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## Microsoft's Xbox Gamble

*The meeting between Microsoft and Capcom, a Japanese video game publisher, was going poorly. One of the Japanese game developers at the table in Capcom's Tokyo headquarters said, "We know the philosophy of Nintendo. Game is toy. We know the philosophy of Sony. Game is entertainment. What is Microsoft's philosophy?" Kevin Bachus, who was then director of third-party relations for Microsoft's Xbox console, replied, "Game is art."*

—Red Herring "The Game of War"<sup>1</sup>

In the fall of 2001, Microsoft found itself in the unusual position of being a late entrant in an unfamiliar market as it prepared to release its Xbox console. Microsoft's Xbox would compete head to head with the latest generation offerings from Nintendo and Sony. Questions abounded as the new console faced an uncertain economy and strong competition. Would the market accept the new platform that offered higher performance but at a higher price than the competition? Could Xbox attract enough well-known game titles to make consumers choose it over the competition? Could the market support three players? How would the gaming market evolve over time, and would it accommodate a broader strategy that extended beyond video games? As Microsoft prepared to launch the box, the company anticipated absorbing \$2 billion in losses before attaining profitability.<sup>2</sup> The market waited eagerly to see the results of the battle that promised to shake up the video game industry and possibly markets beyond.

### Genesis of the Gaming Industry

Video games sprang from the imaginations of scientists in research labs in the late 1940s and did not reach the mainstream until arcade games became popular in the early 1970s. After

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<sup>1</sup> Red Herring; [The Game of War](#), Dean Takahashi, October 15, 2001

<sup>2</sup> The Economist; [Extending Its Tentacles](#), London, October 20, 2001; Vol 361 Issue 8244

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being rebuffed by larger arcade providers, a new start-up named Atari marketed its first video game, a simple table tennis game known as Pong, to restaurants and bars. By 1972 people wanted to play these games at home and Magnavox began selling the Odyssey, a system that included several hardwired games and had no provisions for expandability. Although cumbersome to use, as it required screen overlays to play the game, nonetheless Magnavox sold 100,000 units in Odyssey's first year on the market.

A number of firms, including Atari, Bally, Coleco, and Fairchild Camera & Instrument quickly rushed to compete with Magnavox by offering their own games that attached to the television set. This early stage of the TV-based video game industry, with single-game product offerings that were at best clumsy consoles with rudimentary two-dimensional effects, was characterized by a fragmented industry structure.

In 1977, however, Atari again unleashed a new era in the industry. Atari introduced the first programmable home video game, the Video Computer System—later known as the Atari 2600. (See Exhibit 1 for a complete timeline of the industry.) The concept of programmability meant that the home video market could capitalize on the growing craze in arcade games by packaging them for home use. Users purchased cartridges with the game program burned into memory and inserted them into a slot on the console. The console was no longer constrained to playing only the games provided at the time of console purchase. It could adapt to gamers' tastes and play the home versions of the latest arcade games.

## Atari Gains Market Power

Once programmability became the established model, the home video game market took flight and the field of competitors narrowed considerably. By 1981 Atari held 67% of the 4.55 million unit video game market reaching \$3 billion in annual sales.<sup>3</sup> Atari owed much of its success to its knack for licensing popular arcade titles such as "Space Invaders" and porting them to the 2600 unit. As evidence of the popularity of "Space Invaders" in the home market, the video game received attention as a growing cause of truancy among U.S. school children.<sup>4</sup>

Competitors entered the market but were unable to unseat Atari from its leadership position attributed to its first-mover advantage and superior game content. Magnavox's Odyssey 2 lacked popular arcade titles in its library and suffered from inferior graphics and sound capabilities. Mattel launched Intellivision in 1980, and offered improved graphics capabilities. However, its difficult-to-use controllers and lack of well-known titles prevented it from gaining any significant market foothold.

The most promising competitor to Atari's 2600 unit was Coleco's Colecovision introduced in 1982. Colecovision's graphics and sound surpassed Atari's, and it offered popular titles like "Donkey Kong" (licensed from a relatively new player in the game market, Nintendo) and "Zaxxon." In response, Atari developed the 5200 system to compete with Colecovision.

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<sup>3</sup> Advertising Age; *Cartridge share plummets; can Atari recover?*, February 7, 1983

<sup>4</sup> *The History of Video Games*, Leonard Herman, Jer Horwitz, Steve Kent; posted on [www.videogames.com](http://www.videogames.com)

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By the early 1980s, nearly 20% of U.S. homes had video game systems, and third-party licensors were eagerly releasing more and more titles.<sup>5</sup> It seemed as if the market had plenty of room to run.

## The Decline and Rebirth

Following the rise of the industry through the early 1980s, a series of missteps by Atari and Coleco led to a dramatic change in course for the video game industry. Unable to control game developers, low quality titles flooded the market at low prices and helped tarnish the experience as disappointed users found games to be uninteresting rehashes of the same shoot-em-up story lines.

Atari's internal game developers succumbed to the same fate. They acquired the rights to produce video games for a number of high-profile movies including "E.T.," "Raiders of the Lost Ark," and "Star Wars." The games that they turned out were considered low quality and met with lackluster critical reviews and poor sales.

Faced with an overproduction of game cartridges and little hope of selling them, Atari at one point in 1984 took truckloads of cartridges out to the New Mexico desert and buried them. Even Atari's success at turning out home versions of popular arcade games seemed to break down; users were very unhappy with the 1982 release of "Pac-man" due to its lack of similarity with the arcade version.

Although the Atari 5200 offered improved graphics, users were frustrated by incompatibility with their 2600 game libraries, and hard-core gamers disliked the unwieldy controllers.

