

## **Sony: Maintaining Dominance with PlayStation 3**



Jie Cheng, Mark Freeman-Aloiau, Xin Guo, Anthony Pullen  
BEM 106, California Institute of Technology, March 6<sup>th</sup>, 2007

## **Executive summary**

In face of the competitive advantages of Nintendo's Wii and Microsoft's Xbox 360, how does Sony maintain its leading role in the video game industry with its PlayStation 3 (PS3)? Rather than reduce the retail price, Sony should seek to maximize the value of the PS3 and to aggressively market it as not only a powerful video game console but also an affordable home entertainment hub. Specifically, the strategy should include the following major components:

- Sony should effectively market the PS3 as the world's most powerful video game console and an affordable home entertainment hub.
- Sony should imitate Wii's motion sensing controller and offer it as an optional add-on for both the PS2 and the PS3.
- Sony should use the PS2 and the PS3 to fill different customer niches and encourage PS2 owners to gradually upgrade to the PS3.
- Sony should leverage its core competencies and exploit synergies between the PS3 and other Sony products.

## **Part I. Introduction**

Sony launched the long awaited PS3 in the United States on November 17<sup>th</sup> 2006, two days before the debut of the Wii from Nintendo. Both events have witnessed hardcore gamers and eBay entrepreneurs living in tents for days in front of Best Buy and Circuit City stores waiting to buy the next generation consoles. These consoles were soon after sold on eBay for up to five times the retail price. The frenzy lasted for weeks and finally escalated into riot, robbery and gunshots.

Moreover, the recent unleashing of the PS3, the Wii, and Microsoft's Xbox 360 has started a new generation game console war between the three giants in the oligopolistic industry. Due to the non-interoperability of these proprietary consoles and the network effects present in the video game industry [1], all three firms are pushing for the greatest installed base possible. A large installed base induces entry of video game publishers and provides the sources from which royalties will be drawn. The royalties, typically 16% of the revenue [2], are the major source of profit. Microsoft's Xbox 360 has a one-year lead in the market and has been enjoying a first-mover advantage. It has built a large customer base and over a hundred game titles. Nintendo's Wii has successfully distinguished itself from rivals by an innovative motion-sensing controller (Wiimote). Both gamers and game critics enthusiastically embrace this controller. Despite the fact that the PS3 has arguably the best raw computing power and the Blu-Ray feature, it is falling behind in the race for market share, presumably due to its high price. NPD group research showed that January PS3 sales in the U.S. were lower than both the Wii and the Xbox 360, and that the PS3 was also outsold by its predecessor, the PlayStation 2 (PS2) (See Exhibit 1). Analysts have raised their outlook on Wii's success in the market and significantly lowered the PS3 sales forecast [3, 4].

However, the next generation video game console war has just started and Sony still has a good chance to win. An effective strategy would keep Sony from losing its leading role in the video game industry and our research and presentation offer such a strategy. Specifically, we seek to answer the question "*How does Sony build the largest customer base possible for the PS3 so as to achieve sustainable profitability throughout its life cycle?*"

## **Part II. S.W.O.T. Analysis**

A SWOT analysis is presented here to illustrate the strategic position of Sony's PS3 with respect to the Wii and the Xbox 360. This analysis serves as the basis for the strategy we propose in Part III. A detailed comparison of specifications for the three game consoles can be found in Exhibit 2.

