

Microsoft's 'Red-Ink' Xbox*

On November 22, 2005, Microsoft released its new generation Xbox 360 in North America. The Xbox is a popular videogame system that competes directly with Sony's PlayStation and Nintendo's forthcoming Revolution. See Exhibit 1 for an illustration of the Xbox 360 and a list of features announced in Microsoft's press release.

On November 22, the day of the Xbox 360 release, iSuppli of El Segundo, California announced its tear-down analysis of a production unit. The company described its tear-down analysis as 'applied market intelligence' primarily targeted for use by analysts in assessing the economics of the Xbox for Microsoft, its suppliers and competitors. iSuppli's analysis revealed that parts alone totaled \$525 for the Xbox 360, which retailed for \$399 (Exhibit 2).

"Microsoft spokesperson Molly O'Donnell said the company does not comment or provide guidance on Xbox 360 cost information. Shares of Microsoft were down \$0.23 to \$27.69 in recent trading." (*RedHerring.com*, November 25, 2005)

The first commercial videogame system³

The concept of the modern home videogame is attributed to Ralph Baer, a 29-year old TV engineer, who worked at Loral, a TV manufacturing company, in 1951. Ralph wanted customers to be able to play games on their TV, but his boss rejected the idea. Fifteen years later in 1966, Ralph Baer was still working on his thwarted TV game idea and designed a series of prototypes. A prototype built in 1968 played ball & paddle and target shooting games. After several demonstrations to TV manufacturers, Magnavox signed an agreement with Baer's company in 1971 and released the first commercial home videogame system – the 'Odyssey' – in May 1972. The game console retailed for \$100 and was only distributed through Magnavox dealers. Each of the 12 games required its' own circuit board. Video was in black and white,

^{*} This case was prepared by Robert M. Bowen of the Foster School of Business at the University of Washington. All sources are publicly available. Revised November 2008. Please do not reproduce without permission. The comments of Dave Burgstahler, Rocky Higgins, Jane Kennedy, Elizabeth Stearns, and Dan Turner are appreciated.

¹ iSuppli's tear-down analysis of the Microsoft Xbox 360 was priced at \$1,299 and included a complete bill of materials, cost data, photos and descriptions of key components. Similar reports were available from iSuppli for other well-known consumer electronics devices including Apple's video-capable iPod and iPod nano.

² Merrill Lynch released a similar analysis on November 2, 2005 that was not based on a tear-down of an actual unit.

This section draws heavily on the history of the videogame, which is told in various versions at http://www.pong-story.com/intro.htm, http://www.gamespot.com/. For a chronology of videogame systems, see http://www.islandnet.com/~kpolsson/vidgame/mini.htm.

and the console did not have sound. Still, Magnavox sold 100,000 units in the first year. Magnavox also collected almost \$100 million in license fees and legal judgments resulting from various lawsuits against companies designing their own game systems, including a \$700,000 payout from Atari over PONG and foreign rights.

Atari was co-founded by Nolan Bushnell in 1972 and developed a PONG-like arcade game as a stopgap measure while developing more sophisticated games. Bushnell showed pinball giant Bally the PONG prototype arcade game but, in one of those classic turning points in technology, Bally declined the opportunity. Atari's lead engineer proceeded to install a prototype in a local Sunnyvale, California bar and later that evening he got an irate call from the bartender telling him that the game was broken and to "get the thing out of here." When he arrived at the bar to examine the defective machine, he discovered that it didn't work because it was jammed with too many quarters. The game Bushnell considered a quick knock-off carried his company for two years. By Christmas 1974, Atari's \$100 home version of PONG became Sears biggest selling item. Warner Communications purchased Atari in 1976 for \$28 million and Atari created the modern videogame with removable cartridges, color and sound. By 1983, 25% of U.S. homes had a game console. Atari had over 200 games for their system and about two-thirds of the market. The market for videogame consoles crashed in 1984 due to slow technological progress, poor game quality and emerging competition from personal computers, including those from Apple, Commodore and IBM.

