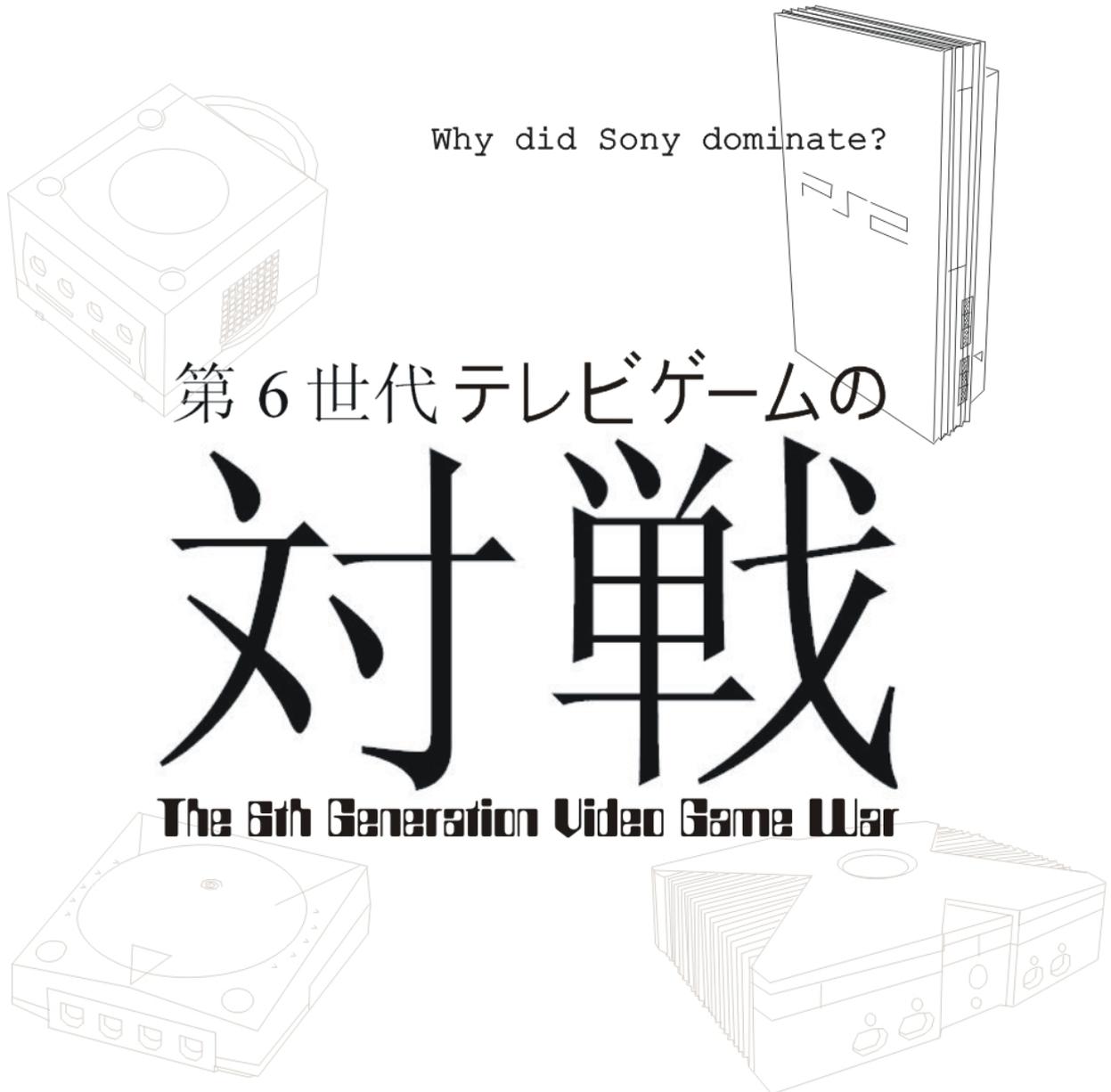




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Japanese: Level 3 - B. A. Course



Why did Sony dominate?

第6世代テレビゲームの

対戦

The 6th Generation Video Game War

Abstract

Between the years 1998 and 2008 four contenders battled for the home video game industry's 6th generation. First out were SEGA with their Dreamcast, followed by Sony's PlayStation 2, Nintendo's GameCube and Microsoft's Xbox. Pretty soon the PlayStation 2 executed their first opponent from SEGA and after that it was practically a solo race. What did Sony do to control two thirds of the home video console market? And what did the others do wrong?

Keywords: SEGA Dreamcast, Sony PlayStation 2, Nintendo GameCube, Microsoft Xbox, sixth generation of video games, video game wars

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1 Cause

“The worldwide video game industry, with revenues of \$24.5 billion last year, overtook movie box-office receipts, and sales are expected to soar to \$55 billion by 2008, according to *PriceWaterhouseCoopers*” (Ronald Grover 2005). The average player in USA was in 2000, 28 years old, 43 % were women and 3 out of 5 Americans play video games according to a poll made by *The Digital Software Association* (Choquet 2002, 260). Even so it is still ignored in most cultural aspects in our society, only slowly changing to be more accepted as not just children’s play.

Many of Sony’s executives thought that the first PlayStation console only would be a side trip in their business but it became Sony’s biggest product of the 90’s. When they had sold 50 million units, the PS1 stood for 40 % of Sony Electronics profits (Kent 2001, 560); in the end it sold over 100 million. PlayStation 2 sold even better than its little brother and is in this moment of writing just one million from being the most sold video game ever which currently is held by Nintendo’s original *Game Boy* that sold almost 120 million units. The PS2 is one of Japan’s most important exports in all times and I hope my results may help companies who intend to release new hardware in the future.

1.1 Questions

- What made the PlayStation 2 so successful?
- What did the PlayStation 2 have that the others did not?

2 Method

It is still very hard to get real figures and numbers from the four companies behind these consoles. All four have been contacted in Sweden, Europe, USA and Japan without very much response. Thanks goes out to BRIO the Swedish distributor of Dreamcast that let me go through all of their left material.

The sales figures in this paper has been gathered from various sources and then divided by the number of resources to get an as accurate amount as possible. They are not precise but probably close to. You will also have to consider the fact that some companies report how many units they sell and some how many units they have shipped. Due to this I have chosen to not put down the actual number of sold units in the past generations, it is up to the reader to vision that information from the graphs.

There are of course plenty of reasons why a console succeeds or not. I will concentrate on three different angels. Engineering, what was it in the hardware that appealed to the customers? Marketing, how did they get the customers to buy it? And last but not least, finances. I have tried to review as much information about the contenders as possible from printed books, academic papers, magazines and Internet resources but there is simply too much and too little time to have discovered it all.

