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PlayStation 4 vs. Xbox One

Competitive Analysis of the Video Game Industry

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1. Introduction

In 1972 the first video game console called Magnavox Odyssey was released to the market. Over the timespan of more than 40 years, the video game console industry experienced market entrances of new companies (e.g. Nintendo in 1985), market exits of unsuccessful companies (e.g. Sega in 2001) and even a declaration of its death in 1985.¹ However, this industry is still living and thriving after 2013 – when Sony Computer Entertainment Inc.’s (Sony) console PlayStation 4 (PS4) and Microsoft’s console Xbox One were released (both November 2013) – with a market value of several billion dollars for consecutive years as can be seen in Figure 1.

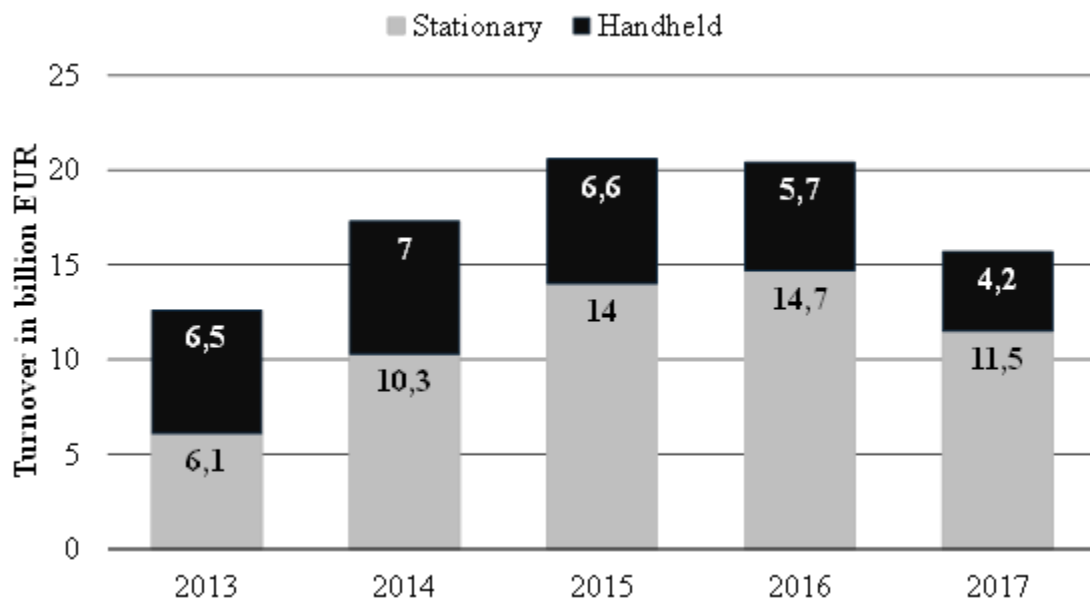


Figure 1: Yearly Turnover of the Video Game Console Industry²

Both Microsoft and Sony released their respective newest video game console, i.e. Xbox One and PS4, in the major markets of America and Europe. These companies compete against each other head to head based on the value perception of their product. The question which arises is what kind of strategies these competitors have chosen in order to convince their customer base to adopt their respective video game console around the time of their launches, and why Sony has obviously been more successful with its PS4 than Microsoft with its Xbox One (see sales figures in Figure 2). The following analysis will be done from an outsider perspective which does hold limitations such as the real royalty rates between video game developers and is based on freely available information sources and recommended retail prices of the US market at the time of writing.