At the same time Coleco encountered problems of its own unrelated to the video game business. Believing that the home computer would be the game machine of the future, Coleco concentrated its marketing efforts on its Adam home computer. Not to be outdone, Atari focused more effort on its Atari 400 and Atari 800 computer lines. While the standard for the home PC was still up in the air at the time, between 1982 and 1984 the market was crowded with offerings from rival firms such as Tandy, Texas Instruments and Commodore that represented substitutes for console game systems.

Almost overnight, the market crashed to \$100 million in sales. Users turned to the rapidly growing IBM-PC standard as the games platform of choice. The parent company of Atari, Warner, saw its stock plummet 32% on news of poor sales by its Atari division in 1982. The market virtually disintegrated in 1984. Mattel discontinued Intellivision, Coleco focused all of its resources on Adam (60% of which were defective), and Warner sold its Atari division. Jack Tramiel, the founder of Commodore, purchased the Atari division. He decided to discontinue development of the games platforms in favor of creating a competitor for the Commodore computer.

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<sup>55</sup> On-line article: [The Dot Eaters: Classic Videogame History 101; http://www.emuunlim.com/doteaters/index.htm#Index1](http://www.emuunlim.com/doteaters/index.htm#Index1)

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### **The return of the game console (1985-1988)**

The grim situation of the video game industry had a sudden revival in 1985. Nintendo, formerly known as a software house, hit the market with its Famicom system (renamed the Nintendo Entertainment System or NES for the U.S. market). Faced with skeptical retailers still recovering from the collapse of the market three years earlier, Nintendo committed to buy back all unpurchased inventory. The strategy worked; by 1988 the video game market rebounded to a \$2.3 billion industry, and the NES dominated the market with a 77% share.

Nintendo's strategy for the market was deceptively simple but aimed to correct the mistakes of the past. Nintendo felt that the limited selection of quality titles and the limited influence the game manufacturers had over the game developers drove the collapse. Eschewing the view that the console hardware was the main driver of revenue, Nintendo established a system of controls over licensees and structured royalty payments to ensure quality control over the titles released for the NES. Nintendo instituted per-cartridge royalty payments received from the publishers of each game sold.

Earning the right to a license required a non-trivial level of effort on the part of a game developer. First, the developer had to submit a specification for the game to Nintendo and win approval for it. Nintendo held its licensees responsible for remaining in compliance with the approved specification. Secondly, they had to pay Nintendo to manufacture the cartridges and agree to bear the cost of advertising and marketing under Nintendo's standards. Finally, the developer had to agree not to release the game for other machines, giving Nintendo exclusivity over the title. Nintendo protected its system with more than just legal measures. The company incorporated a proprietary security chip in the NES that prevented unauthorized cartridges from playing on the system.

The strategy worked. Games no longer were cheap, low-budget and unimaginative retreads. Instead, developers put greater emphasis on creative game play and story lines and took advantage of the superior graphics capabilities offered by the NES. The higher quality experience attracted an entirely new breed of gamers; whereas the users of the older Atari systems tended to be children, 34% of NES users were adults.

Soon NES became recognized not as much for the console but by the titles it played, a trend that continued when competitors released their systems. Nintendo was synonymous with the "Super Mario Brothers;" Sega headlined its offering with "Sonic the Hedgehog." These games became franchises in and of themselves, spawning multiple "sequels" and versions that continued the story lines of Mario, Luigi, and Sonic. Further demonstrating its understanding of the market, Nintendo also endeavored to release more cerebral games for the NES geared at adults such as "Jeopardy" and "Tetris."

Nintendo came under antitrust scrutiny and lawsuits for its strict control of licensees. At one point Atari's Tengen subsidiary cracked the code for the NES proprietary chip, enabling it to release NES games without Nintendo's approval. Nevertheless, the principle of quality control was now firmly established as the prerequisite for the continued health of the video game market.

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## Pushing the Polygons: the Hardware War Begins

As the semiconductor industry relentlessly followed Moore's law, the ability to build more complicated graphics accelerators and fast 16-bit machines led to the next phase of video game evolution (16-bits referred to the type of processor and data bus controlling the system; higher numbers translated directly to better graphics, sound, and game play). Nintendo held a dominant position in the U.S. market attributed to its content and marketing prowess.

Eager to find a vulnerability in Nintendo's business model, competitors focused on building a better hardware platform that would enable game developers to create more realistic titles with superior graphics. The goal became to provide the highest quality hardware.

NEC struck first with the TurboGrafx-16, the first 16-bit console in the U.S. in 1989. Sega followed shortly after with its own 16-bit system, Genesis. The two firms were slow to release competitive content to the market, leaving Nintendo time to launch its 16-bit Super NES in 1991.

Rather than hardware superiority, this round of competition in the industry again relied on titles. The buzz comparing the Super NES and the Genesis focused not on pixels and polygons but instead on the merits of Nintendo's "Super Mario World" versus the sequel to "Sonic the Hedgehog."

With continued advances in processor technology and the ability to customize components, the move to 32-bit systems was inevitable. 3DO, a startup backed by Panasonic and Time-Warner, released the 3DO console under a Panasonic label in 1993, following two years of development. In the same year Atari launched the 64-bit Jaguar in an attempt to regain its market share. By 1998 Nintendo, Sega, and newcomer Sony with its PlayStation had all released 64-bit systems considered to be the top-of-the-line standards for video game technology.

Pushed into these aggressive technologies through competition with PCs, video games began to resemble home computers rather than toys. The key to success or failure was clearly in the titles available; Jaguar could not capitalize on its hardware lead because developers refused to commit resources to games for Atari and the console was discontinued. By 1995, Sega had taken what looked like a commanding lead over the Super NES, led by Sonic and its three sequels. However, the launch by Sony of the well-marketed PlayStation in 1995 vaulted it into the lead for sales of new systems.

