now. Frankly, Sony really has their work cut out for them creating a machine with the specs they unveiled on Tuesday and supporting it

* PlayStation 2 was so powerful, in fact, that *Star Wars* creator George Lucas later commented that it had more on-the-fly rendering power than all of the computers he used to make *Star Wars Episode One*.

with a strong lineup of games. With a launch just one year away, [that] will be a challenge. And while Sony is working to create that hardware, Sega will already be in the marketplace with Dreamcast, building our installed base and developing an impressive library of games.

—Bernard “Bernie” Stolar

Over the next few months, Sony parceled out small tidbits of information, revealing a master plan that would make its new console the center of entertainment in the home. It was later revealed that the console would indeed play movies. Sony announced plans to release an Ethernet connection, enabling it to handle high-speed connections to the Internet. The entire strategy, later tagged as Sony’s “Trojan Horse,” was to release a moderately priced console that would be the hub of a complete entertainment concept that merged television viewing, movie watching, video game playing, and Internet surfing into one device.

To help emphasize that new console’s image as more than a game machine, Sony concept designer Teiyu Goto created a special case for the new console that suggested consumer electronics instead of simply video games. Goto, who also designed the look for the VAIO line of laptop computers, created a cabinet that looked like a stereo component. Instead of the sleek shape and smooth lines and top-loading design of a game console, the “next generation” PlayStation had a rectangular cabinet and a front-loading tray.

Nintendo Joins in the Race

With Sega launching a new system, and Sony well on its way, it was obvious that Nintendo would shortly join in the race. Nintendo made its announcement the day before the Electronic Entertainment Expo.

In typical Nintendo fashion, the announcement provided very little information, just enough specifics for reporters to create a rough idea of what the system might be able to do. To create the new system, which was code-named Dolphin, Nintendo had forged two new partnerships. The design of the processing chip would be handled by IBM. Dubbed “Gekko,” the new chip would be based on IBM’s PowerPC architecture and would feature 0.18 micron copper technology.

According to Nintendo chairman Howard Lincoln, the new console would have a DVD drive. However, like Kutaragi, he refused to specify whether it

would play movies. He also refused to specify polygon-rendering rates. The most he would say was that Dolphin's graphics performance would meet or exceed anything on the market or going into production.

What he did say, however, was that Matsushita, known in the United States as Panasonic, had entered into a manufacturing agreement with Nintendo. Dolphin, Lincoln told the audience, would be released in 2000, just like the "next-generation" PlayStation.

A Shaky Dream Begins

On November 27, 1998, Sega launched Dreamcast in Japan. Although the system sold out, the response was quieter than expected. Sega shipped 150,000 consoles, which sold for 29,800 yen (approximately \$260). Of the four games available at launch, only *Virtua Fighter 3tb* sold well. Based on the most successful arcade game Sega ever released in Japan, *Virtua Fighter 3tb* sold at a nearly one-to-one ratio with the console.* The other three games available at launch were *Godzilla Generations*, a ponderous game in which players controlled Godzilla as he pounded Japanese cities into rubble; *Pen Pen Tricelon*, a cute racing game for children, featuring a penguin and other cuddly animals; and *July*, a text-and-pictures adventure. In the weeks that followed, Sega shipped 300,000 more consoles, along with two new games—*Sonic Adventure* and *Sega Rally 2*.

Although the Dreamcast launch looked successful on the surface, it had in fact gone dreadfully wrong. With Sony's next-generation machine looming on the horizon, Sega wanted to shore up its installed-base as quickly as possible. Sega needed to ship more consoles and more games so that it could exploit the launch-day excitement. That, however, was prevented when NEC encountered manufacturing problems.

We set up the whole program, and it seemed perfect except the supply of the graphics chips. . . . It was very sad to have the shortage of the graphics chips. We felt that 200,000 to 300,000 additional units could have been sold if we could have had enough supply.

—Shoichiro Irimajiri, former president and CEO, Sega Enterprises

* *Virtua Fighter 3* did not do well in U.S. arcades.

Irimajiri had hoped to sell well over 1 million Dreamcasts in Japan by February 1999. Instead, he sold under 900,000. And the sales continued to be slow. Looking at the Japanese market from a historical perspective, Irimajiri calculated that he would need to sell more than 2 million consoles by the time Sony launched its new console. In the fiscal year that started on March 1, 1999, and ended on February 29, 2000, Sega sold less than 900,000 consoles. Sega's only hope was to beat Sony on the basis of price and games.

We don't know what price point and what kind of performance the PlayStation 2 will have, but from the information we have already gotten, the PlayStation chip will be very, very nice, and we expect that it will be out of the range of the consumer console price.

As you know, the \$199 price point is kind of a magic price point for selling consoles and home electronics all over the world—\$199 in the United States, 199 pounds in England, 19,900 yen in Japan. We have already reached that point. We are going to price down the Dreamcast in Japan from the 24th of this month (June) to 19,900 yen, and we are going to launch the Dreamcast in the U.S. at \$199 and in the UK at 199 pounds. So we have already reached that price point, but PlayStation 2 will probably take a couple of years to reach that price point. Sony's starting point may even be almost double, placing it in a completely different category.

—Shoichiro Irimajiri

Back in the United States, Bernie Stolar and other Sega of America officials scrambled to avoid the mistakes Sega Enterprises had made with the launch of Dreamcast. Stolar vehemently maintained that he did not want the four games available at Japanese launch to be used as launch titles in the United States. Working closely with Midway Games, Sega hoped to have a much better lineup, with fifteen games ready when Dreamcast went to market.

The American launch of Dreamcast was set for September 9, 1999.* As the launch approached, however, Bernie Stolar was ousted from Sega much as he had been from Sony. With Stolar out, the responsibility of directing the launch

* Sega marketing, always a sucker for alliteration, billed the launch as 9/9/99 for \$199.

fell on the shoulders of Peter Moore, a former Reebok executive who had recently joined the company as senior vice president of marketing.

Sega of America had advantages never available to Sega of Japan. The success of Genesis gave Sega more clout in the United States than Sega Enterprises had in Japan. Sega had a sizable audience of loyal fans who liked the kinds of games Sega published. Also, in the ten months between the Japanese and American launches, several companies had managed to finish off truly polished games. Midway Games, for instance, had four games ready for the U.S. launch.

Fifteen. That's almost the minimum. At some point you have to draw a line in the sand and say, "enough." There are fifteen confirmed titles. We're still discussing some games with third-parties who, coming out of E3, are enthused about our launch plans.