The survey has been published on the Internet for about five weeks. It has been linked to from different sites and forums, mainly about video games. Mostly Swedes and people that play games frequently have presumably been answering it. The corpus is approximately 200-300 people.

3 Introduction

3.1 What is a winner?

According to The New Oxford Dictionary of English a winner is “a person or thing that wins something: a Nobel Prize winner”. Furthermore the book states: “a thing that is a success or is likely to be successful”. In this paper the latter form suits best. In other words the video game console that has the largest amount of the market (i.e. the one who sold most consoles). A winner can of course be decided in another way too but for these companies the highest percent of the market share is usually most important. It may also be possible that there is more than one winner in a console war but as you will see in the previous generations there is almost always one that is entirely superior.

3.2 Recent winners

To understand who have had control over the video game industry in the past years, here are all the generations from the beginning. Video game historians sometimes use different names on the generations, I've decided to use the one found at wikipedia.org even though mine has some dissimilarities. For example I decided to put the *Philips CD-i* in the 5th generation and not in the 4th. I also pushed Nintendo's first video game down from 2nd generation to the 1st even if it was released when the 2nd generation had begun it was as primitive as those in the first. Contenders only include home based video games, not home computers or handheld systems even though they also competed at the same time.

3.2.1 1st generation 1972-1976¹ (Winner: Atari)

The first² home videogame was released in 1972, it was invented by the television engineer Ralph Bear and he had been thinking of these ideas since the early 50's. The name of the console was Magnavox *Odyssey*, Magnavox was then a major consumer and defense electronics company and made among many other things, televisions. The console had six different unplug-able games but no additional games were ever released (Burnham 2001, 79). It was no success.

In 1975 Atari together with Sears started to copy especially the tennis game from Bear's Magnavox and made consoles without unplug-able games (i.e. Atari *Pong*, Sears *Tele-Games Pong* etc.). A year later Coleco, Radofin, APF, RCA, Epoch and roughly 60 other manufacturers also made almost identical videogame consoles in numerous versions and variants. Most of the companies were sued and either lost to Magnavox who hold the patent or settled in court and paid royalties. Even Magnavox let go of the idea with changeable games and made their own *ping pong* consoles. The, in the west still unknown company Nintendo licensed Magnavox and made their first video game in 1977 called *TV Game 6* (Kohler 2005, 30-31). The first generation of video games was here and with it the first video game war. The sales figures are almost impossible to get correct but the winner was Atari, the others just copied them, not Magnavox. And it was Atari that first had put *Pong* in the video arcades and then released it for home use. Their brand was first class in arcade games and now also in home videogames.

3.2.2 2nd generation 1976-1983 (Winner: Atari)

The company Fairchild who invented the first integrated circuit started the 2nd generation with their *Channel F*, the first microchip based console. It wasn't a big hit but a year later Atari released their *Video Computer System* also known as *Atari 2600* and changed video gaming industry forever. Philips made the *Videopac G7000*, the sequel to the first console ever made³.

Other strong contenders were the powerful Mattel *Intellivision*, Coleco's *Colecovision* and SEGA who entered the industry with their *SG-1000*. There were now over 20 different companies battling for the consumers' money. Other challengers were Milton Bradley's⁴ oddly vector-based *Vectrex*, Vtech

¹ The generations' lifespan should not be taken too seriously, many systems lived for much longer time and of course the generations crossed over each other. According to this system of measuring, an era is over when the first next generation console is released.

² Meaning the first home based video game commercially released; not arcade or computer games.

³ The Philips *Videopac G7000* was called *Magnavox Odyssey*² in the USA.

⁴ The Vectrex was first licensed and distributed by General Consumer Electric (GCE) but Milton Bradley soon purchased the company.

Creativision, Bally *Astrocade*, Interton *VC 4000* and many more. After the North American video game crash⁵ most of these corporations either went bankrupt or gave up their video game divisions. Atari also released the failure *5200* that could not outlast its predecessor (Forster 2005, 26). The VCS sold over 30 million units under its lifespan and was indisputable the king during the second generation.

3.2.3 3rd generation 1983-1987 (Winner: Nintendo)

In the third generation the Japanese consoles started to take control over the video game industry and have never lost it since that. Almost only Nintendo, SEGA and the now much smaller Atari were left on the console market when it started to swing up again, mostly due to the *Nintendo Entertainment System* (NES), known as *Famicom* (Family Computer) in Japan. Atari's *7800* was doomed from the beginning and SEGA's *Master System* (SMS) range including the *Mark III*⁶ was too late even though it was more powerful than the NES. Nintendo had gained control over the world's home video gamers with over 80 % of the market (Carroll 2005). Other contenders were Amstrad's *GX4000*, a console version of their computer *CPC 464* and the Epoch *Super Cassettevision*, these were both great failures.

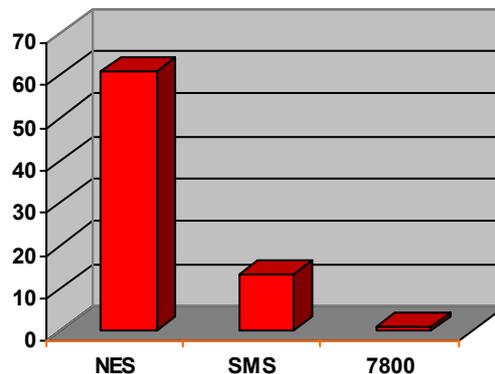


Figure 1: 3rd generation sales in millions

⁵ The North American video game crash of 1983/84 was an effect of too many different consoles and poor quality games that nobody wanted.

⁶ Mark III was only released in Japan but the Master System was released worldwide including Japan.

3.2.4 4th generation 1987-1993 (Winner: Nintendo)

With Atari gone, the 4th generation was totally dominated by the Japanese with two new players in the corporations NEC and SNK. SNK's *Neo Geo AES* (Advanced Entertainment System) was an arcade system⁷ for home use while NEC's *PC Engine* (PCE) was a series of card- and CD-based consoles with minor sales in America and almost none in Europe.

This was the first and last time SEGA was close to conquer the title of the best selling console, they released their *Mega Drive* (MD) two years before the *Super Nintendo* (SNES) and sold very well, especially in the states the first years. Nintendo later overtook the lead and stood at last as the winner again.

