



The Nintendo NES Legacy



By Chris Hoffman

The Nintendo NES Legacy

When I think back to my early childhood, I remember playing with a variety of toys. G.I. Joes™, Legos™, Nerf™ guns, and Nintendo™ video games were some of my favorites. However, when comparing all of my fondest possessions, Nintendo was in a class all its own. Nintendo™ was unique; it was an experience.

From sitting downstairs in my basement with my face plastered to the TV screen content for hours to slamming the controller on the ground, furious the game froze on the last level... Nintendo was an experience. That sense of accomplishment I felt after finishing, I mean beating, a video game; when my dad would ask, “What’d you do today?” and I would respond with all sincerity and pride, “I beat Megaman!”... Nintendo was an experience. Even watching “Game Pros” on Friday mornings with my older brother Mike to find out how to get past levels and bosses before he sadly had to go catch



the bus for school while I, however, got to go downstairs with my newly acquired information and start my day... Nintendo was an experience... but it wasn't just mine, it wasn't just my family's, it wasn't just my school's or my state's, it was the world's.

EVOLUTION

Nintendo, unlike popular belief, did not spring up out of nowhere. The company has deep gaming roots dating back to the 19th century. At that time, a man named Fusajiro Yamauchi from Kyoto, Japan, founded Nintendo Koppai and the company began producing and selling playing cards called Hanafunda.

The company prospered. In 1907 Nintendo Koppai became the first company to successfully manufacture and sell Western Style playing cards in Japan. In 1929, founder and President Fusajiro Yamauchi retired the company to his son-in-law Sekiryō Kaneda. Sekiryō, surname Yamauchi, became the second president of the largest playing card company in Japan, Nintendo Koppai.

In 1949 Hiroshi Yamauchi, Sekiryō's grandson, became president of the company at the age of five. His first major success came from a deal with the American company Disney in 1959. Disney allowed Hiroshi to produce playing cards with Disney™ characters printed on them. Nintendo became corporate in 1962 when it listed stock in the Osaka and Kyoto Stock Exchanges. The current name, Nintendo Co. Ltd., was established in 1963, the same time that the company decided to start producing games and toys instead of playing cards.

New employee Gunpei Yokoi developed a new series of toys called *Beam Guns*. This was revolutionary for Nintendo in that it incorporated electric technology in their products. The light producing toy was introduced Christmas season, 1970. Nintendo went on to produce



more great toys like the *Love-Tester* and a home baseball throwing device. Work being done with solar cells at Sharp gave Nintendo new ideas.

Gunpei hired Sharp engineer Masayuki Uemura and they began developing a new generation of *Beam Guns*. The solar cells were able to be used as sensors to detect light coming from, for example a *Beam Gun*. After heavy testing with light guns and targets mounted with solar cells, Nintendo's *Beam Gun Games* hit the market and sold over a

million copies in 1972. While Nintendo was busy manufacturing *Beam Guns* and *Love-Testers*, another idea was being developed in the US (<http://www.nintendoland.com>).

In 1951 television engineer Ralph Baer approached his employer, Loral Electronics, with the idea of an interactive television... only to be rejected. One year and the same idea later at the University of Cambridge, A.S. Douglas developed *OXO*, a graphical version of tic-tac-toe, in order to demonstrate his thesis on human-computer interaction. The game was played on an EDSAC computer that used a cathode ray tube for a visual display. *OXO* is the first known graphical game to run on a computer. However, it was not until 1958 when William Higinbotham created a simple *Pong* like game called *Tennis For Two* that video games as we know it came into existence. *Tennis For Two* was played at the Brookhaven National Library on an Oscilloscope computer using two bulky controllers until being dismantled in 1960.

Inventors.com talks about a similar project that going on:

In 1961, a group of students at MIT, including Steve Russell, programmed a game called *Spacewar* on the then-new DEC PDP-1. The game pitted two human players against each other, each controlling a space ship capable of firing missiles. A black hole in the center created a large gravitational field and another source of hazard. This game was soon distributed with new DEC computers and traded throughout primitive cyberspace. Presented at the MIT Science Open House in 1962, it was the first widely available and influential game.

A coin-operated arcade version of *Spacewar* called *Computer Space* was created in 1971 by Nolan Bushnell and Ted Dabney. The game was bought and manufactured by Nutting Associates, only selling a disappointing 1,500 copies because of its playing

difficulty. Bushnell knew the potential of the video game market and felt he wasn't making enough money licensing his games to other manufacturers. He opened his own company, Atari, in 1972 and saw immediate success with his arcade game *Pong* (<http://inventors.about.com/>).