I think fifteen, quite frankly, is ample. In my brief career in this particular industry, it's pretty evident to me that no platform has ever launched with that breadth of titles.

**—Peter Moore, former senior vice president of marketing,
Sega of America**

Several of the games selected for the launch stood out as "breakthrough" products. Sega had a brilliant football simulation called *Sega Sports NFL2K* with fast gameplay, a wide array of play options, and excellent graphics. Midway created a comical boxing game called *Ready 2 Rumble* that had a nearly perfect mixture of humor, graphic panache, and fast action. Perhaps the best game at the Dreamcast launch was Namco's *Soul Calibur*, a superb home version of an arcade hit that actually looked better on Dreamcast than it did in the arcades.*

The U.S. launch of Dreamcast was hailed as a big event, with retailers selling out of the nearly 1 million units Sega shipped. But just as unforeseen circumstances slowed the Japanese launch, an unexpected hiccup earned Sega of America bad press. A slight manufacturing glitch in many of the Midway games caused the music to skip. The problem was easily corrected, but Sega's perfectly choreographed launch was marred.

* Of all the games released for Dreamcast in its first year, only *Soul Calibur* sold over 1 million units worldwide.

Appearing to have some momentum, Sega enjoyed great hardware sales, with over 1.2 million consoles sold by the end of the holidays. During January, Sega experienced an expected dip in sales. Unfortunately, that dip continued through spring, even as Sega and its third-party partners expanded the Dreamcast library with a wide variety of games.

Monster Pockets

The initial shipment was just around 200,000 or so—fortunately, we were able to sell out. Then there were additional orders of 100,000 more and then another 100,000. By the end of 1996, we reached around 1 million. So we were very grateful. But we originally thought of it as a one-time product.

—Yasuhiro Minagawa, director of communications, Nintendo Co., Ltd.

On February 27, 1996, Nintendo Co., Ltd., released a new cartridge for Game Boy called *Pokemon* (short for pocket monsters) into the Japanese market. What no one could possibly have suspected at Nintendo was that the company had done more than publish a game—it had started a small industry.

An outside company called Game Freak created the concept for *Pokemon* and proposed it to Nintendo at a time when Shigeru Miyamoto, the man who created *Mario*, just happened to be looking for a game that would allow Game Boy players to exchange items using Gamelink cables. Miyamoto oversaw the project from Nintendo's side as it evolved into a full-fledged RPG for children, a universe in which children captured and trained friendly monsters, then entered them to fight in competitions. To create a need for players to exchange monsters, Nintendo created two different versions of the cartridge, red and green, each of which had a few unique creatures. The only way to collect all 151 creatures would be to trade.

Believing that the game would have limited appeal, Nintendo shipped only 200,000 copies of *Pokemon* on its first release. But *Pokemon*'s popularity grew steadily, and several stores ordered more copies of the game. Seizing an opportunity, one of the teams behind *Pokemon* set up a partnership with an animation studio to create an *anime* cartoon for television. When the cartoon became the highest-rated kids' show in Japan, Nintendo started licensing

Pokemon to toy, trading card, clothing, and food manufacturers. *Pokemon* soon became a billion-dollar industry.

Pokemon has become such a phenomenal success. . . . At the very beginning just a few people knew this cartridge, and it was word-of-mouth that spread its popularity without the media noticing it. The cartoon came one year after the debut of the Game Boy game. We are continuing to sell a lot of the Game Boy games, but now we have movies. We have so much merchandise and the trading cards; but the growth was a gradual process.

—Hiroshi Imanishi, general affairs manager, Nintendo Co, Ltd.

In 1998, Nintendo finally exported the *Pokemon* phenomenon to the United States as part of a massive movement designed to bring new life to the aging Game Boy. The U.S. release of *Pokemon* bore little resemblance to the Japanese one, as the cards, games, and television show all hit within a few weeks of each other; the success was immediate. The syndicated *Pokemon* cartoon show became the hottest kids' show on television, and *Pokemon Red* and *Pokemon Blue* became the bestselling games on the market. *Pokemon* trading cards became such a hot item that some elementary schools banned children from bringing them to class. Parents even initiated lawsuits, claiming that the way Nintendo and its partners marketed *Pokemon* trading cards was a form of gambling.

On November 23, 1998, Nintendo released Game Boy Color, a long-anticipated version of Game Boy with a color screen. In the spirit of Game Boy efficiency, Game Boy Color's 32,000-color screen did not use backlit technology. Like other Game Boys, it had to be played in a brightly lit area or players would not be able to see the images on the screen. On the other hand, it could run for 10 to 12 hours on two AA batteries.* With the launch of *Pokemon* and Game Boy Color, Game Boy sales shot into record territory.

*Energy efficiency was always the hallmark of Game Boy technology. Lynx, Game Gear, and TurboExpress all had better, clearer screens. Nomad, which played Genesis cartridges, had a library of larger, more visual, and generally better-made games. But Game Boy was the most portable system, in that it could go several times longer on two AA batteries than any of the previously named systems could go on six AAs.

NeoGeo Pocket Color (NGPC), a competitor that came out in 1999, on the other hand, had better technology and longer battery life. By the time it came out, though, Nintendo had already sold more than 80 million Game Boys worldwide. NGPC never stood a chance.

The boost could not have come at a better time. In 1999, nearly every video game company in Japan saw a significant drop in sales. Because of the relatively low cost of developing and manufacturing Game Boy cartridges and the brisk sales brought on by *Pokemon* and Game Boy Color, Nintendo had a profitable year.

In the United States, *Pokemon* sales gave the entire industry a boost. Video game sales generally drop in transition years in which new hardware systems are released, but U.S. game sales rose by \$1 billion in 1999. The rise could be summed up in two words: Game Boy.

In 1997, the last year before the U.S. release of *Pokemon*, handheld game sales amounted to approximately \$294 million. Nintendo released *Pokemon* in September 1998, and handheld sales surged to \$466 million. From the moment they were released, *Pokemon Blue* and *Pokemon Red* became the hottest games on the market. In 1999, however, handheld game sales rose to \$1.26 billion, representing 18 percent of the market. In short, the market had not grown; Game Boy did.

The Big Week

In February, Sony staged a trade show called PlayStation Festival 2000 to demonstrate the games that were under development for its new console, which was to be officially named PlayStation 2. By this time, the entire gaming world seemed consumed with excitement over the new console. But there were only nineteen games on display at the show, and PlayStation Festival 2000 left many attendees unimpressed.