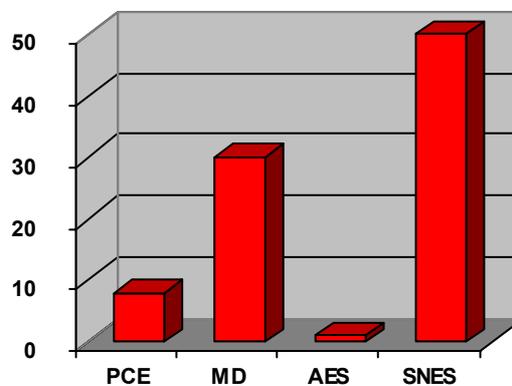


Figure 2: 4th generation sales in millions

3.2.5 5th generation 1993-1998 (Winner: Sony)

Out in the fifth generation sprung a wide variety of consoles from companies, new and old to the games industry. Nintendo and SEGA were still around with their *Nintendo 64* (N64) respectively *Saturn*. NEC had a last go with their big flop *PC-FX*, Atari returned with their *Jaguar* and the *3DO Interactive Multiplayer* tried to set a gaming standard in the industry. Apple/Bandai's *Pippin* and Amiga's *CD32* made their first real attempt to enter the industry. And then there was of course Sony. Their engineer Ken Kutaragi had made the sound chip to the *Super Nintendo* and when Nintendo dropped out from their cooperation on the additional SNES CD-ROM he got the permission to continue the research within Sony and

⁷ The system was almost exactly the same as the Neo Geo MVS (Multi Video System) used by SNK in the arcade halls, the only major difference was the size of the cartridges.

they finally released their very own *PlayStation* (PS1) instead (Kline 2003, 152). Other contenders this generation were Fujitsu's console *FM Towns Marty* and the multimedia machine Philips *CD-i* but Sony's machine was quickly outstanding and Nintendo had all by themselves created a superior enemy.

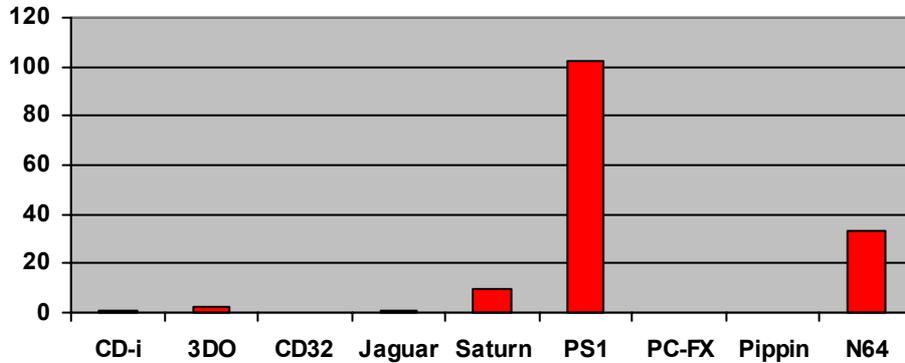


Figure 3: 5th generation sales in millions

3.2.6 6th generation 1998-2005 (Winner: Sony)

After five generations all the initial contenders except Nintendo were replaced and the software and hardware were completely different. The only contenders left were SEGA's *Dreamcast*, Sony's *PlayStation 2*, Nintendo's *GameCube* and Microsoft's *Xbox*. With exceptions for Samsung/Toshiba's failed 128-bit DVD-project *Nuon* that only got 8 games and the mysterious *Phantom* from Infinium Labs that charged them losses for several millions but in the end never got released. As seen in the figure down below Sony's machine was the outstanding one, this paper is now trying to explain why. Those four consoles will hence be referred to as DC, PS2, GC and XB in this paper.

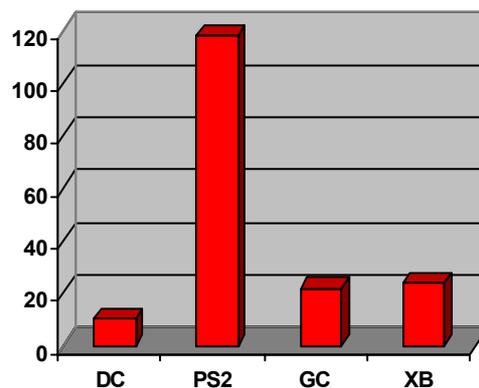


Figure 4: 6th generation sales in millions

3.2.7 7th generation 2005-present

In the writing moment Nintendo's console *Wii* is leading with 43.6 % of the market, the *Xbox 360* have 36.3 % and the *PlayStation 3* only 20.1 % (www.vgchartz.com, January 3, 2008). Is Nintendo about to gain victory again and is Sony losing its first video game war? Is it impossible to reign for more than two generations as seen in the history? Still this may very well be the closest race since the 4th generation.

4 Recent research

The electricity that is a necessity to play video games entered our homes in the beginning of the 20th century and the TV that also is required started broadcasting roughly 75 years ago. The first video game for home use was released in 1972 and this paper's subject the 6th generation of video games began in 1998. Said that, it easy to understand that there have not been very much written about it yet. Nonetheless, there are sources that already have investigated the case. Even though the next generation has taken over, this generation is not yet over and a complete summary can still not be done.

Can the Dreamcast, Xbox, PlayStation 2 and GameCube all peacefully coexist and be profitable? It's doubtful.
(Marriott 2000)

4.1 Marketing

Kent (2001, 559) suggests that Sony stole the spotlight from SEGA only three months after the Dreamcast was launched with an impressive show revealing facts about their upcoming PlayStation 2. At that time it was not even decided if it would be able to play DVD discs but they mentioned the backward-compatible advantage. "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" (Kent 2001). The strategy was later entitled *Sony's Trojan Horse* and let the public know that you could not only play games on their new platform but also watch movies, use the Internet etc. The PlayStation Festival trade show in February 2000 did not contain many games that impressed the consumers but at 2000 Electronic Entertainment Expo Hideo Kojima's *Metal Gear Solid 2* made people believe in the console again.

Kline (2003, 153, 174) tells us that Sony mostly rivaled SEGA and Microsoft, targeting the older male players and letting Nintendo focus on the younger market. Furthermore he says that they stole SEGA's identity as a more mature gaming system when they released the original PlayStation. Already then they started with their aggressive marketing. Sony had a PlayStation room in a hip club in London, handed out the soundtrack to the game *Wip3out* to popular DJ's and: "During the 1995 Glastonbury Festival, they distributed thousands of perforated cards adorned with PlayStation logos, which could be torn up to make convenient roaches for marijuana joints – or, as Sony claimed, to dispose of chewing gum"

(Poole 2003, 21). Success “[...] depends crucially on the cultural content of accompanying games, and on shrewd marketing strategy” (Kline 2003, 174).

One week after the American launch of PlayStation 2, Microsoft tried making an own *Trojan Horse* with the announcement of the Xbox. With all the powerful facts they released about it, the “[...] Xbox appeared to be unstoppable” (Kent 2001, 576).

4.1.1 Brand

Poole (2004, 321) also tells us that about the importance of symbols in marketing. Sony used the four symbols on the main buttons of their controller to get the audience attention. The icons were an X, a square, a triangle and a circle, sometimes only these four figures were used in advertising without the brand name Sony, PlayStation or PlayStation 2. People who knew them understood the ad any way.