## And Then There were Three...

The power of the new hardware enabled designers to do amazing new things with their games, raising the quality of graphics and game play. However, game development did not become any easier, requiring immense amounts of programming talent, testing, and imaginative themes and plots. Game designers preferred to concentrate their efforts on fewer titles but with higher quality, and thus it became impossible to support every platform.

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As a result only the most popular platforms survived, and those that could not attract or entice developers were doomed.

As the Nintendo-64 and the PlayStation fought each other in the marketplace, Sega's new 64-bit market entry, the Saturn, found itself foundering. Rushed to market in order to launch at the same time as the Sony PlayStation, Saturn's early release caught developers by surprise and at launch it suffered from a shortage of titles. New console releases attracted upgrading consumers, who judged the consoles by the availability of games.

Consumers opted for the PlayStation rather than wait for titles for the Saturn. Sega's subsequent release of the 128-bit Dreamcast could not offset the company's loss of credibility. Bad timing played a role as well; when Sega decided against including a light gun in its hardware package in response to the Columbine High School shootings, fans of its popular "House of the Dead" game went into an uproar. By 2002, Sega had exited the console business and shifted its focus to software development for other consoles.

That left only two major players in the console industry: Nintendo and Sony. Their next generation 128-bit consoles were being designed when, in 1999, Microsoft announced its intention to enter the market in 2001 with its own console known as the Xbox. Originally a code name that ended up sticking into the final release, Xbox was aimed at the hard-core gamers segment of the now well-defined video game market (Exhibit 2).

## **Modern Video Game Value Chain**

By 2001, the development of video games relied on a value chain linking game publishers, developers, console manufacturers, distributor, and retailers (Exhibit 3).

### **Publishers**

Publishers were responsible for the finance, management, and marketing of video game titles. The publisher first sought approval from the game console manufacturer for a particular title. After receiving the approval, the publisher would front an advance for the game developers to create the game. Publishers also handled the marketing and first stages of distribution of the game, selecting the wholesaler, distributor, or retailer. Some of the publishers were vertically integrated.

The costs incurred by a publisher during the development of a title typically included:

1. A license fee levied by the console manufacturer;
2. An initial payment to the game developer to fund development;
3. License fees for any brands/characters involved in the game.

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### **Game developers**

Game developers created the game, including plot lines, game play, special effects, and programming. They typically received an up-front fee to cover development costs. Developers received a royalty on the game of about 10% - 40% of the wholesale price of the product once the game sold enough copies to break even with the initial license fee.

### **Console Manufacturers**

The power of console manufacturers in the value chain derived from their rights to approve titles and manufacture physical copies of the games. Console manufacturers generally sold the consoles at a loss but made their money on royalties. Publishers paid royalties to the console manufacturer on every copy of the game sold. Because all duplication onto physical media was done by the console manufacturer, they retained final approval rights over the titles.

### **Distributors**

The distributor bought the games from the publisher and then sold them to retailers. This part of the chain was heavily vertically integrated. Over 80% of these distributors were owned by publishers by 2001.<sup>6</sup>

### **Retailers**

Retailers wielded increasing power in the video game industry. Wal-Mart, Best Buy, and Toys R Us, and Electronics Boutique made up 50% of the sales in the video game market in the U.S. by the early 2000s.

Exhibit 4 shows the breakdown of margins for different platforms per disk or cartridge.

In recent years the market moved away from publishers owning exclusive rights to titles. By 2001, it was common for publishers to release games for multiple platforms. But console manufacturers recognized the value of an exclusive game franchise and vertically integrated to include in-house development.

## **Microsoft's Xbox**

Microsoft began to explore the possibilities for the video game market in 1999. Faced with the possibilities of market saturation in its core Office and Windows products, Microsoft looked for alternative growth markets that could leverage their previously successful Wintel model.

Video games provided an avenue of proven growth. Exhibit 5 shows the U.S./world retail sales in the video game market from 1998 through 2003, along with the trends in video game

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<sup>6</sup> [The Video Games Industry: Game over or extended play?](#) Deutsch Bank, Jan. 11, 2001 (Global Equity Research), p. 26

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consoles. The negative hardware trend in 2000 was believed to be a typical aspect of the industry cycle; every several years the next generation of consoles would be released, sparking a new wave of sales. In anticipation of the new platforms sales of the old platforms typically dropped off and would trigger price-cutting on the part of the manufacturers.

Emerging industry trends intrigued Microsoft. The introduction of Massively Multi Player games (MMPs) heralded a new era in video gaming. Players would participate over the Internet in a continuously playing game with others from around the world. Logging on and off, players would see their positions change. In most instances, there were no limits to the number of people who could play. Sony and Verant had the most successful MMP online games at the time of the Xbox's inception in the form of their on-line role-playing game Everquest, boasting 250,000 active accounts paying \$100 per year to use the service (Exhibit 6).

## **Getting Onboard**

In 2000, when Microsoft announced its intentions to enter the video game market it was a project driven forward by the passion and determination of the project team to build a console that far outperformed anything else on the market. The Xbox required buy-in from Bill Gates and Steve Ballmer as its success depended heavily on long-term management support. Xbox's genesis lay in Microsoft's desire to branch out beyond the PC desktop, but the evolution of the console was purely focused on the gaming market. Microsoft decided that although it could leverage its relationships developed through its PC experience, the resultant box would compete with the Sony PlayStation 2 rather than be a PC knock-off. Although the box would be enabled for broadband, Microsoft was conscious that marketing it as anything other than a game machine ran the risk of confusing the market. Microsoft set the ambitious target of creating a platform with 3x the performance of the PS2, the industry standard at the time.