## **Strengths**

- Strong brand name of both Sony and PlayStation (PS)
- Strong network of game licensees
- Large installed base of the PS2
- Strong global market position
- High quality Blu-Ray function
- Strong multimedia support
- Best raw computing power provided by its Cell processor
- Top graphics and audio capabilities
- High vertical integration
- Sony is a highly diversified corporation

## **Weaknesses**

- Lack of PS3 games, especially hit games
- Delay in launch
- Product backlog
- Less innovation compared to Wiimote
- Inferior online service compared to Xbox Live
- No remote control for Blu-Ray playback
- Sony is not effective at interdivision support throughout the corporation
- Some Sony products scare away average customers from being over-engineered

## **Opportunities**

- Blu-Ray may become the new high-definition standard
- Cheapest Blu-Ray player available
- Voice controller under development
- Synergies with other products of Sony
- Production cost should go down via manufacturing scale-up and improvements
- Introduction of exciting games later this year

## **Threats**

- HD-DVD may become the new high-definition standard
- The Wii, with its innovative controller might capture market away from the PS3
- Microsoft is expanding its advantage in online services
- Sony must rapidly build a large enough network to attract game publishersPS3
- Mixing the images of game console and Blu-Ray player may confuse buyers

### **Part III. Competitive Strategy**

It is common that during a console's introduction phase the price is set below the cost of production. This is done as a way to establish a large enough installed base. Such a strategic price cut has been adopted by Sony on the PS3 which has led to a quarterly operating loss of \$446 million for its game division [5]. Both Sony executives and analysts have suggested that a further price cut is possible and even necessary [6]. A strategic price cut is generally effective in bolstering demand. This market trend is illustrated in a study of the video game industry in the U.S. from 1994 to 2002. It estimates an elasticity of -1.92 for game consoles in the first year of introduction [7]. However, a further price cut on the PS3 may be more detrimental than beneficial to Sony. Consider that the PS3 is already sold well below the cost of production [8], and also that it is almost impossible to match the price of the Wii or the Xbox 360 due to product differentiation.

Viewed from another perspective, the perception of high price means that consumers have yet to fully appreciate the value of the PS3. One major problem is the lack of PS3 games. The above-mentioned study also suggests that consumers value a 1% increase in game titles as equivalent to a 2.3% price cut in the market. Another major problem has to do with poor branding and marketing of the PS3 as both a powerful game console and an affordable Blu-Ray player. Last but not least, despite being the most powerful game console, the PS3 falls far short of providing the world's most engaging overall entertainment experience, and Sony seems to have confused one for the other [9].

Therefore, we propose that Sony's core strategy should be to take advantage of its core competencies to maximize the value of the PS3, and to help consumers appreciate the full value through marketing. Specifically, we propose the following approaches.

#### **a. Marketing PS3 as an all-purpose entertainment hub**

The PS3 has incorporated multiple functions including high-end gaming, Blu-Ray playback and various others. The attraction of the functional convergence is that the PS3 costs less than the multiple products it replaces. However, there are significant product differentiation problems with video games and Blu-Ray movies. Mixing the two images risks confusing buyers or diluting the image of the PS3. Thus proper branding and marketing is necessary to minimize the risks.

Sony should market the PS3 as a core component to a home game and entertainment system. The Blu-Ray capabilities of the PS3 allow it to be the video player for a next generation home entertainment system set at a lower price than any stand-alone player

currently available. Showing that the PS3 is a “family purchase” that has benefits for every member of the family makes its relatively high shelf price more palatable.

Sony should use promotional offers geared toward using the PS3 as a component in a home entertainment system. Sony high definition televisions could come with a mail-in offer for a free Blu-Ray movie or a free PS3 game.

Sony should also giveaway a set amount of PS3's to television, radio shows and other mass-market venues to be used in contests and promotions. This will increase the perception of PS3 as a sought-after product and produce a great deal of inexpensive exposure for PS3.

Strategic advertising in publications about home theater and its components can change consumer perceptions of the PS3 as simply a game console. Sony will push to get these publications to produce articles promoting the PS3 as part of an entertainment system and to include the PS3 in any cross-market evaluations.

A free how-to pamphlet on getting the most out of your PS3 as a home entertainment center should be included in all related Sony products. These pamphlets should also be made available at electronic retailers such as Best Buys, Circuit City or Frye's. The pamphlet will be available electronically for download from Sony websites.