Then rumors began circulating that for all of its power, PlayStation 2 was distinctly hard to program. Shinji Mikami, the Capcom designer credited with creating the popular *Resident Evil* and *Dino Crisis* games, complained that Sony had created insufficient tools to support PlayStation 2. Having created best-selling games for Dreamcast, Saturn, Nintendo 64, and PlayStation, Mikami said PlayStation 2 was the most difficult system he had ever worked with.

Sony provided an extensive library with PlayStation. The library would do a lot of the work, but with PlayStation 2, there is no library. We need to create our own library, which poses its own set of problems in that there are so many choices to achieve the same effects.

—Shinji Mikami, game designer, Capcom

If you focus on making full use of all the specs, it will be very expensive and time-consuming to produce a game. Instead, if you can focus on one aspect of the game, then I believe you can produce a great game. For example, in an action game, accentuate the gameplay even to the point of compromising other aspects like graphics.

—Gozo Kitao, general manager, Konami

Despite the bad showing at PlayStation Festival 2000 and the complaints of many developers, a few spectacular games were already underway for PlayStation 2. Keiji Inafune, the designer best known for his *Mega Man* games, was developing a samurai game titled *Onimusha: Warlords*, with spectacular graphics. While Inafune conceded that he did have some problems, he felt that many of those problems were partially caused by the huge amount of additional power PlayStation 2 offered, giving game designers too many options at once.

Until now, because of the limitations of the hardware, when I asked a programmer if something could be done, [he] would say it couldn't be done. With PS2, [programmers] tell me, "Yes, maybe, but it will take a long time." How long, they don't know.

So now, as a producer, my dilemma is what do I do? Do I let them go with the concept without knowing how long it will take to implement it? In a sense, there are no hardware limitations now and there is a large learning curve for programmers.

—Keiji Inafune, game designer, Capcom

At Konami, Hideo Kojima quietly began working on *Metal Gear Solid 2*, a PlayStation 2 game in which players helped an ex-special forces soldier infiltrate a terrorist group and destroy a giant robot. Kojima, a self-described cinemaphile, claimed that PlayStation 2 was not as powerful as he had expected; but when he revealed video clips from his game at the 2000 Electronic Entertainment Expo, his videotape was the talk of the show.

I was actually expecting something much better; and we were not getting what we expected. In the early days, I really dreaded going to work because

I knew we were not going to get what we expected. The quality of the graphics that we have right now is the bottom line. They are going to get better.

—Hideo Kojima, game designer, Konami

The Japanese launch of PlayStation 2 took place on Sunday, March 4, 2000. This was by far the most anticipated video game launch in history. *Newsweek* ran a cover story about the new console the week before the launch, and reporters and camera crews from all over the world descended on Akihabara, Tokyo's "Electric Town," to cover the story.

Sony promised to ship 1 million consoles for the launch. A few weeks before the launch, a high-level consultant working for Sony stated that the company would ship 2 million units, but Sony quickly released an official statement denying his claims.

The actual launch was a very orderly event. Most stores presold their entire inventory weeks before the deliveries were made. Long lines of customers who did not want to take a chance on shortages formed in front of these stores on March 3. The stores opened their doors and began handing the consoles out at midnight on March 4, and the distribution went smoothly.

A few electronics stores and several large department stores sold their PlayStation 2 allotments on a first-come, first-served basis. These stores generally opened at 11:00 A.M., but to avoid causing traffic problems, they opened at 7:00 A.M. on the day of the launch. Thousands of people gathered in front of these stores. According to the manager of a Laox store, 4,000 people lined up at his door. When asked how many consoles he had to sell, he said he had about 200. Within three hours of opening, every store had sold out. In all, 600,000 consoles were sold, but it was obvious that Sony could have sold two or three times that number.

For the next few days, Japanese newspapers carried all kinds of stories about PlayStation 2. One big story concerned a boy who managed to purchase a PlayStation 2 and was riding his bicycle home from the store when two strangers drove by on a motorcycle and grabbed the bag out of his hands. Another story involved a teenager who tried to commit suicide by jumping out of an Akihabara building because he was unable to purchase a PlayStation 2. Strangest of all were reports that the Japanese government determined that

PlayStation 2 was a super computer capable of guiding missiles and imposed a limit on exporting the consoles.

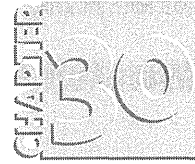
The big sales of PlayStation 2 did not extend beyond the hardware, however. Of the thirteen games available on the day of the launch, only Namco's *Ridge Racer V* seemed to appeal to consumers. When asked, many consumers said they were looking forward to the April release of *Tekken Tag Tournament*, a fighting game that was also from Namco, but PlayStation 2 software sales remained low for the first few months. DVD players had not sold as well in Japan as they had in the United States. In the first few months after its release, the number-one use for PlayStation 2 was as a DVD movie player, and the leading software title for the console was the DVD version of the Keanu Reeves movie *The Matrix*.

Sega Enterprises chairman Shoichiro Irimajiri said he was elated with the results of the Sony launch.

In Japan, PlayStation 2 is the first console that is selling only for hardware. In the past, the console was only a box without software; but people are buying the PlayStation 2 without any software. It's the image of this PlayStation that is interesting. So [people are really buying the] DVD player function and the big image of the PlayStation 2, which was created by Sony. I don't feel PlayStation 2 will have a big impact on the market this year.

—Shoichiro Irimajiri

Sega's wounds ran deeper than the feisty Irimajiri confessed. In June, Irimajiri resigned as chairman of Sega Enterprises and took a lower post. He was replaced by Isao Okawa, chairman of Sega's parent company CSK. According to Okawa, Sega hoped to position Dreamcast as an Internet device both in the United States and Japan. Toward that end, Sega of America opened its own Internet service provider—Sega.com.



Three Horses and a Pony

When you consider the strength of the PlayStation 2 hype, the cost of marketing a new platform in the North American market . . . When you consider that Microsoft has announced a \$500 million marketing program for the launch of Xbox and that Nintendo has a \$5 billion war chest and the overall power behind Sony's PlayStation brand, Sega does not have the ability to compete against those companies.

**—Charles Bellfield, vice president of marketing and corporate communications,
Sega of America**

Well, it's good to see that not everybody squealed. It's amazing the stuff we've read about this product, you know, that . . . we [supposedly] had a developers' conference. None of us knew we had [one], but we had one in Redmond and everybody came from all over the world.

