A History of Video Game Consoles

By

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Introduction

Today video games are a multibillion dollar industry. They are in practically all American households. They are a major driving force in electronic innovation and development. Though, you would hardly guess this from their modest beginning. The first video games were played on mainframe computers in the 1950s through the 1960s (Winter, n.d.). Arcade games would be the first glimpse for the general public of video games. Magnavox would produce the first home video game console featuring the popular arcade game Pong for the 1972 Christmas Season, released as Tele-Games Pong (Ellis, n.d.).

The First Generation

Magnavox Odyssey

Rushed into production the original game did not even have a microprocessor. Games were selected by using toggle switches. At first sales were poor because people mistakenly believed you needed a Magnavox TV to play the game (GameSpy, n.d., para. 11). By 1975 annual sales had reached 300,000 units (Gamester81, 2012). Other manufacturers copied Pong and began producing their own game consoles, which promptly got them sued for copyright infringement (Barton, & Loguidice, n.d.).

The Second Generation

Atari 2600

Atari released the 2600 in 1977. Although not the first, the Atari 2600 popularized the use of a microprocessor and game cartridges in video game consoles. The original device had an 8-bit 1.19MHz 6507 microprocessor ("The Atari", n.d.), two joy sticks, a paddle controller, and two game cartridges. Combat and Pac Man were included with the console. In 2007 the Atari 2600 was inducted into the National Toy Hall of Fame ("National Toy", n.d.). International Gaming Network called the Atari 2600 "the console that our entire industry is built upon" (IGN, n.d.). Gamers are still producing new games for the Atari 2600 today.

The Third Generation

Nintendo Entertainment System

The Nintendo Entertainment System took the world by surprise when it was released in 1985. Many had no hope for the video game industry a couple years before because of the North American Video Game Crash of 1983. To date, millions of systems have been sold, making it one of the most popular systems to have been released. It has an 8 bit processor that runs at 1.79 MHz (Arnol-Martin, 2011). The controllers are boxy with a limited amount of buttons. Popular games for the system include: Super Mario Bros., Legend of Zelda, Final Fantasy, Metal Gear, and Metroid.

The Fourth Generation

Sega Genesis

The Sega Genesis was released in American in 1989. Although it never became quite as popular as the Super Nintendo released later, it is highly revered even now by many as being one of the best video game consoles. The system has a 16 bit processor that runs at 7.61 MHz (Arnol-Martin, 2011), which gives it the ability to produce detailed graphics that were unseen in previous systems. Games continued to be released on cartridges. And saving games to the cartridges was typical, unlike some NES games. Popular games for the Sega Genesis include: Sonic: The Hedgehog, Aladdin, and NBA Jam.

Super Nintendo Entertainment System

Many people were very excited to hear that another Nintendo system was coming out. Because of the popularity of the NES, the SNES was popular before it was even released. When it was released in America in 1991, people were shocked when they witnessed its superior graphics. The system has a 16 bit processor that runs at 3.58 MHz (Arnol-Martin, 2011), a marked improvement over the original NES. Also, saving games onto the cartridge became typical with the release of the SNES. The controller incorporated extra buttons to control its games (X, Y, and the L and R buttons.) Popular games include: Super Mario World, Donkey Kong Country, Mario Kart, and Star Fox.

The Fifth Generation

PlayStation

The Sony Playstation was released in the United States in 1995. It took the world by surprise as its graphics were superior to previous consoles. A big change that came in this generation was the switch from cartridge games to CDs. With this, memory packs became common, as one cannot save their game onto a disc. The PlayStation processor runs at 33.9 MHz (Arnol-Martin, 2011), which is a big improvement over the previous generations. Many games incorporated 3D graphics. Popular games

for the system were: Grand Turismo, Crash Bandicoot, Metal Gear Solid, and Tomb Raider. Each of these games laid the foundation for what video games would one day become.

Nintendo 64

The Nintendo 64 was a huge improvement over previous Nintendo systems. Although the Super Nintendo showed off its 3D capabilities with Star Fox, Nintendo had not released many 3D games. This changed when Super Mario 64 was released. The "64" in Nintendo 64 comes from the fact that the system has a 64 bit processor running at 93.75 MHz (Arnol-Martin, 2011). Although the PlayStation had adopted the CD for its games, the Nintendo continued to use cartridges. Because of this, games could be saved without the need for a memory pack (which was made for the Nintendo 64 as well, but not used by many games). Popular games for the system were: Super Mario 64, GoldenEye 007, and Mario Kart 64.

