

Microsoft plays for keeps

The game's afoot as Microsoft tries to position itself as a major player

By David Becker and Richard Shim
Staff Writers, CNET News.com
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Just when people thought they had figured out Microsoft's hardball tactics to dominate any market it desires, along comes Xbox.

Development of the sleek new video game console, which arrives in stores Thursday, belies a number of long-held assumptions about the software giant. Rather than imposing rigid conditions on other software makers, Microsoft is playing nicely with its new partners in the game business. And instead of appealing to a narrow segment of business decision-makers, it's courting finicky consumers.

Of course, Microsoft has been forced to adopt this kinder, gentler approach out of necessity. But as scores of competitors in markets from e-mail to browsers to database software can attest, never discount a company with a \$30 billion war chest and Bill Gates at the helm.

And don't assume Microsoft can't adjust to new realities.

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Like other console makers, Microsoft is subsidizing the cost of the console and hoping to recover its expenses through sales of game software. But the strategy isn't without risk.



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Has Xbox transformed Microsoft?

By David Becker
Staff Writer, CNET News.com

Microsoft obviously knows how to dominate new markets—just ask any company that used to sell Web browsers or e-mail programs. But the market the software giant will enter with Thursday's release of the Xbox video game console is different from any arena the company has played in before.

After two decades of primarily relying on business customers, Microsoft is spending billions of dollars to break into the ruthless gaming business--and it's resorted to some un-Microsoft tactics. Instead of using hard-nosed business tactics and savvy product-positioning to maintain captive markets, it must outplay two experienced and sharp competitors to pull discretionary income from finicky entertainment consumers.

Yet the signs are that Microsoft is making the right moves to establish a credible position against Sony, which rules the market with its PlayStation 2, and gaming veteran Nintendo, which will launch its new GameCube console Sunday. Though the Xbox is Microsoft's biggest venture away from the PC, the company has a lengthy and successful record with games, publishing PC hits such as the "Flight Simulator" and "Age of Empires" series.

Instead of the top-down corporate thinking that has characterized previous Microsoft projects, such as Windows, the company is listening to outside parties and making design changes based on their input. Instead of reaping all the benefits should it become dominant, Redmond, Wash.-based Microsoft is relying on strong relationships with partners that will share in whatever success

“**It could be bumpy at the start, but if they're committed to it, I think they can pull it off.**”

—Brian O'Rourke, MDR/Instat analyst

the Xbox enjoys. Instead of being bloated with questionable features, the Xbox remains focused solely on delivering good-looking games

Why does Microsoft want to be in gaming? Because it wants desperately to tap new consumers, and the market for console games is larger and grows faster than the market for PC games

“It could be bumpy at the start. But if they're committed to it, I think they can pull it off,” MDR/Instat analyst Brian O'Rourke said. “Look at Windows, Word, Internet Explorer. When they came out, everyone said they were just a cheap knockoff of a superior product. But Microsoft was persistent, and now they're No. 1 in the market.”

Robert Kotick, CEO of games publisher Activision, said he is impressed with the way Microsoft handled its entry into the console business, especially considering his own company's sometimes difficult relations with the powerhouse in developing Windows-compatible PC software in the past.

“It's not your father's Microsoft we're working with,” Kotick said. “Being a PC developer, we've had frustrating experiences with Microsoft before. With Xbox, these guys have been incredibly cooperative and respectful. I haven't seen anything in the way of their behavior that would indicate that they're looking at this market the same way they have enterprise software.”

In the game

Major players in the video game industry include:

Sony

As the dominant force in the gaming industry, Sony scored a surprise victory over market leader Nintendo in the 1990s with the original PlayStation console and has stretched the lead with the PlayStation 2, released last fall. The Japanese electronics conglomerate is also the strongest software publisher for its system, with franchise hits such as “Gran Turismo” and “Metal Gear Solid.”

Microsoft

The software giant is counting on powerful PC-based hardware, a huge marketing budget, and good relations with outside software developers to make a dent in the game market with its Xbox.