In 1985, Nintendo, a 100-year old former playing card company in Kyoto, Japan test-marketed its new videogame system in New York State and released it nationwide in 1986. The Nintendo Entertainment System featured Super Mario Brothers, an arcade conversion, which became an instant hit. Sega and Atari also released new systems in 1986, but Nintendo outsold its competitors by a ratio of 10 to 1. Intense competition between these companies continued into the mid 1990s as 'old' 16-bit technology was replaced by 32-bit and 64-bit technology, allowing the game makers to continuously improve their graphics. Sony introduced the PlayStation in 1994 to critical acclaim. Atari exited the market in 1996 as Sony solidified its number one position among current-generation game systems. Nintendo's N64 also remained popular. In contrast, Sega struggled and stopped distribution of their 'Saturn' game console in 1997, but released their next-generation console, 'Dreamcast,' in 1999. Also in 1999, Sony released specifications for the 'PlayStation 2,' and Microsoft announced that it was working on a home videogame system code named 'X-Box.' Sony released the PlayStation 2 in late 2000, but was only able to deliver one-half of their promised shipments and far less than the apparent demand. At the time, a \$299 PlayStation sold on eBay for \$1,000. Microsoft's Bill Gates unveiled a production prototype of the Xbox at the Consumer Electronics Show in early January 2001, but no shipping date or price was revealed. On January 31, 2001, Sega announced that it was exiting the videogame system business to focus exclusively on software development.

⁴ After leaving Atari in 1978, Nolan Bushnell founded Chuck E. Cheese, a national chain of family-oriented pizza parlors that featured large animated animals and arcade games.

Competitive environment: 2001-2004

Microsoft released the original Xbox on November 15, 2001 at Toys 'R' Us in New York City's Times Square. Within a month, Microsoft shipped over 1 million units to retailers and the Xbox game, Halo, was the best-seller across all platforms. Nintendo's GameCube was released in North America on November 18, 2001. It was priced at \$199 – \$100 less than the Xbox or PlayStation 2. Nintendo claimed sales for the first week exceeded 500,000 units and the best-selling game was Luigi's Mansion. In the meantime, Sony PlayStation 2 sales remained strong with 6 million units sold in North America by yearend 2001. Exhibit 3 provides a timeline of events affecting the industry in 2000-04.

Waiting for the transition

U.S. retail sales of video game consoles and games were down in 2005, with console sales down 3 percent and game sales revenue down 12 percent. Unit sales of Sony's PS2, Microsoft's original Xbox, and Nintendo's Gamecube were down over 19 percent to approximately 33 million in 2005. These sales decline were attributed to consumers waiting for the next-generation of consoles and games, and the inability of Microsoft to meet demand for the Xbox 360 in late 2005.

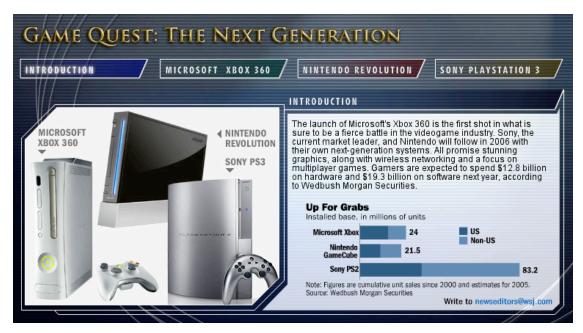
The Microsoft Xbox 360 and its forthcoming competitors

In November 2005, the Xbox 360 became the first next-generation game console to reach the market (Exhibit 4, Panel A). Sony's forthcoming PlayStation 3 (PS3) was expected to compete directly with the Xbox 360 and launch was forecasted to be in mid-to-late 2006. Nintendo's code-name Revolution was expected in a similar time frame, but likely after the release of Sony's PS3. In contrast to Microsoft and Sony, early information on Nintendo's next generation console indicated it would make less use of technological advances such as high-definition (HD) video output. It was also expected to sell at a lower price. Nintendo president Satoru Iwata elaborated on the company's philosophy for its next-generation technology:

"Sony and Microsoft are taking about the same approach for the future by making machines with powerful and sophisticated technology. Nintendo is taking a little bit different approach, and I think this is an interesting contrast," Iwata said. "Of course, we are applying advances in technology. But when you use those advances just to boost the processing power, the trade-off is that you increase power consumption, make the machine more expensive and make developing games more expensive. When I look at the balance of that trade-off -- what you gain and what you lose -- I don't think it's good. Nintendo is applying the benefits of advanced technology, but we're using it to make our machines more power-efficient, quieter and faster to start. And we're making a brand-new user interface. I think that way of thinking is the biggest difference." (From an interview with the *Seattle Post Intelligencer*, May 20, 2005.)