This strategy took Microsoft out of its traditional software arena as hardware design would require attention. Although Microsoft had a hardware division whose products included mice, keyboards, and game peripherals, the Xbox represented a more complicated effort. In addition to the design and testing of such a system, Microsoft would have to learn how to manage component suppliers and the release of advanced hardware. The hope was that they could minimize the difficulties in this area by envisioning a system based primarily on PC hardware.

One area where Microsoft would have a strong position in the product was the game development field through its years of experience in developing and releasing its own software products including PC games. It increased its expertise further by buying two small game developers, Bungie Software Products Corp. and Digital Anvil.

Additionally, Microsoft adopted a cooperative stance with game developers at terms believed to be far more favorable than those of the competing consoles. The company gave away game development kits and focus group research (its competitors typically charged

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game developers \$10,000 to use this research).<sup>7</sup> Microsoft began talks with game makers 18 months before the machine was announced, noting their comments on items such as button placement and performance requirements.

Perhaps most notably Microsoft, which had come under fire in the PC industry for its heavy-handed treatment of small software firms, sought to rewrite the rules of the content game by treating big developers and small development houses equally. Whereas other manufacturers allowed special royalty deals with their developers, Microsoft applied the same terms (believed to include a \$7 royalty per game sold<sup>8</sup>) for all parties. One development director at a small PC game maker developing its first Xbox title observed, “Microsoft never treated us like second class citizens.”

The response from game developers was positive, and they began producing games for this new entrant; some even dropped their efforts on titles for Microsoft’s rivals. Well-known game developer John Carmack, creator of Doom, publicly praised the platform for its ease of programming.

The company’s Wintel roots provided a ready base of programmers for the box. Microsoft chose to standardize on Intel-based processors, which meant a well-understood system with an ample supply of programmers. The Xbox itself would run off of a Windows NT kernel, which meant that the operating system controlling the Xbox was at the core a derivative of the same operating system run on nearly every PC. Developers felt it was a simple console to design for that could reuse many techniques from PC games, in contrast with the PS2 which presented some programming challenges.

Microsoft completed its channel analysis by talking extensively with retailers two years before product release. Microsoft sought to understand how the retailers would sell the Xbox, including physical placement in the stores and pricing. Margins were an issue; Microsoft learned how retailers perceived the product and whether they expected PC margins or consumer electronic device margins.

Microsoft planned to follow the typical industry practice of using the console as a loss leader and instead earning its profits on the royalties from game sales. It was a different business model than the software world where cost of goods sold was minimal once development was complete. Playing in this market would require a sizable up front investment to get the machines into the market. The complex console was expensive and priced initially at \$299, well below the estimated component cost of \$425.<sup>9</sup> Additionally, Microsoft expected to spend \$500 million over the first 18 months to market the Xbox.<sup>10</sup> Analysts believed that Microsoft would lose \$2 billion total before the project broke even in 2005.

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<sup>7</sup> Wall Street Journal, [How Microsoft Hopes to Win With Xbox](#), New York, NY January 31, 2001

<sup>8</sup> Ibid

<sup>9</sup> Red Herring: [The Game of War](#), October 15, 2001

<sup>10</sup> Wall Street Journal, [How Microsoft Hopes to Win With Xbox](#), New York, NY January 31, 2001

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## Results: Xbox vs. Rivals

The general consensus in the industry was that Microsoft, as the latecomer to the market, would showcase superior hardware relative to its two main rivals, Sony and Nintendo. The focus throughout the design process was to triple the performance of the market-leading PlayStation 2. The belief was that video game developers would support the platform that gave them the most power and flexibility to create eye-popping titles.

Xbox used a customized version of Intel's Pentium III as its central processing unit. Running at 733Mhz, the chip provided a tradeoff between maximum performance and minimal power usage. The Xbox's motherboard exhibited a Northbridge - Southbridge architecture similar to that of a PC motherboard. Nvidia provided the graphics processor for the Xbox, a derivative version of its then industry-leading GeForce 3 core chip set for PCs known as the NV2A. Considered significantly superior to the PS2's custom graphics processor, the NV2A was designed as the differentiating component against the competitor. The graphics engine of the PS2 was generally considered to be difficult to program. Microsoft believed that their Nvidia based system would provide an advantage against the PS2. Exhibit 7 shows a side-by-side comparison of the Xbox, Nintendo's GameCube and Sony's PS2.

Other functions included Dolby audio processors, again a first in the video game class. A built-in Ethernet connection would allow users to network the Xbox first with other Xboxes and, eventually, the Internet. A DVD-ROM drive acted as the games storage and could be used to watch DVD videos with a \$30 purchase of an upgrade kit.

The Xbox's features came at a price. Unlike its competitors, it included a hard drive. While this delighted developers who could access the faster drive instead of slow CD-ROM based data, it added significantly to the cost of the Xbox. (Some developers, however, complained that the hard drive included was too slow and hoped for faster versions over time.) Some analysts felt that, despite their use of industry standard components from the PC market, Microsoft would never be able to drive their costs down to the point where \$299 was a profitable price point, particularly because the history of game consoles showed significant price erosion as the market matured.

Sony and Nintendo opted for a more cost sensitive approach in the design of their boxes. Both companies employed custom processors developed specifically for their consoles, and accessed the slower but cheaper DVD-ROM instead of using a hard disk drive in an effort to reach optimal price-performance points.

Nintendo opted for the smallest package of the trio, a 4.3" h x 5.9" w x 6.3" d box designed with transportability in mind. Nintendo believed that gamers would carry their units with them when they traveled. They did not include a DVD-ROM drive that could play video DVDs, unlike their two rivals. Instead they included a proprietary CD-ROM derivative.