4.1.2 Launch

Kent (2001, 566) writes that even though the American launch had sold over 1.2 million Dreamcast consoles at the end of the holidays, the time after it went on with low sales.

At the Japanese launch all 600,000 PlayStation 2 units sold off in three hours but software sales were low, *Ridge Racer V* was the only exception. The main use in Japan for the PS2 was movie watching at this time. Sony could have sold much more consoles; they were short of them in every launch. According to Poole (2004, 398) the big boom in sales of consoles did not appear until the summer of 2001 when the racing game *Gran Turismo 3* was released.

Ho (2002) suggests that the Dreamcast shortened its own life when it could not meet the high demand in the launching and therefore lost many initial customers. Both Nintendo and Microsoft delayed their launch to have a higher stock volume when released.

4.2 Engineering

Kline (2003, 174) and also Carroll (2005) shows that the most graphically powerful console has never been the most successful. Carroll also tells us that the only time the first released console in a generation has sold most units is the NES during the 3rd generation. Kent (2001, 563) writes that “[...] SEGA wanted to shore up its installed-base as quickly as possible.” However NEC had manufacturing problems that made the sales rate slower.

Already in the preamble Forster (2005, 180) writes that Sony succeeded again aided by the “[...] DVD drive, fast 3D chips and backward compatibility”. And Kent (2001) writes that Sony also designed it so it did not look like the average video game console. More like a multimedia center. You could also connect digital video cameras, scanners and printers (Poole 2004, 27).

According to Kent (2001, 568) programmers felt that the PS2 was very hard to program because it was so powerful. Koyama (2005) shows in his research that the adjourned sale rate is higher in the beginning of a new consoles life time due to problems programming the new hardware. But they will soon fade away.

4.3 Finances

Kent (2001) has a chapter called “Three horses and a pony”, intending that SEGA is the pony because of its much smaller finances. ”Shoichiro Irimajiri, Sega’s president, said in recent published reports that the breakeven point for Dreamcast, is probably 3 million units” (Sally 1999). Microsoft on the other hand had “[...] to sell eight or nine games for every Xbox to break even” (Kline 2003, 175).

With SEGA out of the way the three left contenders were expected to spend \$ 1.5 billion in marketing campaigns worldwide (Kline 2003).

5 Further Research

5.1 Marketing

5.1.1 Launch

As a tradition the Japanese consoles are first released in Japan and at last in Europe. The American company Microsoft of course broke this tradition and released the Xbox first in its home country. Knowing that SEGA stopped the production of the Dreamcast already in March 2001 this console war was almost over before it had started. But they were still going to support it with its own software until February 24, 2004 and to this day independent developers still maintain the system, so in a way it survived both the Xbox and GameCube.

	Japan	USA	Europe
Dreamcast	1998 11 27	1999 09 09	1999 10 14
PlayStation 2	2000 03 04	2000 10 26	2000 11 24
GameCube	2001 09 14	2001 11 18	2002 05 03
Xbox	2002 02 22	2001 11 15	2002 03 14

Table 1: Release dates of the 6th generation

5.1.2 Launch titles

It is often said that no console is better than its software, it does not matter if it is the most powerful games machine ever built as long as it does not have any attractive games. No new video game platform can be sold without games that attract the possible consumers. A strong line-up of launch titles is preferred when releasing new hardware. The manufacturers try to have games representing as many genres as possible to get more potential buyers and have at least one game from the racing-, fighting-, action-, sport- and platform-genres. Huge role playing games are seldom a part of the release due to the long time it takes developing them. But did the 6th generation contain strong launch games? PlayStation 2's Japanese release was a disappointment to many, after a whole year of

advertisement only *Ridge Racer V* could meet the high expectations from the consumers. The American and European launch contained stronger titles but it did not outclass the Dreamcast from the Beginning as many had expected. More appealing games are highlighted in black. In Europe the games often differ from county to country.

Sony PlayStation 2	Japan 2000 03 04	USA 2000 10 26	Europe 2000 11 24
A Ressha de Ikô	•		
Armored Core 2		•	
Dead or Alive 2 – Hardcore		•	
DrumMania	•		
Dynasty Warriors 2		•	•
ESPN International Track & Field		•	
ESPN Winter X Games Snowboarding		•	
Eternal Ring	•	•	
Evergrace		•	
FantaVision		•	•
Gungriffon Blaze		•	
Kakiki Shôgi IV	•		
Kessen	•	•	
Madden NFL 2001		•	
Mahjong Taikai III – Millennium	•		
Midnight Club - Street Racing		•	
Morita Shôgi	•		
MotoGP		•	
NHL 2001		•	•
Orphen – Scion of Sorcery		•	•
Q-Ball – Billiards Master		•	
Ready 2 Rumble Boxing - Round 2		•	•
Ridge Racer V	•	•	•
Silent Scope		•	•
Smuggler's Run		•	•
SSX		•	•
Stepping Selection	•		
Street Fighter EX3	•	•	
Summoner		•	
Swing Away Golf		•	
Tekken Tag Tournament		•	•
TimeSplitters		•	•
Unreal Tournament		•	
Wild Wild Racing		•	•
X Squad (X Fire)		•	
Total	10	29	12

Table 2: Launch games for Sony PlayStation 2

5.2 Engineering

5.2.1 Hardware

The 6th generation of video games is sometimes called the 128-bit generation. A fact that is not very correct because the only true 128-bit processor was located in the Dreamcast. The later a console has been engineered and manufactured the more powerful it has been. The difference between the Dreamcast and Xbox is quite gigantic (see attachment 2).

5.2.2 Design & Versions

Sony was awarded the Japanese *good design award* for both its original PlayStation and the successor PlayStation 2 (JIDPO, Retrieved January 6, 2008). Even GameCube was awarded this but in my survey the winner of best design was the Dreamcast with 37 % of the votes (Sunhede 2007).

In 2003 Sony released the *PSX*, a PlayStation 2 combined with a home media center that could record television shows to its hard disk or onto DVD discs. It was only put on the market in Japan due to poor sales. A year later Sony discontinued to manufacture the old PS2 and instead shipped a much smaller model called *PSTwo*. It contained an in-built Internet port but lost the expansion bay used for the additional hard disk drive.

5.2.3 Accessories

While SEGA made many additional accessories for its Dreamcast; the problem was that other developers rarely used them. The other three contenders mainly left this job for the 3rd party game manufacturers. The PS2 had two USB ports where any PC keyboard and mouse also would function.