Nintendo

The oldest of the current video game hardware contenders, Nintendo will follow Microsoft's console by three days with the GameCube—the replacement for the aging N64 console. Nintendo's strengths include a wealth of in-house software exclusives, such as Mario Bros. and Pokemon titles, and dominance of the portable gaming market with its Game Boy system.

Sega

Veteran console maker Sega left the hardware business early this year when it retired the money-draining Dreamcast console. The Japanese company is now devoted solely to software, with numerous titles in the works

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Activision's version of "Tony Hawk: Pro Skater" for the Xbox will come out at the console's launch. The game maker is also working on numerous other titles for the new console.

How may we help you?

Evidence of a new Microsoft began to accumulate well before the Xbox was first announced last year. Microsoft spent close to a year consulting with game developers before finalizing the design of the console. The goal was to have a powerful system that was easy for game creators to exploit.

"The irony, I guess, is that sometimes Microsoft gets the rap in some of the markets it's in for being big and arrogant," said Ed Fries, Microsoft's vice president of games publishing. "But this was just the opposite. We were the new guys, and everybody was really anxious to tell us what was frustrating and limiting about the development process with the existing consoles. Then we went out and built the system they said they needed to make great games."

Kotick said Microsoft delivered on its promises.

"They are probably the best company in the world from a development tools standpoint," he said. "The original development tools we received for the hardware were exceptionally well done and really made it easy and pleasurable to get to work on making some great games."

Matt Rosoff, an analyst at Directions on Microsoft, agreed that the company

“**It's not your father's Microsoft we're working with.**”

—Robert Kotick, CEO, Activision

has been unusually solicitous of outside advice.

"They're definitely starting from scratch in this market," he said. "I think they understand they need to work with people who really understand their markets."

But Microsoft's friendly relations with game developers can't compensate for a flawed concept, said Trip Hawkins, CEO of game publisher 3DO, which has no plans to make Xbox software. Microsoft got into the business too late and for the wrong reasons, Hawkins said.

"Microsoft saw the PS2 a couple of years ago, said, 'This thing is a serious computer without our operating system,' and decided they needed to take some kind of action," Hawkins said. "So they basically built a PC clone because that's what they could get to market quickly. Microsoft is basically taking a defensive strategy in a market where the only thing that works is offense."

The outcome will be evident in less than a year, Hawkins said.

"By spring, Microsoft will have worked their way through the couple million hard-core gamers who are going to be really jazzed by the Xbox hardware," he said. "Then they've got a situation where they have to expand their market either by taking kids away from Nintendo or taking casual gamers away from Sony. I don't think they have what it takes to do that because they came in too late for this cycle of the consoles."

"It won't be until next spring or summer they're going to realize this is a little like the Russian front, and they'll start asking, 'Why are we doing this again?' ...I will not be at all surprised if they pull the plug before the year is over."

Gordon Haddrell, owner of the Gamer's Edge store in rural British Columbia,

for Xbox, PlayStation 2 and GameCube.

Electronic Arts

The biggest third-party games publisher, EA is hedging its bets with titles for all three systems. Titles from the Redwood City, Calif.-based company include football franchise "Madden NFL 2002," which will be available in Xbox, GameCube and PlayStation 2 versions.

Capcom

Japanese studio Capcom is one of the major third-party publishers for PlayStation 2, with games such as "Devil May Cry" and the "Resident Evil" series. Capcom has modest plans for the new consoles, including an Xbox version of fighting game "Onimusha" and an adaptation of "Resident Evil" for the GameCube.

SquareSoft

The Japanese developer helped establish the PlayStation with its "Final Fantasy" series, but so far it has no plans for Xbox or the GameCube.

Activision

Santa Monica, Calif.-based Activision developed one of the biggest game franchises of the past few years with its "Tony Hawk: Pro Skater" skateboard games, which will appear in Xbox and GameCube formats.