—Seamus Blackley, chief Xbox technical officer, Microsoft Corporation

Microsoft Joins

And we had some guys at Microsoft who came and said, we should do a console.¹

—Bill Gates, Chairman, Microsoft Corporation

On March 10, 2000, less than one week after the launch of PlayStation 2 in Japan, Microsoft chairman Bill Gates stepped onto a stage in the San Jose Convention Center to give the most anticipated speech of the Game Developers Conference. Dressed in a leather jacket with a large green “X,” he uttered the anticipated words that ignited the crowd:

It’s very exciting to be here today and have the opportunity to announce a whole new platform, a platform that all of you are going to take in directions that we can’t even imagine.

—Bill Gates

Gates’s announcement was the culmination of a year of rumors and speculation.

The project began in 1999, around the time that Sega and Sony first started jockeying for position. Sega’s modest plans for Dreamcast, which were virtually unchanged from the plans for Master System and Genesis except for the inclusion of a modem, might have gone unnoticed by Microsoft management; but Sony’s “Trojan horse” strategy for taking over living rooms was another story. Sony’s PlayStation 2 was attracting a lot of attention, and it would clearly do more than simply play games. Microsoft executives saw Sony creating a new market.

A couple of things happened [at] about the same time roughly a year ago. We hold an executive retreat [every year], in which the senior management of Microsoft goes away and ponders the company and the kinds of things they’re doing. And one of the things they spent a lot of time talking about [last year] was rooms beyond the den, shall I say, where Microsoft . . . where important things are going on in the world of technology and Microsoft doesn’t have a big presence. One of those rooms is the living room.

Well, we're not a big player at this point [in living rooms], and if you look at the kind of entertainment that happens there, consoles are a huge part of it.

—Kevin Bachus, former director of third-party relations, Xbox Team,
Microsoft Corporation

Built by intelligent, technology-savvy people, Microsoft always attracted those who grew up playing video games. Some employees brought in arcade machines that they set on free-play and placed in buildings for employees to use. A skybridge between two buildings on the main Redmond campus had so many coin-operated games that it looked a bit like a video game arcade.

Microsoft also attracted many elite veterans of the video game industry. Joe Decuir, an Atari engineer who helped develop the 2600, moved to Microsoft.* Howard Phillips, Nintendo's "man who plays games for a living," joined Microsoft's entertainment division, as did David Thiel, who did the sound for *Q*Bert*.

With all of this talent and enthusiasm, it was only a matter of time before groups of employees got together and developed game systems on their own.

But Microsoft has never built a computer for sale, and in February 1999 it certainly had no official intention of making a game computer. Nonetheless, on the company's campus, in Building 27 and Building 5, a "garage-shop" game console was taking shape in the spare time of four engineers, Seamus Blackley, Kevin Bachus, Ted Hase, and Otto Berkes.²

Sony and Nintendo may have created unique machines with proprietary operating systems, but Microsoft's renegade gamers built their console around basic PC architecture. Their machine would have a customized operating system with a stripped down version of Windows, would use Microsoft's DirectX software, and would feature both a built-in hard drive and an EtherNet card for broadband communications. Although the final specifications for the console would not be ready for another year, the Microsoft board approved the project in March 1999.

*The processing chip in the 2600 was named "Stella" in honor of Decuir's bicycle.

Over the next ten months, the Xbox team remained a moving target for analysts and journalists alike. Microsoft neither confirmed nor denied work on the project, which most people recognized as a fairly reliable confirmation.*

Word about the Xbox often slipped out when Microsoft quietly discussed versions of its hardware with analysts and software makers. When Microsoft confirmed rumors that the console would include a graphics chip from a pioneering company called Nvidia Corporation, many analysts and game enthusiasts suddenly began praising the console.

As Bill Gates stood before the enthusiastic crowd at the Game Developers Conference, he unveiled a list of nearly final specifications that were guaranteed to dazzle a technically literate crowd. Analysts had already pronounced Xbox's Nvidia chip superior to the graphics processing unit in PlayStation 2. Coupled with an 8-gigabyte hard drive, twice as much memory as PlayStation 2, and an EtherNet card, Xbox appeared to be unstoppable.

That night, twenty-seven members of Microsoft's Xbox team ate a celebratory dinner together in a San Jose hotel. Other Microsoft employees saw them and sent bottles of champagne to their table in congratulations. Feeling like they had conquered the world, the team members joked and drank for hours. According to all reports, most team members were fairly drunk when they finally left the restaurant.

Rather than separate into groups when they reached the hotel elevator, the team decided to cram in together, far exceeding capacity. The last person in was Seamus Blackley. Well over six feet tall and quite sturdily built, Blackley saw that he could not cram through the elevator door; so he launched himself in horizontally, on top of the crowd. When the doors of the elevator slid shut, the elevator dropped three stories before coming to a safe stop.

Asked about this event later, Blackley, the college-trained physicist who once worked on the Fermilab Super Collider, commented, "Let's just say that when you cram twenty-seven celebrating people into an elevator with a seven-person limit, gravity happens quickly."

* Several newspapers, including *USA Today* and the *Wall Street Journal*, published articles with Xbox specifications that proved incorrect when the final specs were released. (I wrote the article for *USA Today*.)

Fall of the House of Sega

Or better yet a terminator,
Like Arnold Schwarzenegger,
Try'n to play me out like as if my name was Sega.³

—Eric Shroddy, Larry Muggerud, Lou Donaldson, *Jump Around*,
House of Pain

When Sega first announced Dreamcast, former Nintendo of America chairman Howard Lincoln sniped that considering Sega's faltering financial situation, the project was "completely irresponsible." According to Sega Enterprises cofounder David Rosen, both he and company chairman Isao Okawa had wanted to leave the hardware business after Genesis.*

The launch of PlayStation 2 broke huge holes in Sega's armor. While publicly remaining loyal to Dreamcast, several of Sega's top designers privately began admitting that they hoped to see their games on PlayStation 2. Yute Saito, the independent developer who created *Seaman*—the best-selling Dreamcast game in Japan, openly talked about releasing a PlayStation 2 version of his talking fish simulation.

Rather than keep its designer groups entirely in-house, Sega had spun them off into nine semi-autonomous organizations, naming its top designers as the heads of each independent studio. Within the industry, people quietly began speculating that this new corporate structure would open the door for supporting other platforms. When asked if his AM2 team—designers of such games as *Out Run* and *Space Harrier*—might investigate other platforms, Sega's Yu Suzuki commented, "I think so. Of course, we still have a relationship with Sega, so we cannot just move out right away. Maybe gradually."