5.2.4 Controller

The interface that connects the player to the medium is normally a controller that is included when you purchase the console. It is very important that it is of first-class quality to not disappoint the player. The 6th generation videogame

controllers can all be seen to have been progressed from the *Super Nintendo* controller in one or another way. In the book *Joysticks* (Forster 2004) the PlayStation 2's controller *DualShock 2* is one of only five controllers to get a perfect score. While ranking in on a five out of five possible stars, the GameCube controller gets four, the Xbox's ditto three point five and Dreamcast's only two and a half stars. In my survey the PS2 gained 41 % of all votes (Sunhede 2007).

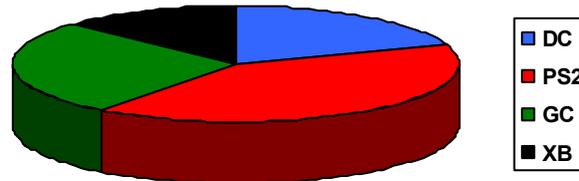


Figure 5: Best controller in the 6th generation according to the survey (%)

5.2.5 Games

But which console had the best games? This might be simple if you compare the *Super Nintendo* with the *CD-i*. But in the 6th generation all consoles were capable of amazing graphics, great music and high polygon rate etc. This makes of course this an extremely difficult question and heavily depends on who you are asking. None the less I will try to make a comparison in three small steps.

First, in my web survey 49 % answered that the PS2 had the best games. Approx. 500+ games were made for the DC, 600+ for the GC, 700+ for the XB and more than 2000 for the PS2, where it is still counting when I write this. Even if many of these games were garbage the more games a console have the bigger chance of more A-titles naturally.

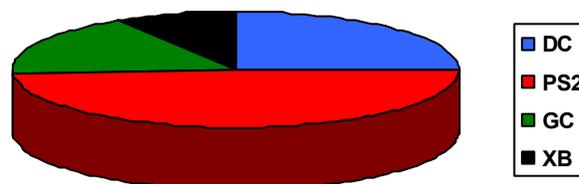


Figure 6: Best games in the 6th generation according to the survey (%)

One second way of finding out is to look at the charts over most sold games. This obviously also depends on how many consoles that were sold. In Japan there couldn't be any million sellers to the Xbox because it did not sell more than half a million. The most sold game in the world is *Super Mario Bros.* for the *NES* (*Nintendo Entertainment System*); this game was included in almost every console package and is estimated to have sold in 40.24 million units. It is followed by such games as *Tetris* (*Game Boy*, 30.26 m.), *Super Mario World* (*Super Nintendo*, 20.61 m.) and *The Sims* (*PC*, 16.08 m.). First on the twelfth place a game from the 6th generation appears on the list, it is *Rockstar Games* with their *Grand Theft Auto - San Andreas* (*PS2*, 14.88 m.). The most sold Xbox game, *Halo 2* is on the 33rd place with its 8.37 million sold discs. GameCube's most sold game is *Mario Kart - Double Dash* on a 49th place with its 6.6 million. The ditto for Dreamcast is *Sonic Adventure* (2.42 m.). The PS2 has the most sold consoles and quite obvious also the most million sellers for its console. Vgchartz.com has 838 games listed that are million sellers, 197 of these are PS2-games, 38 are GC, 38 are XB and only six for the Dreamcast (Vgchartz.com Retrieved November 23, 2007).

The third method is to look at lists over *the best games ever made* in magazines and on the Internet. There you will see what the reviewers and consumers think. I have compared eight different lists from Sweden, UK, USA and Japan. And I have not counted games that have been re-released to another system. The first only contained three games from the 6th generation and all of them were to the Dreamcast because it was the only system yet released (Mott 2007, Edge No. 80, 2000). On the second list the DC and PS2 ties with five games each while the XB and GC both have four (Bjarneby 2003). On the third the PS2 overtakes the DC with one game while GC has the same as DC, and XB one less (IGN 2003). Next list contains the big leap for the PS2, while having nine games the contenders only manage with half of that (IGN 2005). According to the magazine *Gamereactor* the Xbox had more great games than the PS2 in 2005, leaving the GC and DC hopelessly behind (Engelin 2005). But on the last three lists the PlayStation 2 is once again crushing its contenders and having almost twice as many games on the top 100 lists or as in *Famitsu* totally dominate it (Mott 2007, Famitsu 2006, Bjarneby 2007). The more years we put behind us, the more games from PS2 are claiming to be among the 100 best games ever.

5.2.6 DVD-Video

The PlayStation 2 as well as the Xbox could also play DVD discs but the latter needed an additional remote control plugged in. Nintendo made a deal with Panasonic who released a hybrid called the Q, it could play both GameCube games and DVD movies, it was only released in Japan and quite rare. SEGA sold the Dreamcast in the end with an included DVD player to compete with the PS2, but then it was already to late (Hedengren T. 2004). As a result, only on the PS2 you could watch movies on an instant.

5.3 Finances

On the magazine *Forbes* list over the biggest and richest companies Microsoft places on the 66th, Sony 164th, Nintendo 695th and SEGA Sammy 1189th place (Forbes 2007). Even though Microsoft and Sony do not put all their capital in games you immediately see that they have much larger finances to play around with.

SEGA's finances were not very good after the failure with the console *Saturn*. "The marketer will boost its ad and marketing budget to support the rollout [...of Dreamcast...]. Mr. Moore projected a range from \$115 million to \$140 million, though that hasn't been finalized yet" (Elkin Tobi 2000). Small potatoes if you compare to the \$ 1.5 billion the other three contenders were planning on spending on marketing campaigns (Kline 2003).

5.3.1 Prices

The fact that many companies only swap the dollar sign to a euro sign when launching the systems in Europe (see table 3) makes them much more expensive there, even though the consumers have to wait longer. All of these four consoles have had drastic drops in the price to increase sales. Worst was it probably for Microsoft's Xbox that had to lower the price with roughly two-fifths almost in an instant to increase sales. They also included two games and an extra controller to everyone that now bought it or could show a receipt that they had bought it before the price drop. They lost money on every console sold.

The 6th generation's launch price were actually lower or the same as the last 5th generation's. In US Sony sold the PS2 at the same price as their first PlayStation and Nintendo had the same price on the GameCube as the Nintendo 64 while SEGA halved the Saturn's high \$ 400 price tag. As you can see in the chart below the DC and GC were in one price class while the XB and PS2 fought in the other.

The prices might seem high for just *toys*, but the price for video games has been fairly steady around \$ 200-300 since the 70's. And if you include the inflation of the dollar the prices are actually lower in this generation than all previous (Jvm 2006). The PlayStation 2 had a much higher price in Europe the first years and due to that sold lesser in the beginning but ended up almost as well there as in America.