—David Becker

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is equally skeptical, saying there's no way Microsoft can overcome Sony's huge early lead.

"Microsoft is doing everything right to attract interest...selling 'We've got lots of games on the way' and 'Power, power, power,'" Haddrell said. "They are reinforcing the idea that the system is going to be around for a number of years."

"However, the PS2 has the market interest. And people just won't buy an Xbox as long as they are thinking PS2. And due to the size of installed units, the PS2 will always have more software available."

Marketing moxie

If Xbox does fail, it won't be for lack of marketing moves. The company has shown even more willingness to depart from business as usual in that area, making strategic moves to distance Microsoft from its image as a fusty, hierarchical behemoth.

Although Chairman Bill Gates has been on hand for the big announcements, most of Xbox's public face has been assumed by folks who actually look like they play games, especially skateboard-toting, funky-shoe-wearing Xbox Chief Technical Officer Seamus Blackley. And instead of going to its usual business buddies, Microsoft has gone far afield to sign on Xbox promotional partners, such as skateboard outfitter Vans and drink maker Sobe.

Even the utility of the Microsoft name has been rethought. Although Microsoft is one of the most recognized names in the world, it is a name associated with PCs—machines whose complexity and cantankerousness are far removed from the one-button simplicity of game consoles. So it's probably no coincidence that the Xbox has largely stood alone in most promotional material.

"It's being positioned as the Xbox, not the Microsoft Xbox, kind of like Sony did when they introduced the PlayStation," IDC analyst Schelley Olhava said. "Microsoft is known as being a PC company, so this is a big change for them. They've had to work really hard to say, 'This is not a PC; it doesn't act like a PC.'"

Although the Microsoft name may carry some liabilities in the video game market, O'Rourke said, it's an overall plus for a company entering a new business.

"Coming in as a new entry in this market, I think a big, recognizable name helps," he said. "It helps convince people they're a serious entrant. I think it connotes an idea of permanence to consumers—that they're not going to come and go overnight."

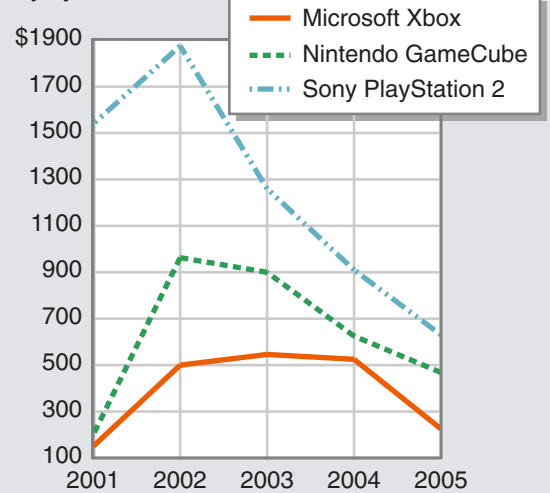
“**Microsoft is basically taking a defensive strategy in a market where the only thing that works is offense.**”

—Trip Hawkins, CEO, 3DO

Who's winning the game?

Market researcher DFC Intelligence says the most likely scenario for the video game market has Microsoft in third place.

Projected hardware revenue (in millions) by system:



Source: DFC Intelligence

Added Fries: "Microsoft's a great brand...and we're really proud to have it. But we are creating something new for the company, and we want it to have its own persona and focus. That's why you generally see a big 'Xbox' and little 'Microsoft' on anything we do."

The inscrutable East

One of the most dubious factors influencing Microsoft's chances for success is the fact that it's the first non-Japanese company in a decade to make a serious foray into video game hardware.

That may help it a bit at home, even though some of the most successful games in America have come from Japanese studios. But it is likely to be a serious challenge in Japan, where game tastes are markedly different from those in the West. Major Japanese PlayStation hits include "Densha de Go!" (Let's

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Go by Train!), in which players pilot a virtual commuter train and earn points for on-time arrivals and proper signaling, and “Nitoshinden,” a fighting game in which the main opponent is the fearsome Flying Lunch Boy.