The Sixth Generation

PlayStation 2

The PlayStation 2 took the original PlayStation to the next level. The PS2 gained a large fan base, as the system had superior graphics, many varied and solid games, and allowed for multiplayer gaming via the Internet. The games are on CDs or DVDs, while a memory pack is used for storing saved games. The system could play both PlayStation and PlayStation 2 games, and has a 128 bit processor that runs at 294 MHz (Arnol-Martin, 2011). Popular games include: Metal Gear Solid 2, Metal Gear Solid 3, Final Fantasy X, and Grand Theft Auto 3.

Xbox

It was unexpected for many when Microsoft released their Xbox system in 2001. It ended up heavily competing with the other systems of its generation, and was largely successful. Games are on CDs and DVDs like the PlayStation 2. Also, like the PS2, online gaming was a focus of the Xbox. The processor of the system runs at a whopping 733 MHz (Arnol-Martin, 2011). That is not much by today's standards, but it was a lot just ten years ago. Popular games for the system include: Halo 2, Tom Clancy's Splinter Cell, and Fable.

The Seventh Generation

Wii

The Nintendo Wii completely changed the way we interact with our video game consoles when it was released in 2006. The Wii's controllers sense movement of the controller via a sensor bar. In addition to button pressing, movement in a game is done by moving the controller in various ways such as shaking, pointing at the screen, and steering. Because of these new controls, games began to incorporate more lifelike movements into their controls. Also, the graphics were cutting-edge when the Wii was released. However, it's max resolution is 480p (Block, 2006), making the other systems of the generation superior in graphics. The CPU is an IBM PowerPC (Arnol-Martin, 2011). Popular games for the system include: Super Mario Galaxy, Wii Sports, and The Legend of Zelda: Skyward Sword.

Xbox 360

The Xbox 360 was released in 2005. Its graphics are much more detailed compared to the original Xbox. Games are on dual-layer DVDs, which people can play with each other on Xbox Live – for a price. The controllers for the system are wireless. Some controllers mimic the functionality of a Wii controller. The processor's three cores each run at 3.2GHz (Arnol-Martin, 2011). Popular games for the system include: Kinect Adventures, Call of Duty: Black Ops, and Halo 3.

PlayStation 3

The PlayStation 3 was released in America in 2006. Its graphics are far superior to any system of the previous generations. Game controllers are generally wireless. PlayStation Network enables free online multiplayer gaming as well as a store where you can purchase and download games. The games are on Blu-Ray Discs. Also, the system has PlayStation Move, which controls in a similar way as the Wii. Its processor has 7 cores that each runs at 3.2 GHz (Arnol-Martin, 2011), a huge leap from the PS2. Popular games for the system include: Gran Turismo 5, God of War 3, Call of Duty: Modern Warfare 2, and Uncharted 3.

<u>Overview of the group process</u>

Participants:
Gregory (Greg) Shehan – Planning meeting recorder, video script

Terry Amick – Video production, video posting, narration.

Gerald Long – Research writer

James (Jimmy) Schell – creating, editing and finalizing documentation

How we functioned as a team:

Shortly after the above students were assigned to Team 2, they contacted each other via course mail. By comparing schedules Thursday 7pm EST was chosen for blackboard conference meetings. Attendance by all members was good. Meetings lasted from 45min to 4 Hours. All members acted in a professional manner. Each member was allowed to express his opinion and contributed to the project. During meetings assignments were studied and discussed. Each member was assigned a part of the project. Course mail and Gmail were used to share documents. A revolving member was chosen to compile and submit each assignment.

Video Script

Welcome to Team Two's video presentation for IST 110. In this video we will briefly discuss what a video game console is, how they work, who is most likely to play one, controversies and a description of systems from each console generation.