	Japan	USA	Europe
Dreamcast	¥ 29,800	\$ 199.99	£ 199.99 ⁸
PlayStation 2	¥ 39,800	\$ 299.99	€ 500
GameCube	¥ 25,000	\$ 199.99	€ 199
Xbox	¥ 34,800	\$ 299	€ 479.99

Table 3: Prices of the 6th generation

5.3.2 Sales

It all started out well for Dreamcast. “Sega sold nearly 1.7 million Dreamcast systems in the U.S. from Sept. 1 to Dec. 31, 1999, according to technology researcher PC Data. Sega projects sales of 2 million by March 31, when its fiscal year ends. During Dreamcast's September '99 launch month, Sega sold a whopping 700,000 systems...” (Elkin 2000). It sold more than 800,000 units in Europe since its launch in 1999 and broke all previous game console records 1999 (SEGA News Release 2000). Before the Xbox was released Microsoft tried to buy SEGA but didn't manage and had to develop their own console, SEGA later merged with Sammy instead (Wiborgh 2003). It easy to think that it would have totally dominated the market with its new hardware at that point but the first *PlayStation* and the *Nintendo 64* from the previous generation had a much bigger base with consoles and games.

Both the DC and PS2 had problems meeting the demand in the stores when released, to the consumer's dissatisfaction (Desjardins 2001). The Dreamcast had their problems in an early stage and 2000 they actually “[...] posted strong sales during the holidays (it accounted for 26% of console sales the third week of November) and profited largely from the unavailability of PS2” (Doug Desjardins 2001).

The PlayStation 2 didn't have any problems getting their consoles of the shelves either. In 24 hours they sold 500,000 units in USA and in Europe 1 million was sold the first week (Choquet 2002). As you can see in the somewhat inept figure 6, PlayStation 2 passed the Dreamcast already in early 2001, only one year after its release. The GameCube had the lead over the Xbox at first but lost it in the end, both were far from the PS2.

⁸ The currency Euro was not yet used.

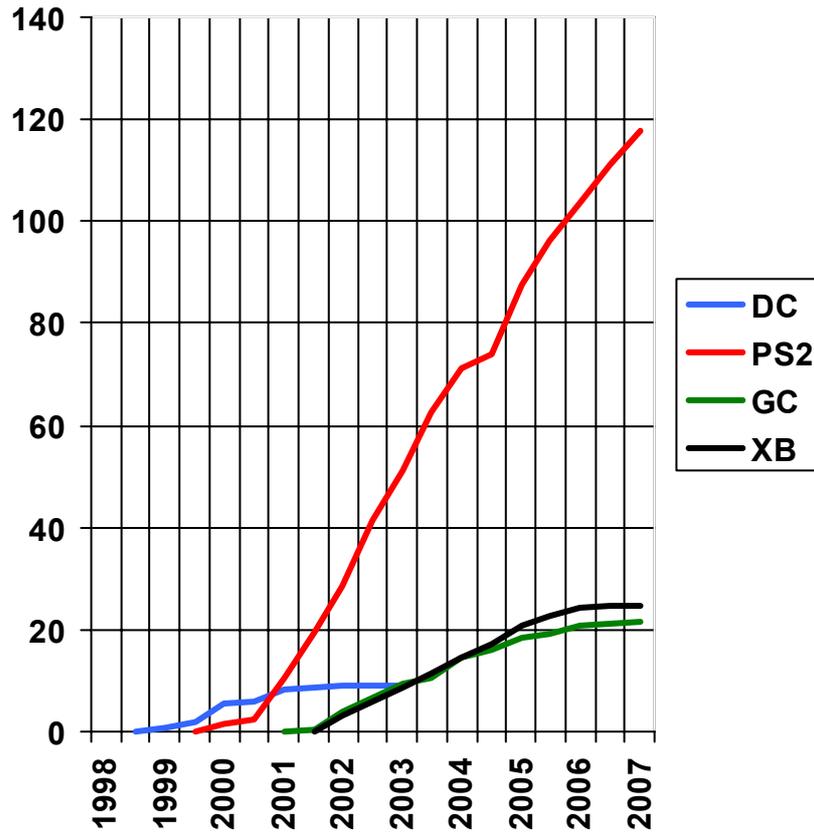


Figure 6: Global sales of 6th generation consoles

*"Bill vs. Aibo vs. Hanafuda-ya."*⁹
 (Chris Kohler 2005)

⁹ This is what the Xbox vs. GameCube vs. PlayStation 2 console war was called in Japan after the Dreamcast passed away; *Bill* (Bill Gates, Microsoft), *Aibo* (Sony's robotic dog) and *Hanafuda-ya* (Nintendo is still well known for its Hanafuda playing cards).

6 Discussion

PlayStation 2 controlled circa 67 % of the market for stationary home video games during the 6th generation. Without being the first launched system, not the most advanced system, neither had it the best Internet functions, nor was it the most well designed. Then, how did they manage?

6.1 How to win

We will start by looking back in the history. How do you win a video game generation war? It is obvious not as easy as these lists will show but none the less this is parts of it.

All the previous winners have...

- ...had the biggest support from 3rd party game developers. This goes of course hand in hand with having the most sold console.
- ...had the Castlevania, Mega Man, Final Fantasy & Dragon Quest main series on their platform from the 3rd to 6th generation.
- ...had a console, originally in a dull color such as black, brown or grey.
- ...had only reigned for two generations. First Atari, then Nintendo and until now Sony.
- ...sold more consoles than the previous generation's winner except the Super Nintendo in the 4th generation.

All the previous winners have NOT...

- ...been the most powerful consoles in its generation.
- ...been the most expensive consoles in its generation except when the PS2 was released for ¥ 39,800 in the 6th generation.
- ...been first out in the new generation except in the 3rd generation when the NES was the initial platform.

All video game generations has sold more hardware than the one previous. If the next generation will beat the 6th they have to sell over 170 million consoles. I wonder if not the peak has been reach at this moment but time will tell.

6.2 Marketing

Already when the PlayStation 2 was not released, so much advertisement was hitting the consumers that it made many hesitate to buy a Dreamcast and instead wait for the PS2. Just as Kent (2001) describes Sony stole the attention from SEGA and made the customers save their money for another year and console. Waiting a whole year might even have made them possible to save up more money to buy the almost twice as expensive platform. SEGA with much lesser finances could not fight back and when the PS2 sales passed them, decided to throw in the towel. SEGA was 2nd in the 4th generation, they became 3rd in the 5th generation and with two more systems (XB & GC) being released they did not want to be placed 4th in this generation. After the relatively poor sales of the Xbox and GameCube some say that perhaps the Dreamcast would have beaten one or two of them if staying in business but SEGA claimed they already lost money on every console sold.

Sony's aggressive marketing was outstanding and a big part in their success. Their choice of an older target group made that they got an audience with more purchasing power. And just as Kline (2003) suggests SEGA's lost their attitude when Sony made them something in between the childish Nintendo and the new hip Sony.