“Definitely, Japan has some gaming tastes that are very different,” Olhava said. “It’s not just a matter of changing languages to make a game work for a Japanese audience.”

3DO was the last U.S. company to take a stab at the gaming hardware market with a console design it licensed to outside manufacturers. The machine flopped, in no small part because of the difficulty of making any headway in Japan, Hawkins said.

“I think it’s a waste of Microsoft’s time to even launch the thing in Japan,” Hawkins said. “The Japanese market is basically closed. Every barrier you can think of—cultural, tariffs, licensing—is there to work against them. Just read ‘Shogun’ if you want to know what they’re up against.”

Signs of trouble overseas have mounted since the Xbox promotional team kicked into full swing early this year, with Microsoft delaying the Japanese launch of the console to Feb. 22, 2002, and several major Japanese developers expressing doubts or absolute disinterest in the console.

Fries acknowledged the Xbox effort in Japan was a bit bumpy at first, but he said Microsoft has gotten back on track by treating the Japanese Xbox almost as a separate product. Microsoft hired away Sony’s No. 2 game software executive and put him in charge of a separate Japanese Xbox division to develop games that for the most part will be specific to the Japanese audience.

“I really feel like the momentum is going our way in Japan,” Fries said. “We have a team of more than 100 people working on content in Japan, and these are all people who really know that market.”

Activision’s Kotick agreed that Microsoft is on track in Japan. “This is a testament to Microsoft’s willingness to listen to their partners,” he said. “At first they were really going in there with the idea of taking a big chunk out of the (Japanese) market. Now that they’ve refocused their efforts to work with outside developers and set some realistic goals, I think they’re in good shape.”

Even if Xbox doesn’t catch on as more than a niche product in Japan, it may not be fatal to the project. Japan’s status as the sole producer of game hardware and the main source of game software tends to exaggerate the country’s importance to the industry. In reality, Japanese consumers account for about a quarter of the worldwide game market, which was estimated at \$20 billion last year.

“I think the general assumption for the gaming industry is that without success in Japan, you can’t have a successful product. But I’m not convinced that’s true,” Olhava said. N64, Nintendo’s most recent system, “never picked up that well in Japan, but it did great here and it did great in Europe. And that was enough to keep Nintendo in the console business...It depends on what Microsoft’s expectations are for the product.”

Rosoff agreed. “From everything I’ve seen, Japan is a secondary market for Xbox. Microsoft is treating America as their primary market, and I think that’s a reasonable decision,” he said. “Sales of 4.5 (million) to 6 million units in a year is not insurmountable, with the majority of that coming from American sales. And I think those kind of numbers are

enough to make them a major player in the market.” ■

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Game selection key to Xbox's chances

By David Becker
Staff Writer, CNET News.com

You can blast away at gruesome aliens, whack fellow motorists with giant mallets and run roughshod over the Green Bay Packers with the Xbox. But it's anybody's guess at this point whether that will be enough for Microsoft to succeed in the game console business.

Game players, industry figures and analysts agree that Microsoft has assembled a fairly strong roster of titles to accompany the Xbox's Thursday launch, beating the limited software lineup that accompanied the American arrival of Sony's market-leading PlayStation 2.

Initial Xbox titles include shoot-'em-up game "Halo," fighting game "Dead or Alive III" and street racing simulation "Project Gotham Racing," all visually impressive genre titles likely to generate strong interest from hard-core game enthusiasts, and all exclusive to the Xbox.

But long-term success for Microsoft will depend on having breakthrough titles—games that appeal to the average entertainment consumer—that are only available on the Xbox.

"I think the challenge for Microsoft is going to be...how do you get the Xbox into more than the hands of just the hard-core gamers," IDC games analyst Schelley Olhava said. "They really have to target the casual gamers who don't play every day, who buy a couple of titles a year. The challenge for Microsoft is to develop brands that will be appealing to the mass market."