#### **b. Imitating the Wiimote**

To increase the value of the PS3, the Sony should imitate the Wiimote, which we call the “PSmote”. The PSmote should be made compatible with both the PS2 and the PS3. As we propose later in this article Sony should use both consoles to fill two different market niches. If successful, the PSmote will add great value to both consoles. In the low-end market, it will keep those PS2 owners who like the motion sensing controller from switching to the Wii. In the high-end market, it will help the PS3 attract some potential buyers of the Xbox 360. In the long run, Microsoft is expected to develop the technology as well, but at least it will diminish the competitive advantage of the Wii.

Sony should first try to imitate the Wiimote with slightly different technology on which Sony can obtain patents itself. This should not be too difficult since the Wiimote is presumably simple enough to reverse engineer yet complex enough that functional variants would be easy to produce. In addition, the technology embedded in the Wiimote is not effectively protected by patents as compared to a chemical formula or a simple mechanical design [10]. If the patent issue can't be resolved, however, Sony can try to obtain a license from Nintendo. Generally Nintendo would not be willing to give away its most important advantage to its biggest rival, even though licensing the technology to

Sony would significantly increase its revenue. Alternatively, Sony can get a license from the companies that have sued Nintendo for patent infringement of the Wiimote [11, 12]. As a last resort, Sony can opt to violate the patents and face the legal ramifications later. Historically this has often amounted to little more than a fair licensing fee for the units sold as determined by the court.

At the same time, games should be developed for both consoles that showcase the PSmote. Besides designing new games, Sony can ask developers to upgrade the current PS2 and PS3 games to include the PSmote functionality. It can also get the third-party publishers to port games that have been designed specifically for the Wii into the PS2 and PS3 format. Considering the huge installed base of the PS2 and the potential installed base of the PS3, third-party publishers would be more than happy to port the games to recoup the investment in developing the games. This is also supported by the fact that most third-party games can run on multiple platforms (See Exhibit 3).

### **c. Maximizing market share with the PS3 and the PS2**

Sony is facing the problem of the PS2 outselling the PS3. Analysts predict that the trend will continue for the next few years [8]. On the one hand, with an installed base of over 115 million [13], the PS2 is generating the majority of the profit for Sony from software royalties and hardware sales. On the other hand, PS2 owners have been slow to upgrade to the PS3. Hence, Sony faces the challenge of helping PS2 owners move on to the PS3 in the near future.

A simple division of the PS2 owners into hardcore gamers or casual gamers is helpful in illustrating the strategic situation. While most hardcore gamers are expected to upgrade to the PS3 soon, casual gamers are typically more price sensitive and therefore prefer the PS2 to the significantly more expensive PS3. The situation can be seen by Sony as an opportunity to keep both products competitive in two different market niches. Sony should have the PS3 compete with the Xbox 360 in the high-end market and have the PS2 compete with the Wii in the low-end market. Provided that the PSmote is available as an optional add-on, the PS2 will be competitive against Wii by offering comparable gaming experience at a lower price.

It is important for Sony to keep the PS3 market separate from the PS2 market in order to effectively fill their respective niches. To do this, Sony should first develop a large number of exclusive games for the PS3, as many hardcore PS2 owners have delayed the upgrade to the PS3 due to the lack of PS3 games. To further differentiate the two consoles, Sony should also encourage game developers to make more family-oriented titles and kid games for the PS2.

Whereas Sony is not in a hurry to push all the PS2 owners to upgrade, it should avoid having PS2 owners buy the Xbox 360. To do this, Sony can encourage retailers to offer PS2 owners the option of trading in their old machines for the PS3, and to resell the used PS2 to recoup the discount. This provides a mechanism for the PS2 to move from the high-end market to the low-end market. Alternatively, Sony can offer a discount price or free games to old PS2 owners who want to buy the PS3. This can conceivably be implemented by introducing a reward point system for the PS2 and PS2 games.