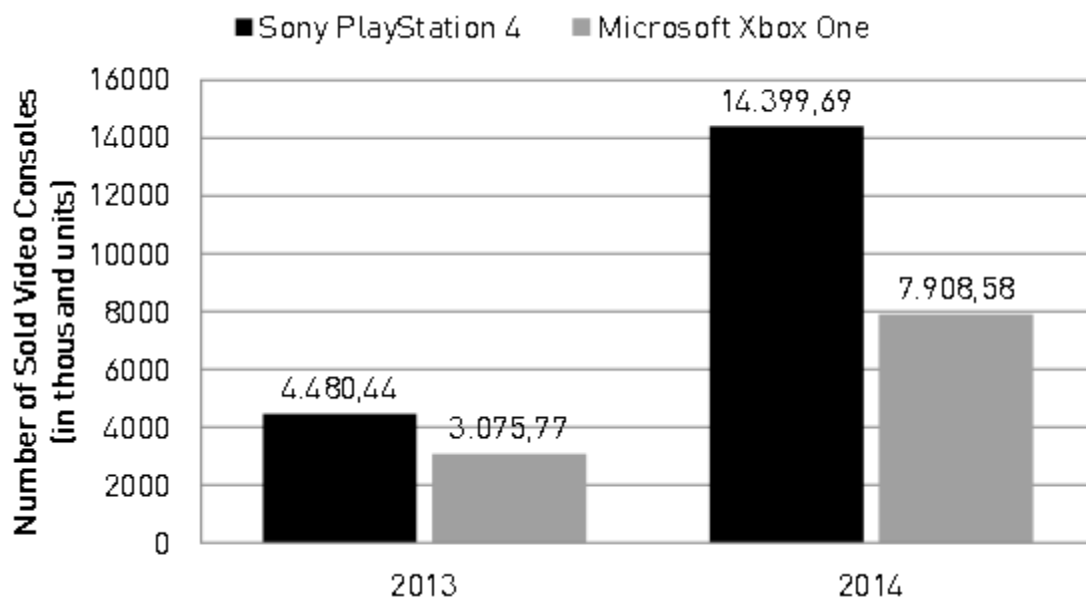


Figure 2: Monthly Sales Figures of Xbox One and PS4 (in thousand units)³

2. The Video Game Console Industry

The video game console industry counts as a two-sided market where network effects exist: Video game consumers buy video game consoles in order to gain access to as many video game softwares as possible and conversely, video game producers choose a console to reach a possibly large number of consumers. In 2012 this oligopolistic industry consisting of companies Sony, Microsoft and Nintendo achieved an estimated worldwide market volume of 61.3 million units and a market value in the same year of estimated \$19,243.3 million.⁴ To sell this amount of video game consoles, both video game consumer's and video game producer's expectations towards the success of a console have to be met. In other words, video game consumer and video game developer adopt a particular console depending on the expected value from the hardware, the access to video game software and other complementary services, e.g. movie player functions.⁵ Therefore, the following chapters deal with how video game producers can shape the value expectations regarding the console's hardware, its video game software and other complementary services.

3. Hardware

Essentially, video game consoles are nothing else but a computer dedicated for playing video games meaning consoles have components such as processor, main memory, hard disk, input devices and media devices (e.g. Blu-Ray Drive) where the clock speed of the processors, the variety of digital formats playable with the media device and the space of the memory

components matter. However, in comparison to expensive personal computers dedicated for playing such games, video game consoles give consumers a cheaper gaming platform in which hardware component upgrades happen only in cases of a redesign of the console or the launch of a new generation console, but also in which all consoles and their respective peripherals are proprietary, meaning peripheral hardware for one platform is incompatible with the competitor's platform or even with the own console from a previous generation. In addition, consumers expect high quality game titles which make full use of the hardware of the video game console. For video game developers, the specifications of the hardware components build the framework in which the games can be produced and played. Thus, a lack in technical capabilities of the hardware limits desired game designs, but makes it easier to develop software.⁶ So video game consumers and developers might adopt a console because either it is cheap to purchase or easy to develop games for, respectively. Additionally, a platform might be adopted due to offered differentiation regarding hardware specifications.