6.2.1 Brand

Video game fans are often loyal to the brand they like. Sony is the new Atari or Nintendo if you like. You might have heard the term *Nintendo Fan Boy*, which is what a consumer that is loyal to Nintendo might be called. If only every other PlayStation owner would buy a PlayStation 2 Sony would sell 50 million units. Looking back you might say that every owner as well as some of their neighbours bought one. The Sony brand is today not only known for its quality in consumer electronics but also top games and first-class gaming hardware.

6.2.2 Market

It is still weird that the video game companies still focus so heavily on USA and Japan. Of course most games are made there and many never leave their home country but why is it still in this way? Most consoles are first released in Japan, a

priority they still have because that they are developed and made there, then USA (and Canada) stands in line and at last Europe and the rest of the world¹⁰.

The strongest market is still USA, they have approx. 300 million citizens. Japan is historically often second strongest with its 130 million. The big question is why the other 260 million people in the G7¹¹ countries are so ignored? These are all very wealthy countries with almost as much people as in the United States. Adding up the other rich countries that are a part of the European Union makes them circa 500 millions. Still they are more or less ignored by the big companies.

One reason is, while USA and Japan only have their own languages to take in to consideration, the European Union alone has 23 official languages. To translate a game to all these languages would take a very long time and would not be profitable. Games are sometimes translated to the big languages German, Spanish, Italian, French and Dutch. The English language is already done by the time the game hits USA and sometimes before that. In Europe it is still most common that the games are in English and only the packaging and manual has other languages. Many games do not contain a great deal of speech or text and the European Union young citizens normally handle English quite well so why they are still mistreated is a tough question. Why not try releasing the next generation of video games in Europe first?

When Dreamcast was on its last legs SEGA lowered the prices in Japan and practically gave it away free in USA if you bought the SegaNet service (Kent 2001). Europe was the last place where the PS2 was launched and could have been a stronghold for SEGA if they had lowered the prices and released more games, but still they ignored the Europeans.

6.2.3 Launch titles

The PS2 launch titles were not impressing in the initial Japanese launch, even the Dreamcast and GameCube had very little to come with. Xbox was released in Japan just before Europe and actually had the best line-up in of all the consoles in my opinion even though Halo strangely was not a part of it. This is probably the only advantage the Europeans have, they almost always get a strong line-up due to the fact that more games have been developed when the new hardware at last arrive there. But PlayStation 2 made the launch titles lose the important factor they have had for all previous consoles and even Sony's rivals in this generation, with all DVD-movies and original PlayStation games working on an instant there were no shortage of software.

¹⁰ The rest of the world is normally only Australia but also other rich countries outside Europe.

¹¹ The G7 countries are USA, Japan, Germany, France, Italy, Spain and the United Kingdom. Russia is included in the new G8 fraction but is still not a big market for video games.

6.3 Engineering

6.3.1 Hardware

Just as Kline (2003) and Carroll (2005) shows, the console with the most powerful hardware has never won a video game war yet. Both the Xbox and the GameCube was more powerful than the PS2. But the wide base of PlayStation 2's in the world often made games a little less graphical demanding so it could be released to all three systems. A wide range of accessories does not either make your console automatically successful and it is better to let the 3rd parties to take care of that development. Both the public and author to the most comprehensive book about joysticks (Forster 2005) think that the best controller was the one to PlayStation 2. The blunder Sony made according to me was to keep the steering cross in center for the left thumb instead of the analog stick. The Dual Shock 2 is also the only controller in the 6th generation that does not have properly analog triggers for the index fingers. They say "one time is no time, but two times is a habit". I say "still keeping the same controller to the PlayStation 3 is stupidity". It is understandable it is loved by many but it is still outdated.

In my view Sony failed to create the multimedia hub they wanted to, sure you could watch movies, but cheaper DVD players soon took over that session. As for the Internet I never heard of anybody surfing on a PS2 and playing games over the Internet was not very widespread. Not to mention connecting accessories as scanners and cameras. In the end it was just a plain game system to most people.

The GameCube and Xbox, released over a year after the PS2 were simply too late. Even if some thought that the PlayStation 2 was hard to program for Koyama (2005) shows us that it takes a couple of months before games can be programmed smoothly on new generation hardware.

6.3.2 CD & DVD

Historically CD playability has been an argument to buy a videogame. The SEGA Mega-CD could play CD's as well as the Amiga CD32, Sony PlayStation, SEGA Saturn etc. In the sixth generation this was not an argument for buying any of them even though they all had the ability except for the GameCube.

Sony released their console at the exact accurate time. DVD-players were expensive and something new and exciting. With almost 120 million sold PS2's it is often called the world's most common DVD-player. They are doing the exact same thing now with the PlayStation 3 which contains a Blu-ray player but the leap from DVD to Blu-ray is much closer than the giant leap between VHS and DVD. As Kent (2001) tells us the main purpose for the PlayStation 2 was in many

homes as a movie player and not a gaming console due to the fact that it was cheaper than a DVD player. And as always it is easier to get your parents or spouse approval if you can show them another reason why you should by a console, except gaming.

6.3.3 Software

The PS2 did have the biggest library of game titles and additional to that, can play almost any DVD's. As we also have seen in three different methods you can assume that they did have the *best* games. It is all about having a lot of 3rd party developers choosing your system and Nintendo lost most of them in the 5th generation when they choose to go with cartridges instead of CD's to the Nintendo 64. Sony gladly took them aboard on their ship to success.

6.3.4 Loyal 3rd Party Developers

The developers for the PlayStation seemed satisfied with their chosen system and very few fled to another console. These meant that almost every successful game to the PS1 later on had a sequel to the PS2. Contrary to a movie sequel, a follow-up to a game is often better than its prequel.

6.4 Finances

Nintendo and especially SEGA looked like mice when the big elephants Sony and Microsoft marched into the video game business. SEGA had been struggled with their hardware for years. The sad thing is that the dynamic Dreamcast had to stand responsible for what the setback with the *Mega-CD*, *32X* and *Saturn* had created. While Nintendo struggled on and maybe found a way out with their new console *Wii*, SEGA at last decided to withdraw from the home video game hardware business, focusing on their video arcades and games instead. Sony is very careful when releasing new hardware and has not had any major setbacks as SEGA and Nintendo have had. Their finances are thereafter. Microsoft did not either do any profit in the 6th generation but got a foot into the lucrative video game business.

7 Conclusion

In my opinion the PlayStation 2 became the most sold console in the 6th generation because of the following reasons:

- The internal DVD Player...
- ...and the famous Sony brand.
- Satisfied and loyal 3rd party developers...
- ...who created the greatest video games in the 6th generation to the PlayStation 2.
- Strong finances...
- ...and a great marketing plan.