One caveat for this approach is that targeting at the lower end of the market may hurt Sony's image as the premium game console provider. Besides, Sony is less well established than Nintendo in the lower end market.

#### **d. Complements and Synergies**

Games are obviously the most important complement for a game console. The video game industry has been characterized as a "hit" business. The hit games, also called "killer apps" [14], are so desirable that they induce consumers to spend several hundred dollars on the game console and accessories necessary to play them. The PS3 currently needs a full lineup of new games to attract potential PS3 buyers. Besides the previously described PS3 games, Sony should try to push the development of hit games such as the Final Fantasy series. It also needs games that can run on multiple platforms but showcase the unparalleled power of the PS3.

One of Sony's core advantages over Microsoft, and Nintendo to a lesser extent, is its ability to generate a large quantity of game titles through strong networks of game publishers [15]. Sony can leverage this advantage to build a large number of games for the PS3, even though currently it is not leading in market share. In addition, since large game publishers have considerable buyer bargaining power and Sony needs to build some PS3 exclusive games, Sony will have some incentives to build its own game development teams. This upstream vertical integration can be accomplished through acquisition of independent game studios. In fact Sony has recently started to develop games in-house.

Another core advantage of Sony is its diverse business assets, especially in consumer electronics, music recording and motion pictures. These assets make it possible for the PS3 to benefit from synergies. Sony should take advantage of its top position in consumer electronics and media market. As is discussed earlier, effective marketing is of great importance to the success of the PS3. A series of cross-marketing activities should be implemented to promote the PS3. For example, Sony can giveaway free PS3 games and Blu-Ray movies to its Bravia high-definition television (HDTV) buyers to encourage PS3 purchase. Sony can adopt the highly praised PS3 interface into other products such as HDTVs. In addition, PS3 games can be developed as tie-ins for the hit movies produced



by Sony Picture.

Furthermore, Sony should exploit synergies between different products as a way to maximize the value of the PS3. For example, cooperation between Sony's game division and its motion picture and music recording divisions will not only provide content for PS3's online service but also boost sales of the music and the movies. Another example has to do with the high-definition photo-viewing feature of the PS3. Sony can adopt the PC-based photo editing software developed for its Cybershot digital cameras into the PS3 format. The PS3 can also be wirelessly connected to Sony's PictureStation high-definition photo printers. The added features of high-definition photo editing and easy printing will substantially increase the value of the PS3 for potential buyers that are photography enthusiasts. Last but not least, as the PS3 currently doesn't have a remote control for its Blu-Ray playback, Sony should develop one that controls all components of a Sony home theatre system.

Though Sony should be creative in exploiting synergies, it should also avoid going to extremes. Products that are over engineered or too complicated will simply scare average customers away.

#### **e. Others**

Apart from the most important points described above, there are various other measures that Sony can take to increase the value of the PS3. For example, Sony should seek to improve PS3's online services that include online gaming, IP-HDTV, movie and music download, and online chatting. Whereas it is unwise for Sony to compete head to head with Microsoft that has core capabilities in the internet business, it should follow the move of Microsoft. Sony should also try to identify niche markets in which it has a core competency such as games. One candidate is the massive multiplayer online role-playing games (MMORPGs).

Sony can also introduce an online pizza order system for the PS3 to serve hardcore gamers who don't want to take their hands off the PS3. There will be little incentive for Nintendo to imitate the practice since it has very different customer demographics. Microsoft may imitate, but at least by doing so, Sony will please its diehard customers. Sony should also build and maintain blogs, forums and fan sites for the PS3 to help create a club culture between the hardcore PS3 players.

In addition to increasing values, Sony should seek to reduce the cost of production as well. The current PS3 boxes are packed with both the PS2 and the PS3 chipsets to offer backward compatibility with PS2 games. Replacing the PS2 chipset by software emulation will significantly lower the cost of production. The cost of Blu-Ray device will

also drop over time as a result of manufacturing scale-up and improvements. Analysts also suggest that Sony should raise demand for its semiconductors to recoup the billions of dollars invested in the chip factories and to reduce the cost of the PS3 [16].