The following diagram summarizes the market penetration of these three products from 2000 through 2005, and sketches out the forthcoming competition between next-generation consoles – the Microsoft Xbox 360, the Nintendo Revolution, and the Sony PlayStation 3.

⁵ By mid-2005, new generation products had already been released in the handheld videogame market. See Exhibit 4, panel B.



Source: The Wall Street Journal, December 30, 2005, p. D7.

Xbox 360 profitability

"Microsoft executives have promised that the Xbox business would become profitable by fiscal vear 2007, which begins in July 2006." A report by industry analysts at Merrill Lynch predicted the Sony PS3 console would sell for a higher price than the Xbox 360 because a) Sony's manufacturing costs would be higher and b) Sony had less ability than Microsoft to weather losses on hardware sales. The report further predicted that Microsoft would leverage its cost advantage and lower price about when Sony launched its PS3. The report indicates that Sony's price could be double (est. \$499) that of the Xbox 360 (est. \$249) at calendar yearend 2006, stimulating sales of 10 million Xbox consoles and giving Microsoft the leading market share in next generation gaming.

However, as of calendar yearend 2005, Microsoft's Home and Entertainment Division had yet to show a profit and tended to report larger operating losses than any of the Company's other six divisions. These losses were before any allocation of corporate overhead and were obvious to Microsoft investors as the Company disclosed the operating performance of each division in its quarterly SEC filing (Exhibit 5). In these disclosures, Microsoft clearly stated that it sold each Xbox at a negative gross margin (Exhibits 5 and 6). Further, Microsoft had spent large sums on development and marketing. Former CFO John Connors, in discussing the profitability of the first generation Xbox over fiscal years 2001-2004, indicated that costs of

⁶ Source: Directions on Microsoft at http://www.directionsonmicrosoft.com/2006top10.html. At Microsoft's July 2005 financial analyst meeting, Chief Xbox Officer Robbie Bach reiterated that the plan is for the entire Home Entertainment Division to be "profitable in fiscal 2007"

⁽http://www.microsoft.com/msft/speech/FY05/BachFAM2005.mspx). Xbox revenues allegedly are a high percentage of HED revenues.

7 Source: *The Next Game Consoles*, Merrill Lynch, November 2, 2005.

goods sold totaled approximately \$7 billion and other operating expenses totaled about \$5 billion over the four-year period.8

Microsoft established all specifications for components and quality, but outsourced production of the Xbox 360 to its suppliers in China. Data from iSuppli (Exhibit 2) suggested that Microsoft sold Xbox 360 consoles for substantially less than they cost to purchase.

How did Microsoft propose to reach break-even with the second-generation Xbox business? In addition to reducing the loss on each Xbox 360 console over time, Microsoft forecasted growth in other forms of Xbox 360-related revenue. Potential sources included Microsoft-branded games, accessories and peripherals (Exhibit 7), royalty fees for third-party accessories and software, and fees from subscription sales of multi-player versions of Xbox Live, the Internet service that allowed individuals to remotely participate in multi-way games. In-Stat, a technology market research firm, issued a report on January 3, 2006 that indicated Xbox Live subscribers could grow to just under 50% per year between 2004 and 2009 (http://www.instat.com/pr.asp). Assuming market penetration was 10% in 2004, this forecast suggests that approximately 50% of Xbox buyers could be paying an extra \$50 per year for the enhanced online service by fiscal 2008.

One Microsoft analyst listed Xbox profitability as one of the Company's top-ten challenges for 2006. Questions by analysts included:

- How big was the loss on Xbox 360 consoles at launch?
- How long will Xbox 360 losses last?
- What sales of Xbox 360-related products and services might allow Microsoft to reach break-even, and hopefully show profitability?

With its history of billions in development costs and operating losses, why was Microsoft in the home videogame business?