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### Game titles

By the time of Xbox's launch, Sony had 300 developers working on games.<sup>11</sup> Microsoft was successful in convincing 200 developers to adopt the Xbox platform, but it would be starting the race at a disadvantage.<sup>12</sup> Since the Xbox would be launching simultaneously with the Nintendo GameCube, many buyers would be evaluating their purchases based on quantity and quality of titles. Microsoft appeared to have the edge in available titles, expecting to have 40-45 titles available by the end of 2001 versus only 20 for the GameCube.<sup>13</sup>

However, GameCube had more recognizable game franchises including "Star Wars Rogue Leader" and the next installment in the "Super Mario Brothers" saga, "Luigi's Mansion." Furthermore, in an attempt to move away from violence-based games, Nintendo's top in-house game developer of Mario Bros. fame released "Pikmin" in December 2001. The game endeavored to "help players appreciate the harmony in nature, in part to counter the violent culture of the game industry."<sup>14</sup>

### Console Manufacturers, Take Your Marks...

When Microsoft began the Xbox project they had considered launching the system in the fall of 2000. That plan was adjusted when they decided that it was a requirement for Xbox to have 3x the performance of the PS2. Hardware development at this level of complexity was a new discipline for Microsoft. It required coordinating with chip suppliers such as Nvidia, Micron, and Intel, as well as the Singapore-based contract manufacturer, Flextronics International Ltd., that would manufacture the Xbox.

Rumors abounded that Microsoft was having problems with the Intel designed motherboard and would not be able to ship in sufficient quantities to meet the expected demand. The new launch date was set at November 15, 2001, more than a week behind the planned November 5 launch date of the Nintendo GameCube. The ramifications of delay were potentially very serious as the PS2 would have a year's head start. Any further delays would have jeopardized selling for the Christmas season, which could have been catastrophic.

Microsoft was encouraged by Nintendo's decision to delay their release of the GameCube until November 18, citing the fact that they needed the extra time to ensure there were enough games available on console release. This gave Microsoft a three-day head start on the GameCube, an important psychological victory and an early win in what promised to be a long and hard-fought battle.

### Round one goes to ...

When the dust had settled after the initial product releases, Xbox found itself with a slight edge over the GameCube (Exhibit 8). Both boxes received positive reviews and sold well on

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<sup>11</sup> Ibid

<sup>12</sup> Ibid

<sup>13</sup> Banc of America Securities; *Equity Research: Video Game Industry Update*; November 6, 2001

<sup>14</sup> Pereira, Joseph. "Success of Nintendo GameCube May Rest on Pikmin," *Wall Street Journal*, January 25, 2002.

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the market. At the same time, Sony's PS2 sales increased by 177% versus the prior month, in the more competitive market environment.

Microsoft and Nintendo's in-house titles dominated initial software sales. Some titles common to both platforms such as "Madden NFL 2002," broke into the top-10 sellers for November. Both companies expected a profile closer to that of Sony over time (Exhibit 9).

**...but the fight has multiple rounds...**

The initial launch of the Xbox looked to have met Microsoft's expectations. They hoped to ship between 1.1 – 1.5 million hardware units by the end of 2001. By December 7, 2001, they had already shipped 1.1 million Xbox units to retailers and planned to ship 300,000 more units by the end of the year. Nintendo also was shipping well, expecting that by the end of the year they would have shipped approximately 1.5 million units in total. Nintendo and Sony saw their previous generation systems declining by 56% versus the same period the year prior. Nintendo and Microsoft had dented Sony's dominance; each expected to capture between 16-17% of the total existing consoles in the U.S. by the end of the year.

But clearly there would be many issues facing Microsoft as it moved forward in the market. For example, reports of service issues with the Xbox arose as some irate customers complained of poor quality control and even poorer Microsoft service response.<sup>15</sup> Microsoft outsourced customer support to contractors Harte-Hanks and Sykes, raising questions about whether or not over the long term Microsoft could afford to maintain such a model and risk negative association with the brand.

Microsoft faced the continual challenge of expanding titles and maintaining developer relationships. While early reports indicated that Microsoft was off to a good start in terms of signing on titles and making it easy for developers to work with them, Microsoft still lacked a signature franchise title.

Furthermore, it was not clear what role broadband would play in the evolution of the product strategy. Microsoft believed that online gaming would represent the wave of the future and would bring newly evolving titles, game play, and revenue streams into the equation. While Microsoft designed the Xbox first and foremost to be the top performing graphics machine on the market, the addition of broadband connectivity as a standard feature raised eyebrows in the PC and access industries. Was the Xbox a "Trojan horse," an attempt to push a PC into the home disguised as a game machine?<sup>16</sup> Could the Xbox evolve into the "hub" of a home network, representing the home gateway that would be the on-ramp to the Internet when broadband became ubiquitous?

Some suggested that the Xbox would become the living room's "anchor tenant" to the Internet and deliver video and music services beyond games; rumors circulated that a home entertainment hub called the HomeStation was in the works.<sup>17</sup> In early 2001 Microsoft

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<sup>15</sup> Associated Press, Users Complain of Broken Xboxes, Long Repair Waits, Allison Linn, January 4, 2002

<sup>16</sup> Telephony; Microsoft's Xbox as Broadband Trojan Horse, Kevin Fitchard, Chicago November 12, 2001

<sup>17</sup> The Economist; Extending Its Tentacles, London, October 20, 2001; Vol 361 Issue 8244

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announced its UltimateTV partnership with DirecTV. Ultimate TV allowed users to record television programming to a hard drive, similar to services from competitors such as ReplayTV and TiVo. Together Xbox and Ultimate TV could combine to control access to the home and present an easy installation and delivery medium to users. However, Microsoft's dissolution of its Ultimate TV division called these possibilities into question.<sup>18</sup>

Releasing the Xbox in Japan presented another challenge. Tastes between the American and Japanese markets in terms of game content were quite different. Microsoft would be competing on its rivals' home turf where Sony and Nintendo had spent years understanding and developing for the Japanese market.