They have spun off from Sega and they are 100 percent owned by Sega. If they are successful, they will have an IPO. Theoretically, they can do any-

* Isao Okawa constantly pushed Sega to create Internet content and insisted that Dreamcast include a modem.

thing [they want], but they are owned 100 percent by Sega—there is very, very little chance that they will make games for PlayStation 2.

—Shoichiro Irimajiri, former president and COO, Sega Enterprises

Under this new system, Suzuki's AM2 team, which had long had its own identity, remained largely unchanged but gained more independence, as did Yuji Naka's (*Sonic The Hedgehog*, *NiGHTS*) Sonic Team. Under this new structure, however, designers such as Hisao Oguchi (*Top Skater*, *Virtua Tennis*, *Crazy Taxi*) and Tetsuya Mizuguchi (*Sega Rally*, *Space Channel 5*) were able to expand their activities. Dreamcast needed an expanded library to survive, and between its independent studios and American publishing partners such as Visual Concepts (*NFL 2K*, *NBA 2K*), Sega became the most prolific publisher in the business.

Long known for publishing innovative games, Sega also gave its design houses latitude to experiment. Temporarily abandoning his arcade roots, Yu Suzuki began work on a Dreamcast game called *Shenmue*—basically, an interactive sixteen-chapter novel. The first installment of *Shenmue*, which contained only one chapter, was rumored to have cost upward of \$50 million to make. (Later chapters would cost less to make, since much of the money spent on the game went into developing new technologies.) With less than 3 million Dreamcasts sold worldwide, Sega could not possibly hope to make a profit on the game. In Japan, where role-playing games are especially popular and Yu Suzuki's notoriety as a game maker is second only to Nintendo's Shigeru Miyamoto, Sega sold 200,000 copies of *Shenmue*—a 20 percent penetration into the Dreamcast market.

If we think of just the software business, very honestly speaking, we have not recouped yet. But when I think of the development advances we learned that can be applied to other games, that investment will someday be recouped.

—Hideki Sato, president, Sega Enterprises

With approximately one million Dreamcast consoles sold in Japan and well over two million sold in the United States, Sega focused more of its attention on the U.S. market. "The developers are starting to realize that they have to fish where the fish are biting," became a slogan that Sega of America president

and COO Peter Moore repeated in many interviews during the eight months between PlayStation 2's Japanese launch and its U.S. debut.

Under Moore's leadership, Sega of America looked for ways to shore its base. One of its more dramatic moves was the formation of SegaNet, an Internet service provider created specifically for handling Dreamcast business. Slated for an official launch on September 7, 2000, the day of the MTV Video Music Awards, SegaNet was designed to reflect the aggressive new stance Sega was taking toward online games.

Up until the launch of SegaNet, Sega seemed to pay little attention to Dreamcast's 56K modem. (The only Dreamcast game with an online component available in the U.S. market was *Chu Chu Rocket*, a strategy game from Yuji Naka's Sonic Team.) Moore's stated purpose for initiating SegaNet was to beef up the American market. At \$21.95 per month, Sega's new service was competitively priced, and subscribers who signed up for a two-year contract received a free Dreamcast and keyboard. If all things went according to plan, a plurality of future Dreamcast games would also feature online components.

E3 2000

As May approached, the industry looked toward the 2000 Electronic Entertainment Expo (E3) in Los Angeles for details about how Sony would launch PlayStation 2 in the United States and how Sega would respond. In the days before the show began, Sony, Sega, and Nintendo wrangled for position.

Sony announced that it would hold its pre-E3 press conference on Wednesday, May 10—during the noon time slot generally reserved for Nintendo's conference. Though members of Nintendo's PR team considered sticking to their original plans, they realized they could not compete. Sony would announce the price and launch date of PlayStation 2—the only big announcements Nintendo had would be new games. Nintendo gave up the slot.

Sony held its press conference in a Los Angeles sound stage not far from the convention center. Thousands of journalists and industry insiders crammed into the studio grounds and were fed a lunch of pasta and salad, as Sony executives prepared and made last-minute changes to presentations. When the doors opened, the excited crowd pushed in as if fighting its way into a rock concert. Sony's announcements proved worth the wait.

Sony Computer Entertainment America chairman Kazuo “Kaz” Hirai began the event by describing differences between the Japanese PlayStation 2 and the one Sony would introduce into the North American market. The American version would have its DVD drivers programmed into its circuits as firmware, avoiding some of the bugs that plagued the Japanese version. Also, the U.S. version had a built-in bay for a hard drive/Ethernet card peripheral that Sony had under development.

As for price and launch date, while Sony had to abandon its traditional September launch date, PlayStation 2 would be released in the United States on Thursday, October 26, making it to market in time for the 2000 Christmas season. Like the original PlayStation, this new and powerful machine that played movies on DVD as well as games would launch with a modest \$299 price tag. But Sony was not just releasing a new game machine. PlayStation 2 would become the hub of the living room.

The PlayStation 2 computer entertainment system is not the future of video game entertainment, it is the future of entertainment period.

—Kazuo “Kaz” Hirai, president and COO,
Sony Computer Entertainment America

Sony also addressed concerns about the lack of software during the Japanese launch. According to Hirai, PlayStation would launch with more than twenty games. To ensure this, Sony Computer Entertainment America paired up with Electronic Arts, a powerful ally that could provide the game content that was so obviously missing at the March launch. Electronic Arts showed clips of *Madden NFL 2001*, *NASCAR*, and *SSX* for PlayStation 2. While Sony demonstrated *Gran Turismo 2000*,* the third installment in a hugely successful series of realistic driving simulations, the only Sony-published game that would be ready for the launch of PlayStation 2 was *Fantavision*, a strategy game in which players grouped and exploded skyrockets streaming across gorgeously rendered night skies.

Due largely to the overall disappointing quality of the PlayStation 2 library, it took fifteen months for the first million copy-selling game to appear on

* Sony eventually “scrapped” *Gran Turismo 2000* and released a much-improved game called *Gran Turismo 3* in June 2001.

the system. That game, Capcom's *Onimusha: Warlords*, was followed closely by the Japanese release of *Gran Turismo 3*, which was an instant million-seller.

Like Nintendo, Sega was forced to compete against hardware by announcing new software. Sega held an all-but-ignored barbecue outside Sony's conference. Sega executives gave endless interviews about their plans for SegaNet, but as the preshow events finished up, most people were still talking about PlayStation 2.

And people continued to discuss PlayStation 2 throughout the show but in an increasingly poor light. As E3 2000 continued, it became abundantly clear that while more games would be available at the American launch, only a few of them lived up to expectation. Sega, on the other hand, left many attendees very impressed.