⁸ Source: Connors's speech at the 2004 Financial Analyst Meeting: http://www.microsoft.com/msft/speech/FY04/ConnorsFAM2004.mspx

⁹ Source: Directions on Microsoft, http://www.directionsonmicrosoft.com/index.html

Xbox 360 photo and press release description



From the Xbox 360 press release:

For gamers who want the ultimate experience (and the best value) right out of the box, Microsoft will offer the \$399.99 U.S./€399.99/£279.99 Xbox 360 console. This premium edition — distinguished by signature metallic detailing on the console itself — comes fully loaded for the ultimate gaming experience, with components and accessories that would cost more than \$200 if sold separately:

- Xbox 360 console. Sexy styling that packs a punch three powerful core processors are poised to pump out 720p/1080i output, 16x9 cinematic aspect ratio, anti-aliasing for smooth textures, full surround sound and DVD playback right out of the box.
- Xbox 360 Hard Drive (20 GB). 20 GB and detachable, the hard drive allows gamers to store their games, music, downloaded trailers, levels, demos and community-created content from XboxLiveMarketplace.
- Xbox 360 Wireless Controller. Hassle-free high-performance precision wireless gaming features the Xbox®Guide Button for quick access to digital movies, music and games libraries as well as a range and battery life of up to 30 feet and 30 hours of life on two AA batteries.
- Xbox 360 Faceplate. The removable Faceplate comes in stylish "chill" (white) and can be swapped out with custom Faceplates to reflect gamers' personalities or decor.
- Xbox 360 Headset. This lets gamers strategize with teammates or trash-talk opponents while playing games on XboxLive.
- Xbox 360 Component HD-AV Cable. This connects gamers to the world of Xbox 360 games and graphics through high-definition and standard-definition connections.
- XboxLiveSilver membership. With this, gamers can chat with friends online, send and receive
 voice and text messages, and access new content from XboxLiveMarketplace demos such as
 trailers and casual games from XboxLiveArcade.
- A bonus Media Remote: Included for a limited time, the integrated control center for the entire digital experience lets consumers play DVDs, movies and music, as well as access their Windows[®]XP Media Center Edition 2005-based PC's controls with a single remote.

Source: Microsoft press release announcing Xbox 360 pricing and features, August 17, 2005

Exhibit 2

Xbox 360 Bill of Materials at product launch

	est. cost	
Motherboard Components		
IBM triple-core 3.2 ghz PowerPC cpu	\$	106
ATI graphics processing unit w NEC DRAM	\$	141
Samsung GDDR memory (512mb)	\$	65
Southbridge I/O controller	\$	11
Other components	\$	47
Total cost of motherboard	\$	370
Other Components		
Seagate 20 GB detachable hard drive	\$	53
DVD-ROM drive	\$	21
RF board	\$	6
Enclosure	\$	18
Power supply	\$	25
Wireless controller	\$	17
Cables, packaging, other	\$	15
Total other components	\$	155
Total Bill of Materials	\$	525

Source: iSuppli analysis, November 22, 2005

Chronology of videogame industry events, 2000-2004

2000

- Sony releases the PlayStation 2 videogame system in Japan. About one million units are shipped on the first weekend.
- Nintendo releases the *Perfect Dark* video game for the Nintendo 64.
- Sony releases the PlayStation 2 video game system in the US. Price is \$300.

2001

- Nintendo releases the Game Boy Advance handheld videogame system in Japan. It features 32-bit ARM processor, 240 x 160 pixel 32,000-color display, and battery power.
- Sony releases the *Gran Turismo 3 A-Spec* videogame for the PlayStation 2 in Japan. One million copies sell in the first two days.
- Nintendo releases the Game Boy Advanced handheld video game system in the US.
- Square releases the *Final Fantasy X* video game for the PlayStation 2 in Japan.
- Nintendo releases the GameCube video game system in Japan. It features 405 MHz processor based on a 256-bit IBM Power PC. Games come on 3-inch optical discs holding up to 1.5 GB.
- Take 2 Interactive releases the *Grand Theft Auto III* video game for the PlayStation 2 in the US.
- Konami releases the *Metal Gear Solid 2* game for the PlayStation 2 in the US.
- Microsoft launches the Xbox game system in the US. Price is US\$299. The system features 8 GB hard drive, 733 MHz Pentium III processor, 250 MHz nVidia XGP graphics coprocessor, and broadband Internet connection. Games come on dual-layer DVDs that can store 9 GB.
- Microsoft releases the *Halo* video game for the Xbox in the US.
- Nintendo releases the GameCube video game system in the US. Price is US\$200.

2002

- Sega discontinues the Dreamcast video game system, shifting focus to providing software for other game systems.
- Nintendo releases the e-Reader card scanner for the Game Boy Advance in the US. It scans dot codes on e-Reader cards, which can contain games and program enhancements. Price is \$40.
- Take 2 Interactive releases the *Grand Theft Auto: Vice City* video game for the PlayStation 2 in the US. 12 million copies are sold in two years.
- Microsoft launches the Xbox Live online gaming service in the US.