Xbox One

The video game console Xbox One used an AMD processor as central processing unit (CPU) with eight cores performing 1.75 Gigahertz (GHz). The graphic processing unit (GPU) also from AMD was using 12 computing units and had a clock speed of 853 Megahertz (MHz). The hard disk storage amounted to 500 Gigabyte (GB) and couldn't be removed. However, customers had the possibility to expand the storage space by connecting the console to an external hard disk via universal serial bus (USB) and by using cloud based storage. In addition, the Xbox One possessed a Blu-Ray disk (BD) drive which also played digital versatile discs (DVDs) and three USB 3.0 ports.⁷

The basic Xbox One bundle consisted of one Xbox One console, one wireless controller which needs AA batteries or a battery charge kit not included in the bundle, a camera based motion and voice controlled peripheral device called "Xbox One Kinect", a headset and a high-definition multimedia interface (HDMI) cable. The price for this bundle was \$499.99. Additional controllers cost \$59.99 per piece.⁸

Both Sony and Microsoft revealed the price of the console bundles at the Electronic Entertainment Expo (E3) in June 2013 making clear that the PS4 bundle would be exactly \$100 cheaper than the Xbox One.⁹ However, the announcement of clock speed improvement to GPU (increasing its clock speed from 800MHz to 853MHz) and CPU (increasing its clock speed from 1.6GHz to 1.75GHz) in August 2013 and September 2013, respectively, instead of a price cut shows that Microsoft did not consider cost leadership as a position at launch.¹⁰

Seemingly, these decisions did not work fine for Microsoft since the global sales figures showcased 7 million units sold for the PS4 in comparison to the 5 million of Xbox One. This may be the reason why Phil Spencer, the head of the Xbox division, announced on May 13 2014 that the Xbox One bundle would be offered without the Kinect camera and thus, the price would be reduced to \$399 making it minimally cheaper than its competitor PS4.¹¹

PlayStation 4

The specification of the platform PS4 was similar to the Xbox One. The PS4 also used an AMD CPU with 8 cores, but the clock speed was expected to be only 1.6GHz making the Xbox One CPU slightly faster. However, PS4's GPU from the same processor producer as the Xbox One had the edge in this department with 18 computing units and a clock speed of 800MHz. The real life difference of this specification was described by Cunningham as follows: "The Xbox One can render a 3D image that looks exactly the same as one rendered by the PS4, it just can't do it quite as quickly."¹² Regarding the hard disk, Sony took a different approach than Microsoft. Although the PS4 had the same hard disk capacity of 500GB, the hard disk was removable and thus, could be replaced by a hard disk with a higher capacity. Further, cloud based storage was also possible on Sony's console. However, expanding the storage space of the console by connecting it to an external hard disk via USB cable was not possible on the PS4. The PS4's main memory amounted to 8GB, but it used a modern and faster version than the Xbox One. In addition, the PS4 possessed a BD drive which also played DVDs and two USB 3.0 ports.

The basic bundle consisted of one PS4 console, one wireless controller which had a built-in battery and could be charged via the included USB cable, and a headset. The price of the bundle was \$399.99. Additional controller and the peripheral camera cost \$59.99 per piece.¹³

Before Microsoft upgraded the Xbox One's CPU and GPU, Sony's PS4 had the edge on the clock speed of both CPU and GPU. Now the Xbox One was faster than the PS4 regarding the CPU. Still, the main selling point of the PS4 was its lower retail price. The price difference of \$100 to the old Xbox One bundle was in favor of Sony. Even if one takes into account that the peripheral camera was included in the Xbox One bundle, the full price of buying a PS4 bundle and the additional camera amounted to \$459.98 and thus, was still lower than Microsoft's previous offer.

4. Video Game Software

The relationship of the increasing value of a video game console by every additional video game customer purchasing a console for the access to video games and every additional console complementor, i.e. video game developer, supplying numerous video games for a console in order to reach their consumers is described as an indirect network effect. The video game console producer gains revenue mostly from royalties from each video game sold.¹⁴ Thereby, the importance is to attract both sides and video game console producers have several ways at disposal.