Impressed by the sales of electronic video gaming systems in the US that allowed players to interact with simple games on their TV, Hiroshi negotiated a license with a company called Magnavox™. In 1975, Nintendo began manufacturing and selling Magnavox's video game console Odyssey in Japan. Nintendo had officially entered the video game market.

Shortly after, Nintendo teamed up with Mitsubishi Electrics and started developing its own gaming systems. From arcade games to hand held LCD games, Nintendo found its niche in the video game market. It wasn't until the many technological improvements that Hiroshi decided to develop a new console more advanced and affordable than all others (<http://www.nintendoland.com>).

PRODUCTION

With the opening of a new plant in Uji, Japan and Nintendo of America Inc. in Seattle, Washington, Nintendo began working on its next project. The next console had to be better than the color TV game systems sold before. The new system had to play many games, each individually stored on cartridges. This idea wasn't revolutionary; competitors had already released or were developing similar systems. What was going to separate Nintendo's system from the rest was its price and power.

President Yamauchi set a selling price goal of around \$75.00. Chief designer Uemura wanted to use a 16-bit CPU (computer processing unit) to get the power

Yamauchi was aiming for. However, the cost would have been too high, and he settled with an 8-bit CPU. Attempting to build a fast yet inexpensive console, Uemura chose the 6502 CPU. But the 6502 CPU could not handle all of the graphical information that needed to be processed, and an extra piece of hardware was needed.

The console needed a PPU (picture processing unit) to cope with all of the graphical information. In order to keep console prices low, Nintendo met with semiconductor companies with this offer: \$15.00 a chip (which was absurdly low at the time) but a 3,000,000 chip order. Richo, a company whose semiconductor department was projectless, accepted Nintendo's offer and work continued.

Plans to include a keyboard, a modem, and a disk drive were rejected in order to keep prices down. However, expensive circuitry was used along with a conductor that could send and receive an unmodified signal to and from the CPU. This proved beneficial because the NES was able to link up to other accessories plugged into the connector such as keyboards and modems. Nintendo™ invested countless hours in the production of the NES, and they paid off (<http://www.nintendoland.com>).

CONSUMPTION & REGULATION

1983 was the year Nintendo made history. Released under the name *Famicom* (Family Computer) in Japan on July 15, the console sold for roughly \$100.00, still half the price of its competitors. “The Famicom was slow to gather momentum: during its first year, many



criticized the system as unreliable, prone to programming errors and rampant freezing. Following a product recall and a reissue with a new motherboard, however, the

Famicom's popularity soared, becoming the best selling gaming console in Japan by the end of 1984 (<http://en.wikipedia.org/wiki/NES>). Releasing it in the US would prove difficult as 1984 was a rough year for the video game industry.

Third party developers started releasing their own game cartridges to be played on the various video game systems. People grew weary as these games were mediocre at best, and almost inadvertently ruined the video game industry. Nintendo fought back,



acquiring software licensing programs and their “Seal of Approval” which was only given to games that met there quality requirements. “In reality, the seal only meant that the developer had paid the license fee; it had nothing to do

with the quality of the game” (<http://en.wikipedia.org/wiki/NES>). With Nintendo's positive reputation, Yamauchi new if he could release *Famicom* in the US he would be in control of the market.

Nintendo continued to search for retailers to sell their product. In 1985 Nintendo of America Ltd. President Mr. Arakawa found a retailer in New York. The console was released under the name NES (Nintendo Entertainment System) and by 1987 was the number one selling toy sold in the US and Europe.

At that time, figures from Nintendo of America say that 4.1 million American homes bought some sort of video game system and 3 million of these were Nintendo's. *Zelda* became the first stand alone game to sell over 1 million copies. Total sales that year were \$430 million. Nintendo had to sue Blockbuster for photocopying NES manuals for use with rented games. In 1988, Apple President Michael Spindel was

questioned with what he thought Apple's biggest threat was, he answered, "Nintendo!" Testament to Nintendo's ever growing popularity.

By 1988 1/3 of US and Japanese homes owned an NES and their fan base was large enough to release "Nintendo Power", a magazine dedicated to everything Nintendo. Atari, a competing video game company, actually tried suing Nintendo of monopolizing the industry (which they were cleared of in 1993).