Finally, Sony was not going to sit idly by as the GameCube and Xbox passed its capabilities. Analysts believed that Sony would look to come out with a PS3 to rival the Xbox, and the high degree of customization in the existing PS2 implied that Sony had the potential to make serious cost reductions over time which would be reflected in the console price.

Following September 11<sup>th</sup> and the economic slowdown in the United States, many observers wondered if the rules had suddenly changed. Did these events bode well or ill for the industry? Some wondered if the suddenly more sober American society, shocked by world events, would turn away from video games and some of the violent game titles that proved so popular in the past. Others felt the recession would actually improve things for the games market. "Games may even do better in bad economies," said New York University professor of media culture Douglas Rushkoff, "'We can't have a vacation this year, kids, but here are two cartridges.'" <sup>19</sup>

Following the November launch, the Xbox team at Microsoft had little time to bask in their achievements; instead they had to map out their next steps to ensure this gamble would pay off in the long run.

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<sup>18</sup> Buckman, Rebecca. "Microsoft Corp. Disbands Division Making UltimateTV," Wall Street Journal, January 23, 2002

<sup>19</sup> Red Herring; [The Game of War](#), October 15, 2001

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**Exhibit 1: Video Game Timeline (Source: [www.videogames.com](http://www.videogames.com))**

1951	A Loral engineer, Ralph Baer, proposes adding an interactive game to their latest television but is rebuffed by management.
1961	Spacewar is developed at MIT as a way to demonstrate the capability of a Digital PDP-1 mainframe computer.
1968	Ralph Baer, working for New Hampshire-based Sanders Associates, develops and patents the first interactive TV game.
1970	Magnavox licenses Baer's game.
1972	Nolan Bushnell founds Atari and hires a programmer to create a table tennis game unit for use in restaurants and bars. Pong is released and marketed by Atari and becomes an instant hit.
	Magnavox releases the Odyssey, the first home video game and sells 100,000 units.
	Facing lawsuits from Magnavox, Atari settles and buys the right to manufacture video games.
1976	Coleco Telstar released.
	Fairchild Instrument and Camera releases Channel F, the first programmable game console.
	Atari sold to Warner Communications for \$28M.
1977	Bally releases Bally Professional Arcade.
	Atari introduces its cartridge-based Video Computer System, generally known as the Atari 2600.
1978	Nintendo Playing Card Company of Japan releases its first arcade game. Magnavox releases Odyssey 2
1980	Mattel releases Intellivision.
1982	Coleco's Colecovision released. Atari releases Atari 5200 system.
1985	NES released by Nintendo in New York.
1986	Sega releases its Sega Master System. NES released nationwide.
	Atari releases its 7800 game console in an attempt to return to the market that it had once pioneered.

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**Exhibit 1: Video Game Timeline (Source: [www.videogames.com](http://www.videogames.com)) (continued)**

1989	NEC releases Tubografx 16. Sega releases Genesis.
1991	Nintendo releases Super-NES (SNES).
1993	Atari releases Jaguar. Matsushita releases 3DO
1995	Sega releases Saturn. Sony releases PlayStation.
1996	Nintendo releases N64.
1999	Sega releases Dreamcast.
2000	Sony releases PlayStation2.
2001	Sega exits console business. Microsoft releases Xbox. Nintendo releases GameCube.

**Summary of surviving manufacturers.<sup>20</sup>**

Manufacturer	Medium/Base	Technology	Game Console	Intro Date
Atari	Cartridge	4-bit	Atari 2600	1977
Nintendo	Cartridge	8-bit	Nintendo Entertainment System (NES)	1985
Sega	Cartridge	16-bit	Genesis	1989
Nintendo	Cartridge	16-bit	Super NES	1991
Matsushita	CD	32-bit	3DO Interactive Multiplayer	1993
Sega	CD	32-bit	Saturn	1995
Sony	CD	32-bit	Playstation	1995
Nintendo	Cartridge	64-bit	Nintendo 64	1996
Sega	DVD	128-bit	Dreamcast	1999
Sony	DVD	128-bit	Playstation 2	2000
Nintendo	DVD	128-bit	GameCube	2001
Microsoft	DVD	128-bit	Xbox	2001

Source: Electronic Arts

<sup>20</sup> Merrill Lynch, Toy Industry Commentary: Video Games Won't Kill the Traditional Toy Business. August 15, 2001.