One reason for video game producers to make games for a console is the reduced fixed cost of development since the console is offered as a platform with distinct hardware specifications.¹⁵ To further facilitate the development of video games on one's own console, console-specific development tools to program video game software, also known as development kits, can be offered at a low price to video game developers and can be made easier to use, for example by basing it on a widely used standard.¹⁶ Video game console producers can further reduce cost for the video game developer by extensively using the internet. Nowadays, video game consoles have their own internet platform. Thereby, the developers do not need to find own solutions to connect video game players from all over the world for multiplayer opportunities.¹⁷ In addition, consoles having internet capabilities extend the opportunities of online distribution for video game publishers. This decreases the cost for the packaging of video games and the distribution to retailers (e.g. GameStop) and consumers. Moreover it enables new value streams, such as micropayments from video game consumers for new in-game items. Further, the video game publishers can have direct contact with their consumer for market research reasons (e.g. information on which games a consumer plays, feedback on video games).¹⁸

Conversely, video game consumers may adopt a console to access a variety of video game software. However, many video game developers release their games on several console platforms also known as multi-homing or multiplatform to spread the risk of failing. This leads to less differentiation between console competitors and thus, a decrease in unit sales at least in the beginning of the life cycle. Therefore, console-exclusive titles or game franchises increase the value and possibly warrant the adoption of a console or at least discourage the adoption of a platform from the competitor. Such video games are called "killer apps". In addition to that the video game console producer can decide to make the console backwards compatible for the older titles from the previous console generation. This might be especially important at the launch of a new console generation when the game catalog is small.¹⁹ A barrier to sharing video

games across regions is the use of region lock-out hardware and software on a console making video games from one encoding region incompatible with another region.²⁰ A region-locked console would, however, deprive video game consumers any possibilities to play a game which is not released in their region.

The economics of video game consumers are also enhanced by the console's online capabilities. An apparent use is the possibility to come into contact with fellow video game players and play with or against them. Especially, friends want to purchase the same platform to play together. Therefore, every additional console connected to its internet platform, i.e. the installed base, would increase the value for the console customer. Regarding online distribution, consumers can have instant access on demand to a variety of games, even if the games are out of print, and game add-ons, such as new levels or new costumes for game characters, on the console's own internet retail platform for free or in exchange for micropayments. The ease of distribution by online means has another positive side effect for video game console producers. If development kits are provided for small amounts of money or for free to everyone, interested video game consumers can develop their own indie titles or modifications to a video game software, also known as "mods", for a console and offer them on its online retail platform.²¹

A conflict in interest exists concerning the possibility of sharing or reselling video game software for consumers. Consumers might clear their video game catalog for reasons like they finished the game, they genuinely do not like the bought products or they want to make space. Therefore, the direct network effects for consumers can also be applied in case of resale and sharing of video games, meaning every additional console owner constitutes for an additional opportunity to sell or lend games to. For the video game developers and console producer, the possibility of a second hand market or share of games reduces revenues from first hand sales or royalties.²²

The next step to counter these issues might be the proliferation of cloud-based technologies or rather cloud gaming. This means each input command from the player is transferred over the internet to the dedicated servers of the video game platform, the actual cloud, which runs the video game software and the computed action sequence is streamed over the internet to the screen device of the player. Thereby, the need for costly hardware computing power is transferred from the customer to the server provider.²³ The advantage for video game content providers is the limited possibilities of piracy and sharing.

Xbox One

To attract more independent video game developers for the Xbox One, Microsoft introduced its own video game publishing platform called Independent Publishing Program for Xbox One (ID@Xbox). With this platform, registered independent developers had a lower barrier to access the market by digital distribution through their online platform Xbox Live and were provided with developer tools for free. In addition, they could use the full functionality of the console from online multiplayer options to the use of the Kinect camera. To further facilitate the development of new video games, ID@Xbox had integrated the developer tool platform from Unity Technologies which was used by 2.9 million developers.²⁴

At the launch of the console, eleven disk-based multiplatform titles and six exclusive titles were offered. Besides, the console was not backward compatible to Xbox 360 games. However, a more impactful feature of the Xbox One was the plan to fully integrate cloud gaming enhancing the customer's economics. Microsoft planned that the console required connection to the internet to use its cloud system integrated in its online platform Xbox Live, e.g. for uploading the latest savegame. When consumers bought video game software, disc-based or digitally through Xbox Live, the software had to be installed on the console device which was a departure from the previous generation, and had to be stored in the cloud of a specific Xbox Live account. Further, the subscription service Xbox Live Gold with its benefits such as online multiplayer gaming was also assigned to an account. Thus, the benefit for the customer was that they have access to their game catalog, savegame and Xbox Live Gold benefits on almost any Xbox One after signing in with one's own account without the need of discs. The only restriction to customers' access to their game catalog depended on the content lock-out in certain regions. The benefits for video game publishers was that the Xbox One allowed them to implement their own resale scheme meaning they could decide about the actual possibility of resale or even the possibility to giving the software to other people, and about the business terms including possible transfer fees with second hand retailers. Further, giving software could only be done once and only to people who are longer than 30 days in one's friend list.²⁵