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9 Attachments

webvoter-omröstning

Which console had the best controller?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

Rösta [Se resultat](#)

webvoter-omröstning

Which console had the best design?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

Rösta [Se resultat](#)

webvoter-omröstning

Which console had the best hardware?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

Rösta [Se resultat](#)

webvoter-omröstning

Which console had the best games?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

Rösta [Se resultat](#)

webvoter-omröstning

Which console is your favorite?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

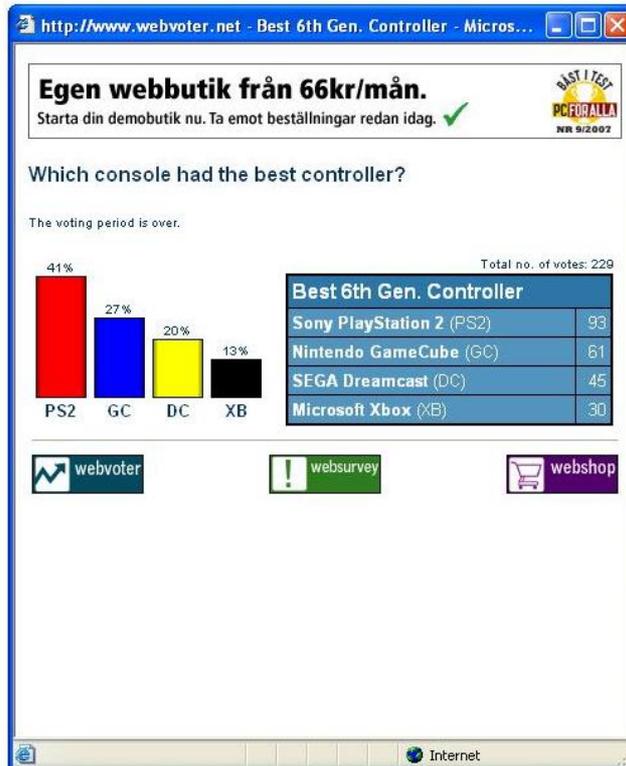
Rösta [Se resultat](#)

webvoter-omröstning

Which console do you think won the 128-bit war?

Microsoft Xbox
 Nintendo GameCube
 SEGA Dreamcast
 Sony PlayStation 2

Rösta [Se resultat](#)



Attachment 1: Survey (Sunhede 2007)

	Dreamcast	PlayStation 2	GameCube	Xbox
CPU	Hitachi SH-4	Toshiba/Sony Emotion Engine	IBM Gekko (based on PowerPC 750 CXe)	Intel Pentium III /Celeron
Clock speed	200 MHz	294 MHz	485 MHz	733 MHz
Level 1 cache¹²	8 K (i), 16 K (d)	16 K (i), 8 K (d), 16 K scratch pad	32 K (i), 32 K (d)	16 K (i), 16 K (d)
Level 2 cache	-	-	256 K	128 K
Benchmarks	340 MIPS, 1.4 GFLOPS	450 MIPS, 6.2 GFLOPS	1.125 MIPS, 13 GFLOPS	2 GFLOPS
Graphics processor	Videologic/NEC PowerVR2	Sony Graphics Synthesizer	NEC/ATI Flipper	nVidia XGPU (based on GeForce3)
Clock speed	100 MHz	147 MHz	162 MHz	233 MHz
Total memory	26 MB	36 MB	40 MB	64 MB
Main RAM	16 MB	32 MB	24 MB	64 MB
Type	SD-RAM	RambusDRAM	Mosys 1T-SRAM	DDR-SDRAM
Clock speed	100 MHz	400 MHz	81 MHz	200 MHz
Bandwidth	800 MB/s	3.2 GB/s	2.6 GB/s	6.4 GB/s
Video RAM	8 MB	4 MB	3.12 MB	-
Texture compression	-	-	6 : 1	6 : 1
Sound RAM	2 MB	2 MB	A-Memory: 16 MB DRAM	-
Graphics resolution	640x480 Interlace	640x480 - 1280x1024	640x480	640x480 - 1920x1080
Pixel (including alpha channel et.al.)	32-Bit	64-Bit	24-Bit + 24-Bit Z buffer	32-Bit
Pixel/sec	0.2 GB/s	1.2 GB/s (1 texture)	Unknown	3.7 GB/s (2 textures)
Sound processor	Yamaha AICA (DSP on ARM7 RISC Core)	SPU	In Flipper (Macronix 16-Bit DSP)	APU (nVidia MCP)
Channels	64 ADPCM	48+ ADPCM	64 ADPCM	256
Surround formats	Dolby Surround	Dolby Surround, Dolby Digital, DTS	Dolby Pro Logic II	Dolby Digital 5.1 (AC 3), DTS
Disc format	12x GD-ROM	2x DVD-ROM	3 inch Mini-DVD	4x DVD-ROM
Disc capacity	1.2 GB	4.7 GB	1.5 GB	9.4 GB
Disc transfer	1.8 MB/s	2 MB/s	2.0 to 3.2 MB/s	2.5 to 6.25 MB/s
Audio CD	Yes	Yes	-	Yes ¹³
DVD-video	-	Yes	-	Yes ¹³
Video CD	Yes ¹⁴	-	-	Yes ¹²
Controller ports	4	2	4	4
Memory card ports	2 (in each controller)	2	2	2 (in each controller)
Hard disk	-	Accessory	-	10 GB (built-in)
Net link	Serial link	FireWire or 10/100 Ethernet (accessory) ¹⁵	10/100 Ethernet (accessory)	10/100 Ethernet (built-in)
Other ports	-	2x USB	2x serial, 1x parallel	-
Modem	Built-in ¹⁶	Accessory	Accessory	-
AV out	AVOut 16pin	MultiAV 12 pin	MultiAV 24 pin	AVOut 12 pin
Special AV ports	-	Digital Audio (optical)	-	DigitalAV Out
Component (RBG)	Yes	Yes	Yes	Europe only
S-Video (Y/C)	Yes	Yes	Yes	Yes
Video (CVBAS)	Yes	Yes	Yes	Yes
Component (YUV)	-	Yes	Yes	Yes
VGA (RBG)	Yes	-	-	-
Digital (D-terminal)	-	-	-	Yes
Weight	1.5 kg	2.4 kg	1.4 kg	3.86 kg

Attachment 2: 6th generation hardware specifications (Forster 2005)

¹² (i) = instructions cache, (d) = data cache

¹³ Only works with a remote controller sold as an accessory.

¹⁴ With a homebrew boot disc or a homebrew program you had to burn with the VCD-movie itself.

¹⁵ iLink (FireWire) was dropped after first series. From 2001, Ethernet was an option; it was made standard on the PSTwo.

¹⁶ Speed was 33.6 kbps in Japan and Europe, 56 kbps in USA.