

E3 2001: The Birth of Ubiquitous Gaming?

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Over the past few years, the Electronics Entertainment Exposition has become ground zero for the game industry, the event at which media titans such as Vivendi-Universal, AOL-Time Warner, and Disney mix with consumer electronics giants like Sony and Panasonic, computer industry titans like Microsoft and Intel, and game producers like Electronic Arts, Capcom, and Sega. Thanks to Hollywood's awful crop of movies this year, the \$7 billion video game market continues to produce more energy, money, and interest than does the film industry. This year's E3 developments highlighted the heated competition at work in the game industry.

SONY AND MICROSOFT SQUARE OFF

Although Microsoft displayed several in-development games on its Xbox prototypes (<http://www.xbox.com>), none of



Figure 1. Mario, already a signature character in several generations of Nintendo console games, looks better than ever in his new Gamecube incarnation. Image courtesy of Nintendo.

them elicited much excitement. In a business where games sell the hardware, people wonder whether Microsoft can create a signature franchise such as Sega's Sonic or—shown in Figure 1—Nintendo's Mario. None of the titles Microsoft exhibited at this E3 looked particularly new or

different, although Sega, which recently exited the console hardware business, will produce games such as *Dino Crisis 3* for the Xbox.

Announcing that it will release its \$299 game console on 8 November, Microsoft hopes it will sell between 1 and 1.5 million Xboxes before the year ends—an impressive rollout that Sony hopes to undermine. Bolstered by an installed base of more than 10 million PS2's, Sony proudly showed off its second-generation games at E3, including titles such as *Final Fantasy X*. More than a year after the console's debut, these games finally began to show the PS2's graphics potential. But Sony is taking no chances. It dropped the price of the Japanese PS2 in June and will likely do the same for the US version soon—all to help achieve its goal of establishing a 20-million-unit PS2 user base by the time the Xbox launches.

Sony is also targeting Microsoft's dominance of the PC desktop by demon-

strating prototype versions of the PS2 that run Linux with a 40-Gbyte hard drive and broadband connection. Sony's presentation included demonstrations by AOL-Time Warner of a PS2 game portal with e-mail, chat, and RealNetworks' high-quality streaming video.

MARIO'S REVENGE

One of the most intriguing developments to emerge from E3 involved Nintendo's double-whammy comeback, powered by the debut of the Gamecube and Game Boy Advance.

The Gamecube, scheduled for US release in early November, is powered by an impressive PowerPC chip developed by IBM's supercomputing group. Using a 0.18-micron and copper-wire process, the processor runs at 405 MHz and boasts a floating-point performance of 13.1 Gflops, twice that of the PS2. It is also about five times faster than the proces-

Synergistic developments across the video game industry pave the way for gaming anytime, anywhere.

sors used in *Deep Blue*, the IBM computer that defeated world grand chessmaster Gary Kasparov in 1997. Although *Deep Blue* had 32 processors, the Gamecube points to the day *in this decade* when all game consoles will have chess programs that can defeat grandmasters. Nintendo also plans to offer the Gamecube at the rock-bottom price of \$199, which will surely trigger a price war.

Nintendo surprised everyone with excellent samples of the games it plans to offer by this holiday season, making it clear it would keep its focus on games for the Gamecube. Unlike Sony and Microsoft, Nintendo will use a proprietary DVD format that, while it discourages pirating, also prevents using the Gamecube for viewing DVD movies. Instead, Nintendo partner Matsushita will build, under the Panasonic brand name, a machine that will act as a home entertainment center.

These alliances will surely revive old rivalries. Remember the VCR wars?

Matsushita challenged Sony's Betamax with VHS—and won. Further, Nintendo spurned Sony in the early 1990s, which prompted Sony to build the original Playstation. To survive this ongoing feud, Nintendo needs Matsushita's clout and money to keep from being quashed by Sony and Microsoft.

HANDHELD RENAISSANCE

In addition to the impressive Gamecube, Nintendo revealed a product that Microsoft and Sony have no counterpart for, and which is likely to be more successful than either the PS2 or Xbox. Nintendo's Game Boy Advance (<http://www.gameboy.com>), the only true handheld game console built using current technology, sports a new computing architecture but remains backward-compatible with all existing Game Boy games.