But Microsoft focused too much on implementing the newest cloud technologies and did not notice the perceived degree of cost for the customers in comparison to its benefits. Customers were concerned about problems regarding the availability of broadband. Further, in case of internet connection disruption, offline gaming on the Xbox One was only possible for 24 hours or when accessing one's game library from another console, for one hour after its last connection to the internet for authentication reasons. The term "Because every Xbox One owner

has a broadband connection [...]”²⁶ might be understood as every consumer who has not is effectively removed from the offered game experience. Although broadband is more diffused today, another concern might have been the threat of throttling internet speed by internet service providers (ISP) due to high usage. For example, the German ISP Deutsche Telekom announced in April 2013 that it had planned to throttle its customers using a bandwidth up to 16 Megabits per second (Mbps) down to 384 Kilobits per seconds (kbps) after using more than 75GB per month.²⁷ Considering the recommended broadband speed of 1.5Mbps to ideally use Xbox One’s cloud, such a throttle would disrupt the game play since the latency between command input and video stream output would increase. Another concern was the possible loss of disc-based resale or game sharing capability. All these issues negatively shaped the value perception for customers, led to the abandonment of this strategy announced after E3 and the adherence to the dominant design of offline gaming opportunities and disc-based resale and game share capabilities. However, there was now no possibility to resell or share downloaded titles. In addition, it was announced that the Xbox One games would not be region-locked.²⁸

PlayStation 4

Sony had an own developer network called Sony Computer Entertainment Developer Network (SCE DevNet) and it reduced the entrance barriers to the market for registered developers by allowing them to self-publish their products on Sony’s online platform PlayStation Network (PSN). They offered free consoles and loans of developer kits.²⁹ In addition, Sony also established a partnership with Unity Technologies to let PS4 developer gain access to its widely used developer platform.³⁰

The disk-based game catalog at launch was eleven multiplatform titles and two exclusive titles.³¹ Seemingly more important than games for Sony was the declaration in its first announcement of the PS4 in February 2013 stating the console was “Gamer Focused [...]”.³² To convince these gamers, the console should be cheap, easy to use and adhere to the dominant design.³³ Sony’s strategy was harmonized around these features to set them apart from the previous strategy of Microsoft namely the possibility to completely play offline and the ease of selling, sharing and giving disc-based software, and non-existence of transfer fees for digital content. However, backward compatibility of the software from previous console generations was not given, PS4 game software had also to be installed in the console before it could be played and downloaded games couldn’t be sold or lent. Further, the PS4 was not region-locked although Sony allowed game publishers to decide if they put such restriction which was seen as unlikely. Regarding online features, PS4 customers had access to their downloaded game on

any PS4. To play online multiplayer however, the PlayStation Plus (PS+) subscription service was needed. In exchange, PS+ users had cloud-based savegame opportunities.³⁴

As mentioned before, the whole strategy was based on exploiting the negative perception of the cloud strategy of Xbox One. Especially during the 2013 E3 presentation, all the game related features of the PS4 were announced by explicitly dismissing the respective Xbox One features for the dominant design.³⁵ Moreover, Sony released on the same day a YouTube video tutorial for sharing disc-based games consisting just of one person handing over a game to another person in a few seconds.³⁶ Thereby, they were mocking Xbox One’s rather complicated sharing system.

Sony’s strategy concerning video game software seemed to have been paying off. Figure 3 shows that in 2014 four of the top ten video games were for the PS4 while only one video game amongst the top ten was for the Xbox One.