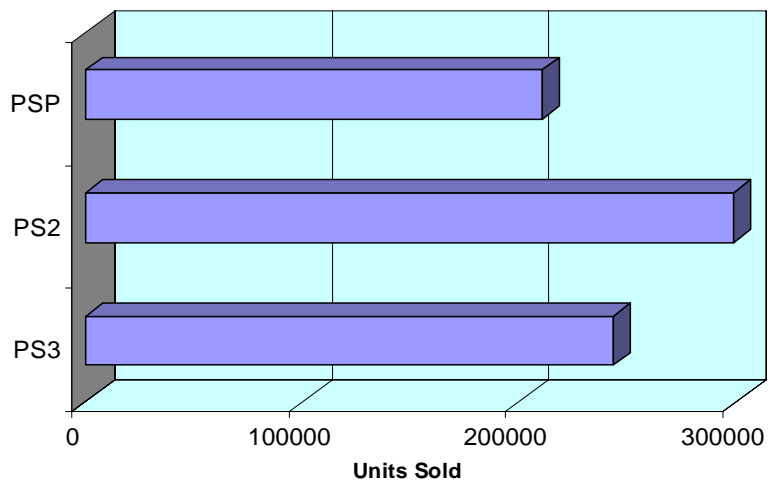
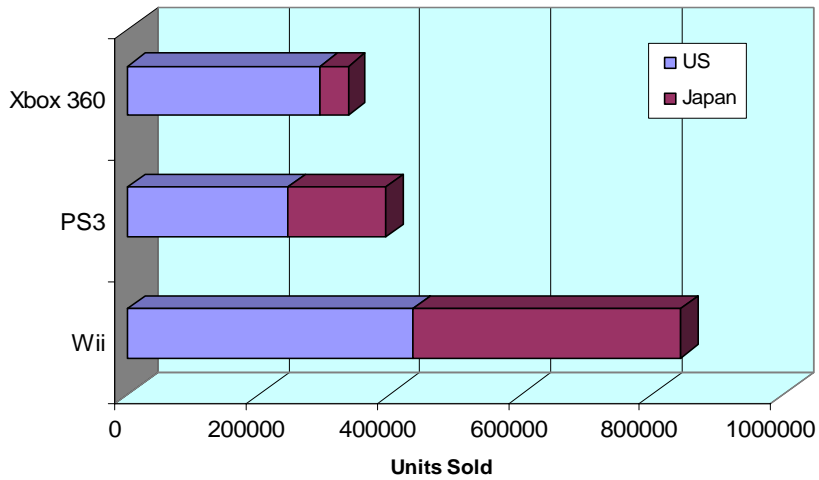
## **Part IV. Conclusions**

To maintain dominance in the video game industry with its next-generation console PS3, Sony needs to rapidly build a large enough installed base. According to our research and presentation, we propose that Sony should take a core strategy of value maximization and powerful marketing. The key components of the value maximization strategy include imitating the Wiimote, retaining PS2 owners while encouraging them to gradually upgrade to the PS3, and exploiting Sony's core competencies in games and its diverse business assets. Sony should also engage in marketing to help consumers fully appreciate the value of the PS3 as both a powerful game console and a home entertainment hub. It should be noted that a large part of the marketing strategy is based on the premise that Blu-Ray will become the standard next-generation DVD format. However, Sony has yet to win the standard battle. The PS3 represents Sony's effort to push Blu-Ray into homes and gather industry support. A detailed strategy for Sony to promote Blu-Ray will be addressed elsewhere.