Visual Concepts, the Sega-owned U.S. game developer making most of Sega's sports games, completed *NFL 2K1*—a football game with a robust online component. Not having to compensate for such variables as processor speeds, modem speeds, and graphics cards as PC game publishers did, Visual Concepts was able to concentrate all of its efforts into optimizing the game for Dreamcast and its 56K modem. The end result was a game that ran nearly as smoothly online as it did offline.

Sega had other surprises, too. Sega showed *Seaman*—a game in which players used a microphone to communicate with an extremely ugly talking fish, *NBA 2K1*, *Shenmue*, and *Space Channel 5* (a game in which players helped a sexy news anchor with bright pink pigtails rescue a space station from aliens by dancing), and more. An air of desperation hung over the Sega booth and many attendees knew that the company was fighting for its life, but watching the go-go dancers and other trappings around the Sega booth, many people gained confidence that Dreamcast might survive. All Sega of America needed, according to COO Peter Moore, would be to somehow reach the 5 million consoles-sold mark—to double its install base—by the end of the year. Now that Sega was “giving” away Dreamcasts as a premium for joining SegaNet, and with a line of good games on the way, Moore believed he could reach his goal.

But the noose continued to close around Sega. On May 22, nine days after E3, Isao Okawa, the chairman of CSK, Sega's parent company, removed Shoichiro Irimajiri as president of Sega and took control of the company.

People who were unfamiliar with Okawa feared that he might close Sega. He openly advocated Sega's abandoning the hardware business, once publicly stated that there would be no follow-up console to Dreamcast, and felt that the futures of Sega and Internet games were inseparably connected. One thing no one could challenge, however, was Okawa's commitment to Sega. In the summer of 1999, he personally loaned the company nearly \$500 million of his own money to help cover debts.

Rumblings in Japan

The fact of the matter is that people are going to look for their entertainment to come from somewhere, and it does not necessarily have to come from games.

—Satoru Iwata, director and general manager of corporate planning,
Nintendo Co., Ltd.

The drop in the Japanese game market started so slowly that few people saw the shift take place. Just as the American arcade business started drying up in 1982, Japanese arcades showed signs of distress in 1998. Sega, Japan's largest and strongest arcade company, began closing locations in 1999. By the following year, the closures even included some of its flagship Joypolis virtual theme parks. In 2001, Namco and Taito, the other titans of the Japanese arcade industry, followed Sega's lead.

We have closed many of our centers, which was hard business. We have almost finished for now, and we will begin looking into opening new amusement centers again. Of course, in the future, we will begin to build again. Fortunately, in the arcade business, Sega is dominant and is the main manufacturer of the machines. So, we will try to improve our position for the arcade business area.

I think Sega is the only company making profits from the arcade business right now. Namco is losing money because they have not done the restructuring that Sega has done to this business center. Sega scrapped the bad amusement centers. Namco recently announced that they will close a couple of hundred amusement centers.

—Hideki Sato, president, Sega Enterprises

But drops in the Japanese game industry did not stop with arcades. With Japanese consumers purchasing more games per console than other consumers, the Japanese market had long been the most lucrative of the three major video game markets—Japan, Europe, and North America. In 1997, Japanese consumers spent 750 billion yen (approximately \$6.8 billion) on video game software and hardware. By 1999, overall game spending dropped to 600 billion yen, approximately \$5 billion.⁴

Some of this was bound to happen. Having shipped approximately 18.5 million PlayStations into a country with an entire population of 127 million, Sony had saturated the market. By 2000, with the original PlayStation now six years old and PlayStation 2 only available in limited quantities, Sony's sales were bound to drop.

The reason for the decline [in sales] is because the Japanese video game industry is experiencing a change in generations of hardware with Sony Computer Entertainment's launch of PlayStation 2, as well as Microsoft's announcement of Xbox and Nintendo's announcement of Game Cube.

Throughout changes in hardware generations, consumers tend to refrain from purchasing old-generation products, and developers tend to lack the necessary skills to support the developments of quality products that fully benefit from the high-powered new generation hardware. These circumstances sometimes create a downward spiral. That is exactly what affected the sales of video games in Japan last year.

—Keiji Honda, president and COO, ENIX Corporation

Some bright spots appeared in the overall picture. When ENIX Corporation released *Dragon Quest VII* (for the original PlayStation), thousands of young men camped outside of local game stores just as they had for PlayStation 2 game consoles. Predicting huge sales based on past popularity, ENIX was prepared. By the end of the year, the company had sold more than 3 million copies of *Dragon Quest VII*. Those sales eventually climbed over 4 million, making it the most popular PlayStation game ever sold in Japan.

The same week that *Dragon Quest VII* temporarily ignited the Japanese market, Nintendo unveiled its long-awaited next-generation game console at its annual Spaceworld trade show. Held in Makuhari Messe, the same convention

center in which Nintendo 64 had been revealed in 1995, the show drew press from around the world.

First unveiled by Genyo Takeda, the man who succeeded Gumppei Yokoi as Nintendo's dean of engineering, the new system was called GameCube. Built around a 64-bit PowerPC processor, GameCube was the shape and size of a small Kleenex box—an approximately five-inch cube that would be manufactured in a number of bright colors and would use 2.9-inch mini DVD-ROMs. Unlike Xbox and PlayStation 2, GameCube would be a dedicated game machine with no ambitions of playing DVD movies.

The show closed with a lengthy presentation by star game designer Shigeru Miyamoto discussing the features he had requested in the new console and demonstrating the level of graphics it could achieve. The audience applauded wildly. Game enthusiast audiences always applauded wildly whenever Miyamoto spoke.

The Cataclysmic Christmas

I shouldn't criticize; old habits die hard. But the real metric is how many Americans have got a PlayStation 2 in their home, plugged in, and are actively purchasing software. How many [PlayStation 2s] have left the factory is meaningless.

—Peter Moore

Dreamcast started with a bang, then found itself adrift in the U.S. market. Sega crossed the one million units-sold mark after only a few weeks following its September 1999 launch, but sales ground to a halt by the first of 2000. Price drops and hot new games brought short spikes in hardware sales, and with an 8-to-1 software-to-hardware tie ratio, Dreamcast owners were clearly happy with their system and buying lots of software. But Sega needed to increase its install base; otherwise, the onslaught of PlayStation 2 would wipe Dreamcast out in the United States as it had in Japan. Yet nothing seemed to work. Sega dropped the price of Dreamcast to \$149—half the price of PlayStation 2. Sales jumped briefly, then dropped. Even offering free Dreamcasts with SegaNet did not move the quantity of units Sega needed to sell.