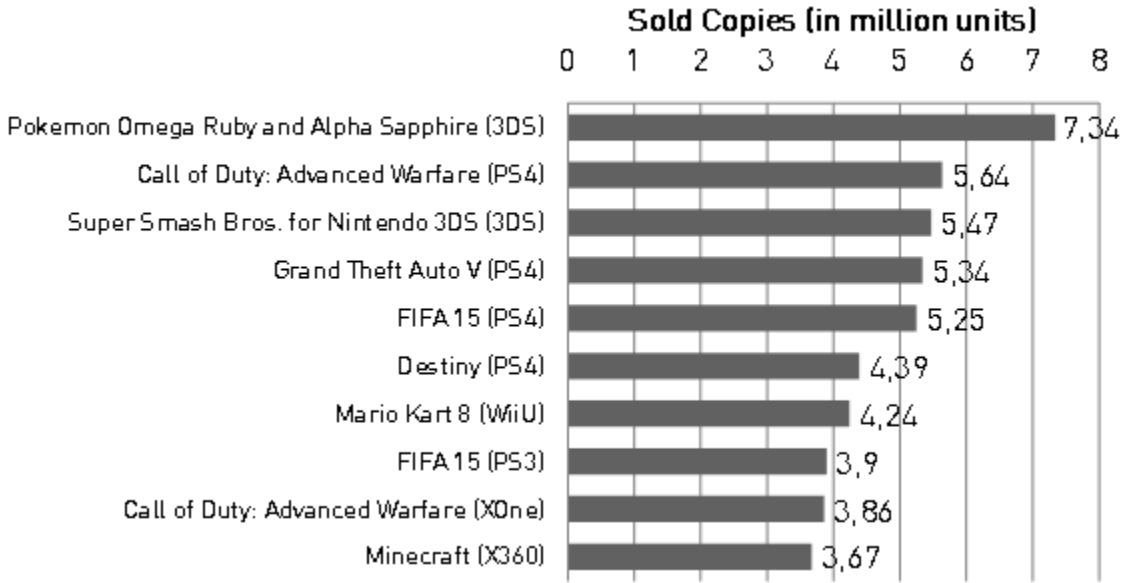


Figure 3: Retail Sales of Video Games (in million units)³⁷

5. Other Complementary Services

The main purpose of video game consoles is to give entertainment by playing said video games. However, video game producers aim now to offer an all-in-one solution for entertainment besides only game playing due to the general phenomenon of convergence devices in the digital industry. In a study in 2014, the Entertainment Software Association³⁸ stated that the video game consoles were also used for watching movies, shows and live content, as well as for listening to music. This was possible because modern video consoles had playback devices for media formats, such as DVD and Blu-Ray Disk (BD), and the proliferation of broadband. The

video game console producer could profit from these complementary services by building partnerships with online video and music rental stores (e.g. Netflix) and integrating them in their online subscription scheme.³⁹

In addition, video game consoles also integrated chat services and social media services (e.g. Facebook, Twitter). In combination with game related achievement information and grouping features, networking, communication and self-portrayal among the users of a console was facilitated and thus, switching cost were increased.⁴⁰

A new development in the video game industry at that time was the popularity of video game streaming communities, i.e. electronic sports (E-sports) and the so-called “Let’s Play” community. The former broadcasted sophisticated competition between video game players for awards. The latter broadcasted their game play experiences in a casual manner on video sharing websites (e.g. YouTube) and on dedicated live-streaming websites like TwitchTV.⁴¹ Video game console producers could gain additional complementors if they integrated such services in their system. Both Xbox One and PS4 claimed to be entertainment consoles.⁴²

Xbox One

The Xbox One could play DVD and BD, worked as an online retail store through Xbox Live and had over 170 apps enabling the console to be used as an online content device by integrating, for example, the video streaming service Netflix as an app. Concerning the latest unit sales report of 5 million sold consoles, a hypothetical number of 5 million Xbox One users existed to play with or against, and to compare their activity rewards called Achievement for self-portrayal reasons assuming every Xbox One owner signs in to the online platform Xbox Live. Further, Xbox One not only enabled for free to upload, stream and watch shared online game play videos by integrating an own digital video recorder, and TwitchTV and Youtube apps, but also offered a video editing software called Upload for Xbox Live Gold subscribers and let these apps be controllable with Kinect. To enhance gamers, Microsoft put its Kinect camera with built-in microphones as a central solution. Kinect understood several commands ranging from simple turning on or off the console to inviting friends and in this case, turning on the game play broadcast via voice control.⁴³