Who could blame Atari? In 1989 Nintendo released Game Boy, *Super Mario Brothers 3*, and announced their plans for Super NES. *Super Mario Brothers 3* sold over 18 million copies and grossed \$500 million, making the highest selling stand alone video game ever, Nintendo Power was the largest paid subscription magazine in its age category, and Nintendo's sales reached \$2.3 billion (<http://www.nintendoland.com>). How did they do so well?

REPRESENTATION

Nintendo's popularity grew exponentially. Every product they sold advertised another one of their products. "Nintendo Power" magazine gave game reviews on their own games, introduced their new ones, and advertised their merchandise. Game cartridges came with magazine subscription forms and advertisements for



other games. Nintendo even sold their own official Nintendo Cleaning Kit. Then there was the media.

TV and radio commercials advertised the latest games and where to get them. David Sheff helps explain:

Television cartoon shows based on Nintendo games and characters were watched by more kids than any other TV programs. Other cartoon shows (including The Simpsons, Teenage Mutant Ninja Turtles, Chip 'N Dale Rescue Rangers, and Duck Tales) became Nintendo Games. (Game Over 8)

Even Hollywood helped Nintendo reach the masses.

The 1989 Universal Studios movie “The Wizard” was about a kid who competed in the Nintendo World Championship and won. The final game played in the tournament was Super Mario Brothers 3 (which was not out at the time) and movie goers got to see previews of the game in action. Not only did Nintendo get to advertise their products on the big screen, Universal Studios also had to pay Nintendo for the rights to use its characters. The popularity of the NES eventually made Nintendo Japan’s most successful company by 1990 (<http://www.nintendoland.com>).

IDENTITY

Who were these people experiencing Nintendo? Who was this new generation of “Gamers” growing up in a world being vastly altered by technology? These people, these “Gamers”, could not be characterized specifically by their age, race, sex, or even class. They didn’t wear the same clothes or their hair in certain ways; they didn’t hang out in the same place or even with each other. None the less, they were similar in one important way, Nintendo.

To experience Nintendo was to live Nintendo, and just the opposite. You had to go to school prepared to talk about any of the hundreds of games and willing to put your homework on hold when you got home and pushed the power button. It meant waking up early on Saturday mornings to watch *Super Mario Brothers* before spending the whole

day playing it. It meant reading “Nintendo Power” in order to find out what was going on in the world.

The world of Nintendo was very accepting. It did not care how wealthy or popular you were, only that you cared for it. Nintendo brought people together through similar interests, not through similar demographics. It was through Nintendo that much was born.

REVOLUTION

NES, as much fun as it was, was a celebration of democratized technology. Families were much more likely to own a NES than a desktop computer. Not only were they much less expensive, but to the mainstream public they served a definite purpose while desktop computers did not. For the first time, young people were immersed in and actively using new technology as Sheff research shows:

A study by Nielsen Media Research, the company that monitors television viewing, showed that within a particular age group more kids were playing Nintendo than were watching the major children’s TV network... Kids already spent more time in electronic environments (TV, radio, records) than they did in school or talking with friends or parents. Some of them were spending an additional two hours a day on Nintendo. (Game Over 8)

There exists some sort of computer literacy gap between people who grew up before the eighties, and those who grew up in and after the eighties. Perhaps some of that exists due to the lack of intimate experience people from earlier generations had with computer systems. Sheff states:

In the last part of the twentieth century, leaps in technology ushered in a new era in which children and a substantial part of the culture as a whole would be more influenced by interactive electronic media – in their simplest forms, video games – than by television, which had defined the previous generation. (Game Over 8)

As archaic as the NES may seem when compared to today's computers, something about the interaction with video games gave people a better understanding of technology. Whether that was an understanding of how technology works, or an understanding of what technology can do for us, it gave us familiarity.

In the end, there is no denying that Nintendo had an affect on culture, economically to say the least. Nintendo set the precedent on which all other video gaming systems should strive and ushered in a new era of "technology for the people". I am proud to say that I am one of those people and that I experienced Nintendo.

Works Cited

“The History of the Nintendo Entertainment System or Famicom”. Nintendoland.com. (10 October 2005) <<http://www.nintendoland.com/home.htm>>

“History of Nintendo – Gunpei Yokoi”. Inventors.com. (10 October 2005) <<http://inventors.about.com/od/nstartinventions/a/Nintendo.htm>>

“Computer and Video Game History”. Inventors.com. (10 October 2005) <http://inventors.about.com/library/inventors/blcomputer_videogames.htm>

“Nintendo Entertainment System”. Wikipedia.com. (11 October 2005) <<http://en.wikipedia.org/wiki/NES>>

Sheff, David. Game Over. Random House Value Publishing, 1997.