**Exhibit 1. [3]**

Top: Sales of Wii, PS3 and Xbox 360 in the U.S. and Japan during January, 2007

Bottom: Sales of PS2, PS3 and PSP in the U.S. during January, 2007



**Exhibit 2. Comparison of Specifications of PS3, Wii and Xbox 360 [17]**

<b>Console</b>	<b>PS3</b>	<b>Wii</b>	<b>Xbox 360</b>
<b>Cost</b>	\$499 with 20GB drive, \$599 with 60GB drive	\$249 (include <i>Wii Sports</i> )	\$299 with no hard disk \$399 with 20GB drive
<b>Processing Power</b>	Eight-core Cell chip running at 3.2 GHz	Broadway chip running at 729 MHz (4x slower than the Cell)	PowerPC chip with 3 cores running at 3.2 GHz
<b>Game Media (assuming dual layer)</b>	50 GB BD-ROM (Blu-ray)	8.5 GB DVD	8.5 GB DVD 30 GB HD-DVD
<b>Maximum Resolution</b>	Up to 1080p via HDMI	Up to 480p via component cable	Up to 1080p
<b>Backward Compatibility</b>	Plays 97 percent of all PS1 and PS2 games	Plays all GameCube games	Partially compatible with Xbox games
<b>Other Features</b>	Blu-ray movie playback, DVD playback, Super Audio CD playback, free PlayStation Network access, PSP interoperability	Free WiConnect24 service, DS connectivity	HD-DVD drive is optional for 199\$, Xbox Live Silver (free) and Gold (50\$/month), CD playback, WMV playback
<b>Target Demographic</b>	Hard-core gamers, PS2 owners	Nintendo fans, kids, family	Hard-core gamers, sports fans
<b>Number of Games Available by End of 2006</b>	19 (7 exclusive to PS3)	31 (11 exclusive to Wii)	N/A
<b>Number of games Based on Cartoons</b>	1	7	N/A
<b>Average EGM Review Score for Launch Games (out of 10)</b>	6.1	6.4	N/A

**Exhibit 3- 2006 Combined Top 10 Video Game Titles in the U.S. [18]**

2006 Combined Top10 Video Game Titles Sorted By Units			
Rank	Title	Platforms	Publisher
1	Madden NFL 07*	360,Wii,PS3,PSP,NDS, XBX,PS2,GCN,GBA	Electronic Arts
2	Cars	360,Wii,PSP,NDS, XBX,PS2,GCN,GBA	THQ
3	Lego Star Wars II: The Original Trilogy	360,PSP,NDS, XBX,PS2,GCN,GBA	LucasArts
4	NCAA Football 07	360,PSP,XBX,PS2	Electronic Arts
5	New Super Mario Brothers	NDS	Nintendo
6	Need for Speed: Most Wanted	360,PSP,NDS, XBX,PS2,GCN,GBA	Electronic Arts
7	Gears of War**	360	Microsoft
8	Call Of Duty 3	360,Wii, PS3, XBX,PS2,GCN,GBA	Activision
9	Lego Star Wars	XBX, PS2,GCN,GBA	Eidos
10	Fight Night Round 3	360,PS3,PSP,XBX,PS2	Electronic Arts
<p>*Includes Hall of Fame Edition  **Includes Collector's Edition  Source: The NPD Group / Retail Tracking Service</p>			

## Appendix -Six Forces Analysis

### 1. Entry Barrier

- Video games are a standard-based industry with important first-mover advantage
- Network externality, potential entrants are caught in the chicken and egg situation
  - Need a large installed base to secure third party publishers
  - Need third party publishers to grow the hardware
- Brand recognition
- “killer apps”
- The market has room for only two or three successful systems at any one time
- Strong Learning curve
- Electronics and technology suppliers as potential entrants
  - Strength
    - Have technological expertise necessary to build a game console.
    - Sony and Microsoft are examples of successful entry.
  - Weakness
    - Crowded market with dominant players
    - Strong learning curve, may be done by hiring an experienced staff
  - Entry by a supplier is possible but hard
- Game developers as potential entrants
  - Strength
    - Experience in making games
  - Weakness
    - Little experience in mass marketing and electronics manufacturing.
    - A large efficient Scale is required
    - Technology
- Bottom line: there are formidable entry barriers for any potential entrant