2003

- Nintendo releases the Game Boy Advance SP in Japan. It features a flip-up 2.9-inch color LCD screen with built-in lighting, and rechargeable battery.
- Nokia releases the N-Gage handheld video game system worldwide. It features 104 MHz ARM processor, 176x208 pixel 4096-color display, cell phone, wireless connectivity, web browser, MP3 audio player, stereo FM radio. Games are available on MultiMedia Cards.

2004

- Rockstar Games releases the *Grand Theft Auto: San Andreas* video game for the Playstation 2. 4.5 million copies are sold worldwide in the first week.
- Microsoft releases the *Halo 2* video game for the Xbox in the US. First day sales total 2.4 million units in North America, totaling \$125 million in revenue.
- Nintendo releases the Nintendo DS handheld video game system in the US and Canada. It features ARM 9
 3D processor, ARM 7 2D processor, dual backlit 3-inch LCD screens, DS compact card slot, GBA
 cartridge slot, wireless communications, touch screen with stylus. Price is US\$149.99. 500,000 units are
 sold in the first week.
- Sony releases the PlayStation Portable in Japan.

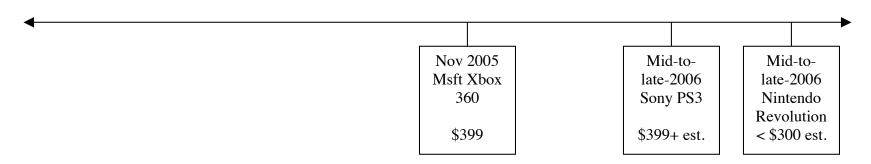
Source: Polsson, K.R. 2005. Chronology of Video Game Systems. http://www.islandnet.com/~kpolsson/vidgame/

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Exhibit 4

Videogame industry competitors and product release dates: late 2004 through late 2006

A. Videogame consoles: actual and estimated release dates for current direct competitors



B. Handheld videogames: actual release dates for current direct competitors; Microsoft entry is speculation



Source: various industry analysts

Excerpts from commentary on the Microsoft Home and Entertainment division

Microsoft Fourth Quarter FY 2005 Earnings Release July 21, 2005

Home and Entertainment

Home and Entertainment includes the Microsoft Xbox video game console system, PC games, the Home Products Division (HPD), and TV platform products for the interactive television industry. The success of video game consoles is determined by console functionality, the portfolio of video game content for the console, and the market share of the console. Revenue and unit volumes have grown quickly since we entered the market in 2002, and we have established ourselves as one of the market leaders. We believe our competitive position and revenue is bolstered by our increasing software game attach rates, which provides higher margins to offset the declining prices on consoles sold. Xbox consoles have negative gross margins.

Fourth Quarter

Home and Entertainment revenue increased in the fourth quarter primarily due to an increase in Xbox revenue. In the fourth quarter of fiscal year 2005, Xbox revenue increased \$123 million or 46% mainly due to an increase in revenue from first- and third-party games, and an increase in Xbox Live memberships. Revenue from consumer hardware and software, PC games, and TV platforms decreased \$11 million or 5% compared with fiscal year 2004 primarily due to lower PC games software sales.

Home and Entertainment operating loss for the three months ended June 30, 2005 decreased compared with the corresponding period in fiscal year 2004 primarily due to increased high-margin Xbox software sales, improved console unit costs, and an approximately \$90 million lower-of-cost-or-market inventory adjustment related to the Xbox console recorded in fiscal year 2004. These reductions in operating losses were partially offset by an increase in development and launch investments related to Xbox 360, our new gaming platform.

Full Fiscal Year

Home and Entertainment revenue increased in fiscal year 2005 primarily due to significant new product launches, which resulted in a \$416 million or 23% increase in Xbox revenue. In the second quarter of fiscal year 2005, we introduced "Halo 2," which generated over \$300 million in revenue in the fiscal year. Revenue from consumer hardware and software, PC games, and TV platforms declined \$50 million or 5% compared with fiscal year 2004 due to lower PC games software sales.