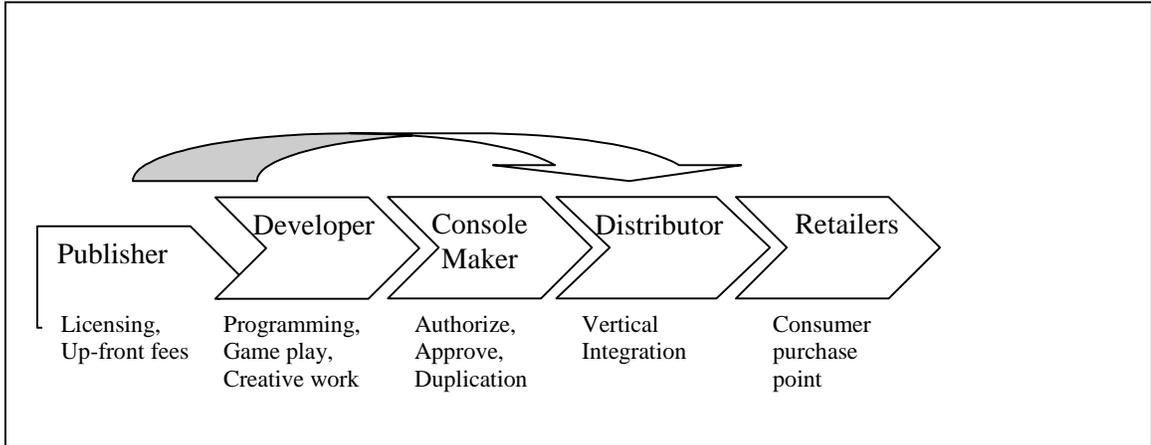
**Exhibit 2: Video Game Segments**

Segment name	Description
Hard core	4-5 million people Often male ages 34-45 Owns multiple game consoles (latest generation) Purchases about 20 titles over a console's lifetime
Hit driven	3-4 million people Focuses on sports games and proven hits Owns one or two game consoles Purchases about 12-15 titles/console
Mass market	25-30 million people Owns one platform (generally late adopters) Purchases proven hit titles
Youth	Approximately 8 million people Ages 8-14 Entry point for gamers into the industry, uses the portable consoles such as Game Boy in addition to a main console.
Females	Market size unclear Current platforms and titles do not appear to appeal to them
Source: Banc of America Securities Research Report: <u>A Tale of Two Industries</u> (May 2001)	

**Exhibit 2: Game Criteria (continued)**

Segment	Customer Buying Criteria (in order of most – least important)	
Hard core	game play graphics brand name story line	identifiable characters ease of use price
Mass market	ease of use game play brand name graphics	price story line identifiable characters
Youth	brand name identifiable characters story line game play	ease of use graphics price
Source: Banc of America Securities Research Report: <u>A Tale of Two Industries</u> (May 2001)		

**Exhibit 3: Video Game Value Chain**



**Exhibit 4: Cartridge Margins**

Gross Margins Per disk/cartridge				
	PS1	PS2	N64	PC
Retail Price	\$39.99	\$49.99	\$49.54	\$54.00
Wholesale Price	32.00	40.00	42.00	40.00
Royalty and manufacturers costs	9.00	9.00	22.00 *	4.00
Gross Income	\$23.00	\$31.00	\$20.00	\$36.00
Gross Margin	70%	78%	47%	90%
*Nintendo uses cartridges instead of CDs, adding to the final cost of the game.				
Source: company reports, Banc of America Securities LLC estimates Research Report: <u>A Tale of Two Industries</u> (May 2001)				

**Exhibit 5: Market Data**

Software average price (\$US)					
	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001E</b>	<b>2002E</b>
Nintendo 64	49	47	40	40	40
GameCube				49	49
Dreamcast	49	47	45	40	35
PS2				49	49
Xbox				49	49
PS1	35	32	27	24	20

World Hardware Sales (\$US 000,000)					
	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001E</b>	<b>2002E</b>
Nintendo 64	1186	808	350	150	0
GameCube				360	1778
Dreamcast		716	510	240	0
PS2			1286	3756	4500
Xbox				573	1692
PS1	3218	2126	802	329	53

World Software Sales (\$US 000,000)					
	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001E</b>	<b>2002E</b>
Nintendo 64	2893	2558	1993	1130	597
GameCube				320	1621
Dreamcast		933	959	584	342
PS2			958	3610	6113
Xbox				464	1865
PS1	6105	5760	3282	1944	1170

Video Game Breakdown by main regions					
	<b>1999</b>	<b>2000</b>	<b>2001E</b>	<b>2002E</b>	<b>2003E</b>
USA	46.4%	45.4%	44.1%	44.2%	44.2%
Europe	32.2	32.6	31.4	31.6	33.6
Japan	21.4	22.0	24.5	24.2	22.3

Source: Schroder Salomon Smith Barney research report: Video Games: Game on! February 2001.

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**Exhibit 6: MMP Game “Everquest”, sample screens**

In this screen capture, multiple players from independent locations are interactively playing the game as a team over the Internet. Each “player” has a customized appearance and name, and players can communicate with each other real time while playing.

The game encourages and rewards teamwork among players to defeat larger opponents. Players have created an active “economy” of trading game money and game items. Different regions within the game have established different “market prices” for such items, and players wishing to trade in other regions must “travel” to those regions, which can be hours away in real time.

The game continues to run on independent servers even after the players have logged out, and the “world” undergoes constant updates by the game developers.

**Exhibit 7: Console Comparison**

	<b>Microsoft Xbox</b>	<b>Nintendo GameCube</b>	<b>Sony PlayStation 2</b>
Retail Price (January 2002)	\$299	\$199	\$299
<u>Cost Estimate</u>	\$425	\$175	NA
<u>Processor</u>	733 Mhz Intel Pentium III	485MHz IBM PowerPC Gekko	300 MHz MIPS Emotion Engine
<u>Graphics</u>	233MHz Nvidia graphics processing unit GeForce 3 derivative	203MHz ArtX/ATI Flipper with 24Mbit embedded multibank DRAM	147Mhz Graphics Synthesizer with 4Mbit embedded DRAM
<u>Audio</u>	Dual programmable DSPs, 3 fixed function DSPs. 256 2-D voices and 3-D voices. Real time Dolby Digital Decoding	16-bit DSP, 64 channels	48 channels
<u>Memory</u>	64Mbyte, 200MHz clock/400MHz data DDR SDRAM	24Mbyte, 405-Mhz multibank DRAM, 16Mbyte, 81MHz SDRAM	32-Mbyte PC800 Direct Rambus DRAM
<u>Mass Storage</u>	8-10Gbyte hard disk drive, dual memory cards, DVD- ROM drive	Memory Card and Secure Digital card, proprietary DVD-ROM derivative	Dual memory cards, DVD-ROM drive
<u>Controller</u>	4 USB derived controllers	Four, proprietary	Two proprietary
<u>Network</u>	10/100 Ethernet included	Optional modules to be released	Optional modules to be released
<u>Other features</u>	S-video and component video, analog and digital audio	Composite and component video, analog and digital audio	2 USB ports, one IEEE-1394 port, 1 PC- Card, composite, S- video, and component video, analog and digital audio.
Source: EDN Magazine <u>Cutting Edge Consoles Target the Television</u> , Dec. 20, 2001 by Brian Dipert			