### 2. Supplier Bargaining Power

- Suppliers
  - Electronics: Seagate (drives), Samsung, NEC/Tokin, smaller suppliers
  - Technology Partners: Toshiba and IBM (Cell Broadband Drive)
- Suppliers of non-electronic components have little or no bargaining power
  - Case, cables, packaging and manuals
  - Readily available from a wide array of substitutes
- Sony manufactures all of the PS3's critical components itself or owns the technology rights to the items being produced for them.
- Many components that are manufactured for the PS3 to Sony's specifications by an outside vendor are labeled “SONY”. Substitution of these nameless suppliers

would go unnoticed by Sony's customers.

- Sony has a reputation in the electronics industry such that suppliers desire to sell to Sony.
- The ability for Sony's suppliers to bargain prices with Sony is weak.
- Competition among electronics manufacturers is high.
- None of Sony's Suppliers present a threat of entering the game console market on their own.
- The specialization that some of Sony's suppliers have done to adapt their products to the PS3 represent a switching cost for bringing in a substitute. However the most critical and complex components have been kept under Sony's control.
- Worldwide shortages of 405 nm blue-violet laser diodes have been blamed for a slow introduction of both Blu-ray and HD-DVD products. Sony manufactures these diodes and has been accused of preferentially supplying the PS3 ahead of other customers.

### **3. Buyer Bargaining Power**

- Individual game console buyers have no bargaining power.
  - Sony must produce a significant network of PS3 users to profit
  - The buying trends of the game console buyer have bargaining influence, but there is no coordinated bargaining by these customers as a group.
- Game Licensing Buyers have a significant amount of bargaining power as buyers.
  - Publishers: EA (Electronic Arts), Sega, Take Two Interactive, Activision
  - The number of game manufacturers is limited.
  - Top-level game manufacturers will be capable of producing the most successful games, but no-name manufacturers with a unique and compelling game concept have historically upturned this side of the industry and must be continually monitored.
  - PS3 needs a large installed base to attract third-party game publishers
  - Exclusive licensing of sports content gives game manufacturers an edge
  - Competition among game manufacturers has recently narrowed the field.
  - Sony's can weaken the bargaining power of these customers by presenting them with the largest network of PS3 users as possible.

### **4. Substitute**

- PC games
  - Revenue exceeded \$970 million in 2006
  - commonly regarded as different market in the game industry
  - The genres of games differ
  - 200 million customer base in the world

- Console game emulators
- Game consoles and handhelds by other providers
  - Nintendo's Wii, DS
  - Microsoft Xbox 360
- Other Game consoles and handhelds by the same provider
  - PlayStation 2 (PS2)
  - PlayStation Portable (PSP), which is also a complement
- Non-video game substitutes
  - TV
  - Books
  - Outdoor Activities
  - Study
  - The list of non-video game substitutes is endless

## 5. Rivalry

- Market under oligopolistic control at the hardware level
- Indirect network effects
- Inter- and intra-generational rivalry
  - PS3 vs. Wii and Xbox 360
  - PS3 vs. PS2
- Non-interoperability of consoles lessens cooperation
- The market has room for only a few successful systems at any one time
- No direct price competition due to product differentiation
- A strategic price drop is typically adopted to attract customers during introduction
- a joint war between the game consoles and the new high definition standards

## 6. Complementary

- Games
  - PS3 offers backward compatibility with PS2 and PSone games
  - Wii offers backward compatibility with Gamecube games
  - Xbox 360 offers backward compatibility with Xbox games
- Home theatre system for the PS3 and the Xbox 360
- Music and movie
  - PS3 and Xbox 360 support music CD playback
  - PS3 and Xbox 360 support DVD playback, Nintendo plans to update the software of the Wii to play DVD movie
  - PS3 plays Blu-ray movie
  - Xbox 360 plays HD DVD movie
- Internet services