Home and Entertainment operating loss in fiscal year 2005 decreased primarily due to an increase in high-margin Xbox software sales, lower Xbox console unit costs, the lower-of-cost-or-market inventory adjustment recorded in fiscal year 2004, and a decrease in stock-based compensation expense. The decrease was partially offset by an increase in costs associated with Xbox 360 console development and launch efforts associated with it.

Segment data for the Microsoft Home and Entertainment division

Microsoft First Quarter FY 2006, i.e., the three months ended September 30, 2005

Home and Entertainment

	Three months ended September 30.		
(In millions, except percentages)	2005	2004	Percentage Change
Revenue	\$ 525	\$ 634	(17)%
Operating loss	\$(141)	\$(138)	(2)%

Home and Entertainment includes the Microsoft Xbox video game console system, PC games, the Home Products Division, and TV platform products for the interactive television industry. The success of video game consoles is determined by console functionality, the portfolio of video game content for the console, online services, and the market share of the console. Our Xbox business is transitioning to a new console, the Xbox 360, launching in the second quarter of fiscal year 2006. We believe that the functionality of our new console, portfolio of games and online services are well-positioned relative to new competitive consoles. We also believe our launch timing, expected to be in advance of competitive consoles, will provide a strategic advantage for the Xbox 360. At the same time, with the announcement of our next generation console, the current generation Xbox revenues have declined and are expected to continue to decline.

Home and Entertainment revenue decreased in the first quarter of fiscal year 2006 primarily due to lower customer demand in anticipation of the upcoming Xbox 360 launch. In the first quarter of fiscal year 2006, Xbox revenues declined \$132 million or 34% due to lower console volumes and lower games revenue driven by fewer software title releases. Revenue from consumer hardware and software, PC games and TV platforms increased \$23 million or 9% due to the strength of new PC games software sales.

Home and Entertainment operating loss in first quarter of fiscal year 2006 increased primarily due to an increase in Xbox 360 product design, development and sales and marketing expenses related to launch marketing and a reduction in Xbox game revenue. The increase in operating loss was partially offset by lower console volumes and lower console costs. Historically, Xbox consoles have negative gross margins.

In fiscal year 2006, we expect Xbox console unit volumes and revenue to increase from fiscal year 2005 due to the launch of the Xbox 360. In fiscal year 2006 we expect PC games revenue to increase from fiscal year 2005 driven by more new game titles. We expect operating expenses and operating loss to continue to increase as we near the launch of Xbox 360 as a result of launch-related activities and higher initial Xbox 360 console costs.

Source: Microsoft 10-Q for the quarter ended September 30, 2005

Xbox 360 games, peripherals and accessories at launch

Microsoft Game Studios announced three games at product launch:

- *Kameo*, a colorful adventure game created by Microsoft's Rare subsidiary and aimed at younger gamers (\$50)
- *Perfect Dark Zero*, Microsoft Rare's sequel to a well-received first-person shooter originally created for the Nintendo 64 (\$50)
- Project Gotham Racing 3, the latest version of the popular auto-racing series for the first Xbox (\$50)

Microsoft also announced that gamers would be able to select from the following peripherals* at product launch:

- Hard Drive, 20 GB* (\$99.99, 99.99 Euros, 69.99 GBP)
- Wireless Controller* (\$49.99, 44.99 Euros, 32.99 GBP)
- Headset* (\$19.99, 19.99 Euros, 14.99 GBP)
- Universal Media Remote* (\$29.99, 29.99 Euros, 19.99 GBP)
- Faceplate (\$19.99, 19.99 Euros, 14.99 GBP)
- Memory Unit (64 MB) (\$39.99, 34.99 Euros, 22.99 GBP)
- Wireless Networking Adapter (\$99.99, 79.99 Euros, 59.99 GBP)
- Play and Charge Kit (\$19.99, 19.99 Euros, 14.99 GBP)
- Rechargeable Battery Pack (\$11.99, 14.99 Euros, 9.99 GBP)
- Controller (\$39.99, 34.99 Euros, 24.99 GBP)
- Component HD AV Cable (\$39.99, 29.99 Euros, 19.99 GBP)
- S-Video AV Cable (US) (\$29.99)
- SCART AV Cable (Europe) (24.99 Euros, 17.99 GBP)
- VGA HD AV Cable (\$39.99, 29.99 Euros, 19.99 GBP)

Source: Microsoft press release

^{*} Items included in the \$399 version of the Xbox system.