So, what is a video game console? A video game console is a computer.
Early systems although basic in design by today's standards were very high tech at the time
 The console will transfer a video signal to a TV or monitor so that the user can play a game. Games are normally stored on cartridges, CD's or DVD's and the console reads this media so the user can play the game. Users can interact with the game by using handheld control devices; most of these devices are proprietary designs that specifically match the systems and the games. Video game consoles are popular amongst a diverse demographic. Although at one time is was mostly only young males that played them
At one time video games and the consoles were popular amongst only young males but eventually the demographic has changed as the gaming population gets older and consoles become a standard piece of tech in everyone's household. You can now find gamers young and old, male and female, enjoying games and the content that is delivered on the new systems.
As the rise the popularity and diversity of video games has grown there have been many controversies that have arisen throughout the years including concerns about gaming addiction, hindrances to childhood social development and violent game content.   Now that we have given a brief description of a video game console, let's take a look at each generation of consoles up until the present and also take a peek into the future of gaming consoles.

Generation 1 included systems such as the Magnavox Odyssey and Atari Tele Games "Pong". The Magnavox Odyssey was released in 1972 and it is considered the first gaming console offered to the public. It was a battery-powered system that used printed circuit boards for game data. It also included transparent plastic TV screen overlays for game play. In 1975, due to the popularity of the arcade game Pong, Atari released a home version. Unfortunately, no other games could be played since it offered only Pong.

Generation 2 included systems such as the Atari 2600 and Mattel's Intellivision. These consoles used cartridges for game content that allowed the user to play different games on the system. The Atari 2600 contained a 1.19 MHz CPU that is not very impressive by today's standards. The popular games out at the time were Pac-Man, Pitfall and Missile Command. Many kids enjoyed playing their favorite arcade games at home.

Generation 3 included the Nintendo Entertainment System or NES for short. The NES contained an 8 bit processor running at 1.79 MHz which was a nice step up from Generation 2. The NES brought an end to the North American Video Game Crash of 1983. Many people didn't think the video game console could survive but the NES revived the market. Like its predecessors, games were released on cartridges. The popular games for the NES included Super Mario Brothers, Tetris and The Legend of Zelda.

Generation 4 included systems such as the Super Nintendo Entertainment System and Sega Genesis. The Super Nintendo contained a 16 bit processor running at 3.58 MHz. and the Sega Genesis contained a 16 bit process running at 7.61 MHz. The Super Nintendo was the first game to use the left and right buttons. Popular games for the Super Nintendo were Super Mario World, Donkey Kong and Super Mario Kart. Popular games for the Sega Genesis include Sonic the Hedgehog, Aladdin and NBA Jam.

Generation 5 included systems such as Sony PlayStation and Nintendo 64. The Sony PlayStation contained a 32 bit processor running at 33.9 MHz and the Nintendo 64 contained a 64 bit processor running at 93.75 MHz. Generation 5 consoles revolutionized video games by using 3d graphics. And introduced CD based

games. The CD could store more game data. Consoles allowed the use of memory cards that enabled the user to save multiple games. Popular games for the Sony PlayStation were Gran Turismo, crash bandicoot metal gear solid and Tomb Raider. Popular games for the Nintendo 64 were Super Mario 64, Mario Kart 64 and GoldenEye 007.

Generation 6 included systems such as Sony PlayStation 2 and Microsoft Xbox.. PlayStation 2 contained a custom 128 bit processor called the "Emotion Engine" The Xbox Intel Pentium 3 Custom Hybrid The PlayStation 2 introduced DVD to deliver game content. The DVD could store an even greater amount of data than a CD and both consoles contained hard drives for storage.

Generation 7 included systems such as Microsoft's Xbox 360, Sony's PlayStation 3 and Nintendo's Wii. The Nintendo Wii and PlayStation 3 introduced motion sensitive controllers, although this technology really took off with the Wii and has become a staple of its gameplay. The PlayStation 3 is the most advanced system of this generation. It introduced Blu-Ray reader, blue tooth motion detection, Wi-Fi and has a Linux-based processor.

The sky is the limit when it comes to the future of video game consoles. Due to the popularity of games, we may see companies such as Apple and Google jump into the console market. Consoles are becoming more than gaming machines; they are becoming an integral part of our home entertainment. There are a few concerns such as mobile gaming, which can threaten market share and also new game IP's need to be developed to keep gamers interested.   These are good times to be a gamer and it's exciting to see how the systems have evolved over the years and the promising future for consoles and games in general.

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