- Game demo downloading, chatting
  - Xbox Live for Xbox 360 features movie and TV program downloading for a fee
  - Nintendo has old Nintendo games to download for a fee
- Game rental service, a new industry created by the relatively high prices of games
- Accessories
  - Xbox licensed Logitech to make accessories such as game controller
  - Some games need a special accessory to play, such as a fake guitar for Guitar Hero (PS2)

## References

1. Shankar, V. and B.L. Bayus, *Network effects and competition: An empirical analysis of the home video game industry*. Strategic Management Journal, 2003. **24**(4): p. 375-384.
2. James Conley, E.A., Priti Chinai, Elise Lipkowitz and David Perez, *Use of a Game Over: Emulation and the Video Game Industry, A White Paper*. Northwestern Journal of Technology and Intellectual Property, 2004. **2**: p. 1-30.
3. Lewis, L., *Wii's are the champions as Xbox and PS3 play catch-up*, in *Financial Times*. February 22, 2007. p. 17.
4. Alabaster, J., *Sony Is Predicted To Miss Its Goal For Sales of PS3*, in *The Wall Street Journal*. January 15, 2007.
5. Fackler, M., *Hobbled by Disappointing Sales and a Loss at the Game Unit, Sony's Profit Drops 5%*, in *The New York Times*. January 31, 2007.
6. Alpeyev, P., *Sony may cut prices for flagship consoles*, in *The Vancouver Sun*. 2007: British Columbia.
7. Clements, M.T. and H. Ohashi, *Indirect network effects and the product cycle: Video games in the US, 1994-2002*. Journal of Industrial Economics, 2005. **53**(4): p. 515-542.
8. *The Golden Oldie of Gaming*, in *BusinessWeek Online*. January 8, 2007. ([http://www.businessweek.com/magazine/content/07\\_02/b4016058.html](http://www.businessweek.com/magazine/content/07_02/b4016058.html))
9. Schiesel, S., *A Weekend Full of Quality Time With PlayStation 3*, in *The New York Times*. November 20, 2006.
10. Teece, D.J., *Capturing Value from Technological Innovation: Integration, Strategic Partnering, and Licensing Decisions*, in *Technology and Global Industry: Companies and Nations in the World Economy*. 1987, The National Academies Press. p. 65-94.
11. Gibson, E., *Microsoft, Nintendo Sued Over Alleged Patent Infringement*. July 8, 2006. ([http://www.gamesindustry.biz/content\\_page.php?aid=18788](http://www.gamesindustry.biz/content_page.php?aid=18788))
12. *Microsoft, Nintendo Hit by Separate Suits; Both Remain Silent*, in *Consumer Electronics Daily*. December 11, 2006.
13. *Cumulative Production Shipments of Hardware/ Playstation 2*. December 31, 2006.
14. Neuman, W., *The Future of the Mass Audience*. 1991: Cambridge University Press, Cambridge.
15. Chronis, G., *It's war: Xbox team goes for the throat*, in *Games Business*. April 1, 2000. p. 1,6.
16. Fackler, M., *Playstation 3's costs cut into Sony profit*, in *The International Herald Tribune*. January 31, 2007.
17. *PS3 and Wii Come Head to Head*, in *Electronic Gaming Monthly*. Jan 12, 2007. p. 86.
18. *2006 U.S. Video Game and PC Game Retail Sales Reach \$13.5 Billion Exceeding Previous Record Set in 2002 By Over \$ 1.7 Billion* January 19, 2007, The NPD Group. ([http://www.npd.com/press/releases/press\\_070119.html](http://www.npd.com/press/releases/press_070119.html))