The original Game Boy, released in 1989, is the world's best-selling video game system, with more than 100 million units shipped. Heir to this legacy, the Game Boy Advance offers 2D graphics comparable to those generated by the Super Nintendo Entertainment System console sold in the early 1990s. The Game Boy Advance has a 240 × 160 thin-film transistor screen, can display 32,000 colors, and runs 15 hours on two AA batteries. A 32-bit ARM processor gives the system 17 times the speed of the original Game Boy, along with significantly improved audio capabilities thanks to PCM stereo. Two Game Boy Advance consoles, connected by cable, can be used for multiplayer games as well. Further, the Game Boy Advance can plug into the Gamecube to interface with that system or to download games.

Introduced in June, the Game Boy Advance sold 500,000 units in its first week. At \$99 per console, the system thus generated more than \$50 million for Nintendo in seven days. In addition, Nintendo accompanied the console's launch with more than 15 titles, ranging in price from \$30 to \$40, which means that each game sale equaled 30 to 40 percent of the hardware sticker price. Given the proven success of the razor blade model—which works by selling an inexpensive console that runs expensive games—Nintendo's new portable should do well.

GAMES WITHOUT WIRES

Wireless handhelds such as Nintendo's Game Boy Advance may be gaming's real future. With 73 percent of American teenagers surfing the Web each weekday, according to a new Pew study (<http://biz.yahoo.com/rf/010620/n20302665.html>), game companies would love to capture a share of this potentially huge online market.

In Japan, Nintendo's Game Boy Advance connects to the Internet via KDDI's mobile phone service. KDDI's competitor, the i-mode phone from NTT DoCoMo, shown in Figure 2, serves 20 million users and has been one of the few Internet-enabled phones to succeed. NTT DoCoMo found that mobile entertainment generates 52 percent of the revenue from its i-mode wireless content service, according to the Yankee Group (<http://biz.yahoo.com/bizwk/010530/09szz2wst37syaterlncg.html>).

It's probably no surprise, then, that Sony and Microsoft plan to be NTT's partners in Japan. Sony already can connect its PS2 to i-mode, while Microsoft announced that its Xbox will also connect to i-mode (http://biz.yahoo.com/mf/010605/plate_010605.html).

Nokia made a play for the wireless game world at E3 with its 9210 series phone, which doubles as a PDA and color game device. However, with a retail price of \$1,069 and a limited number of games, the 9210 will not be a commodity item.

On the other hand, the real dark horse in the game wars may be media giant AOL. In one sense, AOL owns the world's largest entertainment system in its AOL Instant Messenger. Sony said it will partner with AOL-Time Warner to provide the PS2 with instant-message-based AOL e-mail. The same Pew study citing teenage Internet usage found that 60 percent of teenagers use Instant Messenger as well.

AOL is also the main backer of another gaming handheld shown at E3. Described by the manufacturer as a low-cost bridge to 3G phones "when they are ready," the \$99 Cybiko wireless handheld computer was designed in Russia and is produced in China. The system is a wireless personal digital assistant that operates at 900 MHz and targets the teen



Figure 2. NTT DoCoMo's Internet-enabled i-mode phone, which serves 20 million Japanese users, can connect to Sony's PS2 and, when it's released, Microsoft's Xbox.

market. More than 9,000 US stores now sell the Cybiko, including national chains such as Target, Best Buy, Toys-R-U's, and others. The system establishes a peer-to-peer LAN with a 300-ft. range in which e-mail and chat can be exchanged and multiplayer games played. New games can be downloaded from Cybiko's Web site (<http://www.cybiko.com/>).

This year's E3 proved that business makes for strange partnerships. However, bad blood runs deep between Nintendo and Sony over the console wars—particularly now that Mario's creators have allied with Matsushita. Likewise, AOL's alliance with Sony appears to be a counterattack aimed at Microsoft, the partnership's nemesis in the browser and streaming-video wars. But what if Nintendo and AOL joined forces to provide Cybiko, Game Boy Advance, and instant messaging? The working world might well grind to a halt—the first, last, and only victim of ubiquitous gaming.*

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