Sega failed to reach the targets we wanted to in terms of hardware sell-through. Therefore, our software, in the same time frame, didn't reach the levels that we had forecasted or expected. Although our tie ratio for the year 2000 was 8 to 1 . . . But 8 to 1 on a small install base didn't give us the revenue or the profit from that software that we needed for our business model to keep this platform viable in the medium to long term.

**—Charles Bellfield, vice president marketing and
corporate communications, Sega of America**

In mid-September, Sega received a stay of execution from the most unlikely of sources—Sony Computer Entertainment America. With the launch of PlayStation 2 just one month away, stories began surfacing that Sony did not have enough PlayStation 2 consoles to meet its promises. Rumor had it that Sony had somewhere between 300,000 and 500,000 U.S. consoles ready for shipment and that the company would either send half-shipments to retailers or postpone the entire launch. But if there was any truth to the rumor, Sony refused to comment.

Then a reporter working for *USA Today* contacted executives at two top electronic game specialty stores. Neither executive had heard about the shortages, but both took the rumors seriously and called Sony for an explanation.

(Reporter): What do you think of shortages of PlayStation 2?

(Unnamed executive): Well, you know, 1 million units is a lot less than we would have wanted for such an important product; but we will have to work with what we get.

(Reporter): What about 300,000 units? My sources say Sony only has 300,000 to 500,000 consoles to ship in.

(Unnamed Executive): Three hundred thousand? I haven't heard that? Where did you hear that? How good is your information? I don't have any comment.*

On September 20, Sony Computer Entertainment America president Kazuo Hirai held a press conference, in which he announced cutbacks in PlayStation 2 shipments due to parts shortages in Japan. Instead of shipping

* For the record, I was the reporter covering this story for *USA Today*.

1 million consoles, Sony could only ship 500,000 for the October 26 launch date, with an additional 100,000 consoles being shipped into the United States every week for the remainder of the year. In an industry rife with rumors and conspiracy theories, Sony's announcement led to wild speculation. People speculated that Sony was withholding shipments to build demand for the system, because there were no good games in the launch library, or because it did not want a major rollout until it had more first-party games available. Several publications sent reporters to visit electronics stores along Akihabara that October, where they discovered a small but steady supply of PlayStation 2 inventory. What few people knew was that the Graphics Synthesizer used in the U.S. version of PlayStation 2 was different than the one used in Japan. As Sony optimized its manufacturing, the company created a smaller version of its custom graphics chip for the United States, and glitches in manufacturing the smaller chip had caused the parts shortage.

Whatever had caused the shortage, the end result was that many retailers had allowed customers to reserve PlayStation 2 consoles based on twice the allocations they eventually received. When they learned that supplies were only half of what they expected, managers at stores such as Babbages, Software Etc., and Electronics Boutique were forced to inform customers that they would not receive the consoles they had reserved months in advance. Intended or not, Sony received a flood of positive publicity from stories of shoppers camping outside stores in the slim hope of finding a PlayStation 2.

The oddest story, however, dealt with Iraq. A persistent story surfaced that Iraqi leader Saddam Hussein was scouring the United States in the hope of purchasing a few thousand PlayStation 2s. News analysts immediately remembered the limitation that the Japanese government had placed on the exportation of PlayStation 2s and began speculating that Hussein might use them for launching guided missiles.* Of course, it would have been nearly impossible to find several thousand PlayStation 2s at regular retail prices. You could occasionally find them selling in toy stores in packages—finding the console, an additional controller, a memory card, and two games selling for

* I was interviewed by *NBC Nightly News* on this subject. My speculation was that if any truth lay behind this rumor, it meant that "Saddam's nephews were going to get a nice surprise under the old Ramadan tree."

\$599 was not uncommon. You could also find PlayStation 2s selling through online auctions and in classified ads for anywhere from \$600 to \$800. According to news stories, Hussein ended up purchasing several hundred PSOnes—a new and smaller configuration of the original PlayStation.

In truth, Sony's hardware shortage was not as significant as many people said. Had Sony shipped two million PlayStation 2s in October, the supplies would still have been short.

Lack of adequate software was a more lasting problem carried over from Japan. A few PlayStation 2 games stood out as fairly strong. *Madden NFL 2001* and *SSX*, both from Electronic Arts, were the stars of the launch lineup. Rockstar Games, a tiny company that might normally have gone unnoticed, had two driving games—*Midnight Club* and *Smuggler's Run*—that did fairly well; and a company called THQ, best-known for its WWF wrestling games, received fair reviews for a role-playing game called *Summoner*.

This was Sega's golden opportunity. Sony did not have enough inventory, it did not have many good games, and its console cost twice as much as Dreamcast. Beyond that, with *NFL 2K1*, Sega scored a critical hit, and *NBA 2K1* and *Shenmue* followed closely.

I think *Shenmue* did extremely well. *NBA 2K1* did very, very well. *Jet Grind Radio* was a little bit of a disappointment. We still believe it was a great game that somehow didn't catch the imagination of the gamer; but *Shenmue* hit its quota. *NBA 2K1* hit its quota. *NFL 2K1*, which was an earlier launch, clearly hit its quota.

—Peter Moore

Retailers clamored to bump up their orders of Dreamcast on the theory that disappointed shoppers would purchase the Sega console rather than head home empty-handed. As Thanksgiving rolled past, Dreamcast sales surged and it looked as if Sega had been given a reprieve.

We came out the day after Thanksgiving and had a huge day; but then the following week, U.S. retail went into the toilet. If you go back and check the news, you'll see that overall retail, and consumer electronics in particular,

really fell flat. I think the PlayStation 2 effect that we were relying upon did not work for us. We had thought that we would get a spill-over effect.

I think that we discounted what human nature really is [about], that people will hang on for as long as possible, working on the theory that they're going to get something in the second week of December. So they're hanging on to your video game dollars. What effectively happened is the PlayStation 2 lack of availability froze the marketplace within the video game sector. People were willing to wait to see what they could get their hands on or invest their dollars in different things—DVDs and other consumer electronics such as Poo-Chi.*

—Peter Moore

Sega stumbled into the new year, having fallen far short of Moore's stated goal of 5 million Dreamcasts. Even giving Dreamcasts away as a premium to SegaNet subscribers, Sega had not been able to lift its U.S. install base beyond 3 million units, and the worldwide install base was only at 6.5 million.