PlayStation 4

The complimentary services of the PS4 extended to a functioning BD/DVD player, an online retail store through PSN and an online video content device through integrating apps such as Netflix.⁴⁴ However, the amount of apps was smaller in comparison to the 170 of Xbox One. The PS4 had only 17 apps in May 2014.⁴⁵ In return, the gamer community could be bigger on

the PS4 because of 7 million hypothetical PSN users worldwide based on the latest unit sales report.⁴⁶ The interaction among these users could take place in multiplayer matches or in comparing the earned game related trophies for self-portrayal reasons.⁴⁷

A special feature of the PS4 was the so-called Share button of its controller. At the press of this button, PS4 users could upload screenshots or game play videos on social media platforms such as Facebook or Twitter, save such media on the hard drive or on a USB drive, or start broadcasting game play live streams through services like TwitchTV. Especially, these live stream services were highly integrated in the PS4. Sony allowed user generated videos to be archived on the live stream servers to be watched later on. In addition, Sony offered PS4 owners a free editing tool called Share Factory to further enhance the video game streaming communities.⁴⁸ Instead of the less efficient procedure of capturing the video from the video screen, editing on an external computer device and then uploading to the particular social media service, this procedure created another point of contact with PS4 users.⁴⁹

6. The Delta Model⁵⁰

The main task of a strategy is to find the unique position of one's organization where economic rents can be produced in a given economic environment with all its players. This concept of positioning can be found in the Delta Model developed by Arnaldo C. Hax and Dean L. Wilde II. With a distinct set of frameworks, this model helps to develop, formulate and implement strategies as well as to analyze the competitive positions of competitors with the help of the so called Triangle. The Triangle (Figure 4) consist of three strategic options which have overall eight strategic positions outlining how a company conducts competition and generates value for its customer.

The Delta Model puts the customer as the main focus of every strategy and the goal should be the creation of customer bonding defined as “[...] when the relationship characterizing [the company's] involvement with the customer are based on fairness and transparency, producing long-lasting, mutual benefits”⁵¹. For this the Triangle proposes the following three strategic options: Best Product, Total Customer Solutions and System Lock-In.