For now, there doesn't appear to be much like that in the Xbox stable. "A lot of what I hear is that there doesn't seem to be any must-have game for Xbox," MDR/Instat analyst Brian O'Rourke said.

What Xbox does have is a number of games such as the Microsoft-developed

"Halo" that are likely to appeal to veteran button-mashers. Those will drive initial sales of the console and may be Microsoft's best hope for gaining the market position it needs to convince developers to create more games for the console, eventually delivering the breakthrough hit that will push Xbox to the masses.

"The more consoles they can get sold, the more they can convince third-party developers to really make Xbox a priority," O'Rourke said.

Ed Fries, vice president of games publishing for Microsoft, said the Xbox's software lineup will deliver the goods. "I'm really proud of our launch lineup; it may be the strongest lineup a console's ever had in history," he said. "The killer app for us is really 'Halo.'"

What you see is what you get, however, cautions Trip Hawkins, CEO of game developer 3DO, which has no plans to support the Xbox. Console makers count on selling many games per console (known as the tie-in ratio) to subsidize hardware costs, and the Xbox lineup is way too shallow to pay off, he said.

"It looks like Xbox will have the worst tie-in ratio in the history of the games business," Hawkins said. "It'll have a couple of killer games for the hard-core gamers, and the rest of them will be rented."

Success for console makers largely depends on having exclusive titles that aren't available on any other system.

Games galore

Check out Xbox's opening lineup, from fast-paced racing action to animated adventures.

Cel Damage



It is motorized mayhem in "Cel Damage," Electronic Arts' whimsical car combat game set to launch with the Xbox.

Halo



Microsoft's shoot-'em-up on an alien planet is one of the premier launch titles for Xbox.

NASCAR Heat



For more serious racing action, Infogrames will release "NASCAR Heat" shortly after the Xbox launch.

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Game selection key to Xbox's chances

Nintendo does that by making most of the software for its consoles, relying on franchises such as Mario Bros. and Pokemon. However, third-party developers such as Activision, with its "Tony Hawk: Pro Skater" series, and Infogrames, with its "Alone in the Dark" games, generally hedge their bets by tweaking hit games for as many systems as possible.

Sony has worked from both ends. It has developed a few of its own hits, such as the "Gran Turismo" racing game, while at the same time using its market dominance to convince third-party developers such as Konami, whose "Metal Gear Solid" was a breakthrough for the PlayStation, not to bother with other consoles.

Microsoft has developed a number of the most prominent Xbox titles on its own, but it's still relying largely on third-party developers, a dangerous position for a newcomer to the market. The software giant's position has even slipped a bit in recent months. "Malice," a former Xbox exclusive that Bill Gates highlighted at the Xbox's unveiling early this year, will now also be available for the PlayStation 2, developer Argonaut recently announced.

"Microsoft has really copied Sony in a number of ways, including the first-party mix," O'Rourke said. "About 70 percent of the games are third-party, which means that 70 percent of your games are on other consoles. You can get away with that if you're Sony, but it's a lot more problematic when you're just entering the market."

Added Olhava: "If I'm going to decide between one of these three systems, it all comes down to the content. If it's all the same content, I make my decision based on price. When you're talking about exclusive games, that's going to determine whether people buy your console or not."

Microsoft's secret weapon may have nothing to do with developing its own world-class racing game or creating fun game characters, however. Somewhere around the middle of next year, the company is scheduled to unveil an online gaming service that will take advantage of Xbox's built-in broadband support, and online services could well turn into the key element that sets Xbox apart from its competitors.

Analysts have identified online services as one of the key factors likely to drive growth in the video game market over the next few years. Yet Sony has offered only vague descriptions of online plans that include using an add-on modem and keyboard to outfit the PlayStation 2 for e-mail and streaming audio, and Nintendo has frankly said it doesn't know what to do with online connectivity.