In January 2001, stories started circulating about executives from Microsoft and Nintendo visiting Sega to evaluate the prospect of purchasing the company. As early as December 27, the *New York Times* reported that Nintendo had entered into a discussion about purchasing Sega. Sega denied the story, but the rumors persisted. Then, in the last week of January, a small Japanese news service published a wire story claiming that Dreamcast had been discontinued. At this point, Sega admitted that while Dreamcast had not been discontinued, the manufacturing plant was no longer in operation because of inventory concerns. On January 24, Sega released a press release announcing the discontinuation of Dreamcast, and company executives Charles Bellfield and Peter Moore personally explained the situation to the press.

Sega will adopt a multi-platform or platform-agnostic role or view of the video game hardware industry. We will develop content for multiple devices from cell phones right through and including video game systems—including those from our competitors.

Secondly, Sega is confirming effective immediately a cease of the manufacture of the Sega Dreamcast system. And effective as of April 1, 2001, we

* A toy robot dog created by Sega and marketed by Tiger Electronics.

will have completed a management reorganization and a restructuring of Sega as a company to purely be focusing on a multiplatform strategy as a third-party publisher to multiple platforms.

—Charles Bellfield

It took Sega 22 months to sell 6.5 million Dreamcasts worldwide. By comparison, Sony shipped 10 million PlayStation 2s in under 15 months, and its sales kept accelerating. With Sony squeezing Dreamcast out of the market and Nintendo and Microsoft preparing to launch new consoles of their own, Sega chairman Isao Okawa pulled his company out of the hardware business.

But Sega's dark times were only beginning. Okawa was losing a personal battle with cancer. Even as he struggled to find a new direction for his company, Okawa's body was failing him and he had to check into Tokyo University Medical Hospital. In his absence, Hideki Sato, the former head of Sega's software engineering, temporarily took the helm. Though Sato bravely maintained that Okawa was recovering,* that simply was not the case. In his last days, Okawa forgave Sega's debts to him and returned all of his shares of Sega and CSK stock as a gift—in Sega's case, a \$695 million gift that would help the company survive the transition of becoming a multiplatform software manufacturer. On March 16, at 3:47 P.M., 74-year-old Isao Okawa died of congestive heart failure.

Upon learning of his friend's death, Sega cofounder David Rosen sent the following telegram:

To the Family of Mr. Isao Okawa:

I am very saddened to learn of the passing of my friend and business associate, Mr. Isao Okawa. He was a man of great vision, who dedicated his energy and his many abilities to whatever task he undertook. He always maintained a very strong sense of responsibility.

Mr. Okawa was always ready to listen and explore new ideas. He was an inspiration to the younger staff as well as management of Sega.

He was a man with charisma, who loved music and good conversation.

*I happened to meet with Sato the day that Mr. Okawa passed away, and Sato still claimed that Okawa was getting better and would soon return to the company.

My wife and I always found Okawa-san to be gracious and kind. We will miss him and retain fond memories of our past times together.

Sincerely,

David & Masako Rosen

When Sega and CSK held a special memorial service for Okawa a few months later, more than 6,000 people arrived to pay their respects to the man who had become a citizen of the world. Okawa, who started his career as an engineer before opening CSK and making the calculating investments that eventually made him a billionaire, was better known for his charitable foundations than for the companies he owned.

As one would expect, if you've met him or sat across a conference table from him, he did everything, even his passing away, in a very organized and dignified manner. Over a number of months prior to his passing, it was one of the better getting your affairs in order before you leave type situations that I've ever seen in my life.

I was privileged enough to go over two weeks ago to Japan to take part in the corporate funeral, which was attended by over 6,000 people, including Idei-san (chairman of Sony) and Kutaragi-san (president of Sony Computer Entertainment). . . . And I was the only gaijan [Caucasian] on the corporate receiving line that welcomed and said goodbye to the guests. It was an incredible affair that laid testimony to the effect that this man has had on the industry in Japan in general and in the computer services and digital entertainment world in particular.

More than 6,000 were physically present, and it was Web cast to CSK offices in other cities.

—Peter Moore

Video games, once thought to be a fad, have worked their way into the fabric of international culture. At present, Sony has shipped more than 80 million PlayStations worldwide and Nintendo has sold more than 110 million Game Boys. With every successive generation, the video game industry keeps growing.

And what of the people who built the industry? Odyssey designer Ralph Baer is retired; Nolan Bushnell, founder of Atari, is still a rogue entrepreneur looking for his next big Chuck E. Cheese; Howard Lincoln, who rose from corporate counsel to chairman of Nintendo, celebrated his sixtieth birthday by retiring from Nintendo to become the CEO of the Seattle Mariners; Vice President Al Gore selected Senator Joseph Lieberman as his running mate in his bid for the presidency; and Trip Hawkins, unwilling to give up after the demise of his hardware system, converted 3DO into a highly successful software publisher. On January 8, 2002, 55-year-old Minoru Arakawa shocked the industry by announcing his decision to retire effective immediately. At one time, Arakawa looked like the heir apparent to take over the company when Nintendo Co., Ltd. president Hiroshi Yamauchi retired. But Yoko Arakawa, Minoru's wife and Yamauchi's daughter, did not want to return to Japan.

That's the End?

In many ways, this book has become the project that never ends. I had hoped to finish the book in 1995, then 1996. In 2000, I finally published the damned thing myself. How could I have known that the next six months would become some of the most eventful months in the history of gaming—Midway Games finally abandoned the floundering coin-op video game business, Bill Gates introduced Xbox, Nintendo unveiled GameCube and launched Game Boy Advance, PlayStation 2 launched in the United States, Sega discontinued Dreamcast, and Isao Okawa passed away.

I am grateful that Prima Publishing has bought this book, but the deadline my editors set came up before the early November launches of GameCube and Xbox. And bigger battles are brewing. A recent study published in England predicts that the interactive entertainment market will double in size and could be as big as \$49 billion worldwide.

To put it another way, the game never ends.

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Steven L. Kent, a lifelong gamer since the debut of *Pong*, writes weekly columns about electronic entertainment for the *Los Angeles Times* syndicate, MSNBC, and the *Japan Times*. His articles have appeared in *USA Today*, *Rolling Stone*, *RePlay*, *Wired*, *Next Generation*, and numerous other publications. Mr. Kent has also appeared on CNN, the *CBS Morning Show*, and the *NBC Nightly News*. He lives with his wife and two children in Bothell, Washington.

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\$19.99 USA/ \$23.99 CAN

ISBN 978-0-761-53643-7



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