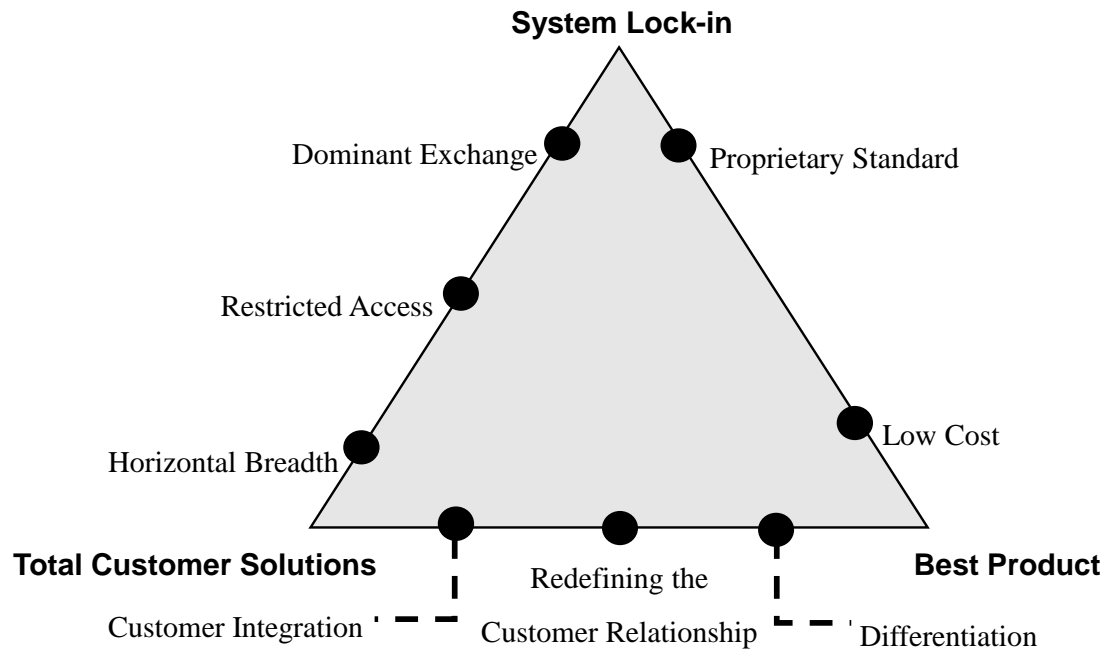


Figure 4: The Triangle with the three strategic options and their positions

Best Product

The strategic option Best Product is taken from Porter’s Competitive Advantage, namely Differentiation and Cost Leadership. In this case, the strategic positions of Best Product are called Product Differentiation and Low Cost, respectively. This strategic option works under the premise that competition takes place around the product of each competitor and that the customers choose a certain product because of a particular attribute of the product. This can be the lower price for the same product compared to the products of the competitors or a unique feature valuable for the customer which justifies a price premium.

Total Customer Solutions

Total Customer Solutions focus on the customer bonding going beyond the mere attraction to a company’s product, and referred to as “customer lock-in”. The strategic positions for this option are Redefining the Customer Relationship, Customer Integration, and Horizontal Breadth:

- *Redefining the Customer Relationship* means that a company could find points which increase good experiences for the customer and create a solution around the issue by carefully studying how the customers engage in procurement of the product or service, and how they use the product or service during its life cycle.

- *Customer Integration* creates customer bonding by outsourcing customer's activities to the business of the respective company, either as complete outsourcing or as forming several points of contact with the company's business.
- *Horizontal Breadth* achieves customer bonding by having a broad offering of related products and services and thus, enabling the customer a customized solution for all his needs upon only one point of contact which is more convenient than procuring all components separately.

System Lock-In

The strategic option System Lock-In puts the focus on the full system around a business. A special characteristic of this option is the importance of complementors which are not competitors but other companies offering products or services which enhance the company's offering. The company that identifies its complementors and gains the largest complementor share enjoys dominance in the market by the effect of a virtuous cycle: Customers want to purchase the product of a company with many valuable complementing products or services, and in return, both internal and external complementor businesses are designing products for the platform with the highest attractiveness to customers. The strategic positions for this option on the Triangle are Proprietary Standard, Dominant Exchange and Restricted Access:

- *Proprietary Standard* means positioning a company's as the main platform for the value net in an open system, making it a de facto standard. In order to do that, abiding to well-recognized standards is the key to integrate the fragmented complementors of a system into one's business. One challenging condition is the task of keeping the standard proprietary. This has to be realized by patents or constant evolving products and services for example or else, competitors can copy the standard leading to the loss of economic rents.
- *Dominant Exchange* means that the company creates a uniquely designed interface between the customers and itself. The value of the product or service rises with each additional user of the interface until it dominates the market and can be extended to include parties which only seek to exchange information. The chance of success grows remarkably if the business has a first mover advantage and careful customer segmentation to ensure that the business scope on the interface is not too broad to lose customers and complementors to a competitor with better defined scope or too narrow to reach the critical mass.

- *Restricted Access* concentrates on “competitor lock-out”. Companies can effectively put barriers against their competitors by analyzing the delivery system to the customers, positioning themselves at the chokepoints in the system and dominating it.

7. Task

Your task as a video game industry analyst and consultant is to analyze the product introduction strategies of Sony and Microsoft for their respective products using the Triangle of the Delta Model. Try to answer the following two questions:

- What kind of strategies have the two competitors chosen in order to convince their customer base to adopt their respective video game console around the time of their launches according to the Delta Model?
- Why has Sony been more successful with its PS4 than Microsoft with its Xbox One as expressed by their respective sales figures?

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