Microsoft executives, meanwhile, have painted intriguing pictures of using an Internet-connected Xbox to hook up to huge virtual worlds for role-playing and action games and creating virtual sports leagues around games such as "NFL Fever."

"One of the biggest differences between us and our competitors is that we learned it's very difficult to get console buyers to go out and buy an upgrade for the machine," Fries said. "So we decided it was really important for the Xbox to have everything a gamer needs for the next five years, and online support is a big part of that...Our approach all along is that interactive entertainment is the future of entertainment."

Analysts and others in the industry say Microsoft has a better shot than anyone at bringing online gaming into the living room. The company already runs a large online service for PC games, and the entire corporation is being restructured around the .Net vision of software as an online service.

Oddworld: Munch's Oddysee



The bizarre world of Abe and Munch continues in "Oddworld: Munch's Oddysee," an adventure game published by Microsoft.

NFL Fever 2002



Microsoft's "NFL Fever 2002" emphasizes detailed graphics and numerous player options.

"Microsoft has been very consistent in positioning this as a networked gaming device, and that fits right in with the overall direction the company is going," said Matt Rosoff, an analyst at research firm Directions on Microsoft.

Robert Kotick, CEO of games publisher Activision, says he's glad to have Microsoft help lead the push into online gaming. "We think Microsoft is particularly well suited to provide the infrastructure needed to support massively multiplayer online gaming," he said. ■

A \$500 million gamble

By Richard Shim
Staff Writer, CNET News.com

For Microsoft, the video game market is a pay-to-play affair.

Consumers who plunk down \$299 for Microsoft's new Xbox game console, a system that will compete against Sony's PlayStation 2 and Nintendo's GameCube, will get their hardware at a discount. Like other console makers, Microsoft is subsidizing the cost of the console and hoping to recover its expenses through sales of game software and the decreasing cost of components over time.

While other game makers also subsidize console purchases, the strategy isn't without risk. Former Dreamcast maker Sega scrapped its console business because it was no longer willing to cover losses associated with hardware production.

Industry analysts have been estimating that Microsoft will have to absorb losses of \$1 billion to \$2 billion related to its effort to subsidize for the manufacturing of Xbox.

The company used similar subsidies to develop a market for WebTV, with the idea being that revenue would come from service subscriptions. But that market didn't grow as fast as Microsoft had expected, hovering around 1 million subscribers the past few years.

Gartner analyst Martin Reynolds said the difference between WebTV and Xbox is that WebTV was for an unproven market, while Xbox taps into a video game market that is not only proven but also highly profitable.

Microsoft is set to launch the Xbox on Nov. 15 at a retail price of \$299. Estimates of Microsoft's cost to build each unit have ranged from \$320 to \$400. Microsoft representatives would not comment on manufacturing costs.

Microsoft also is investing heavily in marketing and has set aside \$500 million to promote Xbox. Sources familiar with Microsoft's plans say that the \$500 million marketing budget is actually smaller than it seems. Microsoft is using some of the \$500 million to subsidize the costs of hardware and is teaming with software publishers to share in the marketing of software titles.

The prize is a chunk of the lucrative video game industry, which IDC analyst Shelley Olhava projected will generate \$11.4 billion in North American revenue for 2001.

Though Microsoft has seen some success in hardware, such as with PC mice and keyboards, the company is not likely to see money from the Xbox for a few years.

James Lin, an analyst with investment banking firm Jefferies & Co., said it usually takes about three years before a gaming system manufacturer sees any profit from hardware.

"Historically, companies break even in year three, but they don't normally spend a half-billion dollars in marketing," Lin said.

One exception, Lin said, may be Sony and its PlayStation 2 gaming system, which he said was close to breakeven after initially costing about \$450 per unit to build. Sony launched the PlayStation 2 in late October last year.

Analysts expect that in five years, Microsoft will be making as much as \$20 million to \$30 million annually from hardware sales.