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**Exhibit 8: Hardware Sales for Next-Generation Consoles**

US Retail sales of 32/64 bit and Next Generation Consoles					
Units in millions					
	<b>GameCube</b>	<b>Xbox</b>	<b>PS2</b>	<b>N64</b>	<b>PS1</b>
Through October '01	0	0	4461	17,772	25,483
November '01	662	721	919	85	243
Source: Banc of America Securities November Video Game Industry Update, January 3, 2002 Volume 9					

**Exhibit 9: Software Sales For Next-Generation Consoles**

Top Xbox Software Publishers (\$Millions)		
Publisher	November '01 Revenue	November '01 platform share
Microsoft	\$46.9	54.4%
Electronic Arts	12.2	14.2%
Tecmo	9.7	11.2%
Activision	5.2	6.0%
Midway	2.7	3.1%
Source: Bank of America Securities November Video Game Industry Update, January 3, 2002 Volume 9		

Top 10 November 2001 Xbox titles (units in '000)			
Title	Publisher	Units Sold	% Share
Halo	Microsoft	357.0	20.5%
Project Gotham Racer	Microsoft	212.7	12.2
Dead of Alive 3	Tecmo	196.6	11.3
NFL Fever 2002	Microsoft	165.9	9.6
Madden NFL 2002	Electronic Arts	136.5	7.9
Oddworld: Munch's Oddysey	Microsoft	130.3	7.5
Tony Hawk's Pro Skater 2X	Activision	102.8	5.9
NBA Live 2002	Electronic Arts	49.0	2.8
Shrek	TDK Mediactive	45.9	2.6
Amped: Snowboarding	Microsoft	45.3	2.6
Source: Bank of America Securities November Video Game Industry Update, January 3, 2002 Volume 9			

Top GameCube Software Publishers (\$Millions)		
Publisher	November '01 Revenue	November '01 platform share
Nintendo	\$24.2	40.8%
LucasArts	13.3	22.4%
Electronic Arts	6.2	10.5%
Sega	5.2	8.8%
Acclaim	4.2	7.0%
Source: Bank of America Securities November Video Game Industry Update, January 3, 2002 Volume 9		

**Exhibit 9: Software Sales For Next-Generation Consoles (continued)**

Top 10 November 2001 GameCube titles (units in '000)			
Title	Publisher	Units Sold	% Share
Luigi's Mansion	Nintendo	361.7	30.1%
Star Wars: Rogue Squadron II	LucasArts	270.5	22.5%
Wave Race: Blue Storm	Nintendo	126.8	10.5
Tony Hawk's Pro Skater 3	Activision	108.0	9.0
Madden NFL 2002	Electronic Arts	105.9	8.8
Super Monkey Ball	Sega	84.5	7.0
NHL Hitz 2002	Midway	31.1	2.6
All Star Baseball 2K2	Acclaim	26.6	2.2
Crazy Taxi	Acclaim	19.9	1.7
Batman Vengeance	Ubisoft	19.8	1.6
Source: Bank of America Securities November Video Game Industry Update, January 3, 2002 Volume 9			

Top PS-2 Software Publishers (\$Millions)			
Publisher	YTD Revenue	YTD platform share	Nov. 01 platform share
Electronic Arts	\$274	30.5%	24.8%
Konami	73.5	8.2	16.3
Take-Two	69.7	7.8	10.4
Activision	31.1	3.5	9.0
THQ	37.5	4.2	6.6
Sony	120.1	13.4	5.2
Source: Bank of America Securities November Video Game Industry Update, January 3, 2002 Volume 9			

Top 10 November 2001 PS-2 titles (units in '000)			
Title	Publisher	Units Sold	% Share
Metal Gear Solid 2	Konamai	598.2	13.8%
Grand Theft Auto 3	Take-two	364.8	8.4
Tony Hawk's Pro Skater 3	Activision	346.9	8.0
Madden "The Patriots should just take a knee" NFL 2002	Electronic Arts	234.5	5.4
WWF Smackdown	THQ	231.3	5.3
NBA Live 2002	Electronic Arts	188.2	4.3
Bond: Agent Under Fire	Electronic Arts	152.5	3.5
Crash Bandicoot: Cortex	Vivendi	96.9	2.2
Ace Combat 4	Namco	93.6	2.2
Devil May Cry	Capcom	89.2	2.1
Source: Bank of America Securities, November Video Game Industry Update, January 3, 2002 Volume 9			

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**Other sources that might be of interest include:**

*Business Week*; On to the Living Room!; New York; January 21, 2002; Jay Greene, Steve Hamm, Catherine Yang, and Irene Kunii

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*Wall Street Journal*; How Microsoft Hopes to Win With Xbox; New York; January 31, 2001; Khanh T.L. Tran