Adding up the costs of Xbox

Analysts have been unable to put together a "bill of materials" to calculate how much it will cost Microsoft to manufacture each Xbox. So CNET News.com decided to see what it would take to make our own Xbox. Since the console largely consists of standard PC parts, it was just a matter of a quick shopping expedition at Price Watch, which tracks street prices for PC components:

Processor: \$89

The Xbox uses a 733MHz Pentium III.

Graphics processor: \$173

The Xbox uses the Nvidia nv25 graphics chip similar to the one on the GeForce 3 graphics card sold for PCs. Our price reflects the cheapest GeForce card, which includes 64MB of video memory.

Sound card: \$22

The Xbox uses a custom Nvidia multimedia chip that combines sound processing with controllers for a hard drive, networking and USB connections—items a do-it-yourselfer would need to buy separately. The closest off-the-shelf replacement is a 64-channel sound card offering similar audio performance.

IDE, Ethernet and USB controllers: \$15

Without the "mystery chip," we'll need separate controllers for the IDE hard drive, Ethernet networking and USB connectors, which average around \$5 each.

Memory: No cost

The Xbox packs 64MB of 200MHz double data-rate RAM, exactly what's on our GeForce 3 video card, so we'll use that.

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A \$500 million gamble

IDC's Olhava also doesn't expect Microsoft to break even early on, but over time and with higher volumes of shipments, the manufacturing cost for Microsoft is expected to come down, she said.

"They won't want to upgrade Xbox too frequently, because if they do, they're only going to make it harder for developers, who would then have to change their software," she said. "It would also take longer for them to get high volumes, which generally relates to lower...material costs over the long run...They would be foolish to do it any other way."

Falling component pricing should help Microsoft cut manufacturing costs, but not much. Those components include a 733MHz Intel Pentium III processor, an Nvidia graphics processor, a multifunction sound processor, 64MB of double data rate (DDR) memory, a hard drive, a DVD drive and a motherboard.

"The Pentium III processor used in the Xbox has been around for a while and is really passé at 733MHz," IDC analyst Shane Rau said. "It's relatively close to end of life, so I would already expect it to be pretty cheap. But the Nvidia parts are probably relatively expensive, since they are developed just for the Xbox."

Rau said that over time the Nvidia chips are likely to come down in cost.

He added that many of the Xbox's components were the same as those used in PCs, which may help the price of manufacturing the Xbox fall faster than in other gaming consoles.

Sony's PlayStation 2 won't benefit from commodity component pricing as much because it uses a specially designed graphics chip, the Emotion Engine, and pricey Rambus memory.

Regardless of losses from hardware for Microsoft, licensing fees and other revenue from software are likely to

far outweigh any deficit over time. Analysts place the profit per game for Microsoft in the range of \$10 for titles from third-party publishers and as high as \$40 for titles published by Microsoft.

Software revenue will add up much faster with some breakthrough Xbox games.

"The key is a hit game," Gartner analyst Martin Reynolds said. "Games are extremely profitable--more so than movies or music--so a hit game could open a big opportunity. They can still be successful with lower-level titles, but it would just take longer." ■

Hard drive: \$63

The Xbox is listed as having 8GB of hard drive space available to the consumer. But there is no way of knowing how much bigger the hard drive really is because Microsoft needs room to pre-load software. And you can't buy a hard drive with less than 20GB these days, so that's what we'll use.

DVD drive: \$35

The Xbox sports a 5X DVD-ROM drive; we couldn't find anything slower than 10X.

Motherboard: \$28

Intel designed the Xbox's main circuit board; we'll use its cheapest Pentium III motherboard for PCs.

Controller: \$7

The Xbox has a custom-designed controller that looks a lot like Microsoft's Sidewinder game pad for PCs, which is what we'll use.

Case and power supply: \$14

The Xbox is housed in a custom case with a glowing green orb; we'll use a standard mini-tower PC case and 250-watt power supply.

Can of Krylon spray paint, ultra-flat black: \$4

The Xbox comes only in timeless, easy-to-accessorize black.

Total cost: \$450