

A Billion Connected PCs? Guess Again

Video Games, Not PCs, Will Bring Computing to the Masses



Recent foundry investments by Sony (see MPR 4/19/99, p. 1) and Nintendo to build critical chips for their respective video-game consoles illustrate the potential of these products. Sony is contributing \$400 million to its joint venture with Toshiba and building a \$600 million fab of its own.

Nintendo has committed to the purchase of ¥300 billion (nearly \$3 billion) in chips from NEC in exchange for NEC's pledge to build a new \$800 million fab dedicated to chips for Nintendo's next-generation system, code-named Dolphin.

NEC's new plant will have the capacity to make 10,000 200-mm wafers per month using 0.13-micron technology. The Sony and Toshiba fabs will each have a similar capacity. Combined, these fabs will have about 30% as much capacity as all of Intel's foundries.

All this for video games? I doubt it. I believe Sony and Nintendo expect their products to create a new market for personal computing devices, machines I dubbed "PC appliances" in a 1996 MDR white paper on this topic. Like PCs, these systems will be general-purpose computers, but unlike PCs, they will forsake flexibility and expandability to enhance reliability and sustainability. Multimedia support will be the starting point for these designs, not an add-on using minor extensions to instruction sets and operating systems.

PCs aren't dead. Despite the apparently huge advantages implied by their raw pixel and polygon throughput, game consoles will not be tremendously faster than contemporary PCs, even on 3D games. PCs will also offer superior display resolution and software compatibility. But which would you rather have in your living room—a Windows 98 PC, or a Sony PlayStation 2? For most people, the PlayStation 2 is a better choice.

Sure, video-game consoles are just toys, cheaper and less flexible than "real" computers. Point-and-shoot cameras are toys compared with professional cameras, too—and out-sell them 25 to 1. In a few years, we may think of the PC the same way we think of the Nikon F5—a great professional tool, but not one we need at home.

Sony and Nintendo seem to agree. Their investments show they expect the new systems will greatly outsell previous game consoles, and with so many new capabilities, it's easy to see why.

The new PC appliances will work as video-game consoles, TV channel guides, CD and DVD players, and living-room Internet-access terminals. (Indeed, 10 years from now we probably won't even remember that the Internet was once

the exclusive domain of PCs.) With optional components, these new systems will function as digital audio recorders (replacing cassette decks, with the added benefit of MP3/SDMI convenience); digital video recorders, like those from Replay and Tivo (thus obsoleting tape-based VCRs); HDTV tuners; and telephone answering machines.

Sony's view of the future is reflected in the industrial design of the PlayStation 2. Does it look like a traditional game console? Nope. It's a relatively calm, sober little box, like a small PC or a stereo tuner. Vast numbers of these "games" will find their way into homes *without* children, and sit on or near the TV to perform functions that have nothing to do with video games.

The TV was the center of home life in the '80s and '90s, and I believe it will take on an even greater role in the next decade. The new fabs represent just a small portion of the investments being made to support the television's growing importance. Software and content development will cost billions more, but Sony, in particular, is ready to spend. We've grown used to Sony's once-remarkable entry into the music and movie industries. One day we may see Sony-branded television programs with associated Internet content viewable on the PlayStation 2 only.

Sony already considers video-game revenue when pricing its game consoles. If Sony can extract additional revenue from TV shows, movies, and other multimedia programming (and associated advertising) viewed on its hardware, it can make the PlayStation 2 far more affordable than PCs could ever hope to be. PC profit margins may be low, but negative margins simply aren't a viable option for PC makers.

The potential market for PC appliances is huge, perhaps exceeding a billion customers. Intel's Craig Barrett speaks of "a billion connected PCs," but if Sony and Nintendo are right, it won't be PCs that are connected.

From this perspective, it's easy to understand why Intel and others are working so hard to reduce the cost of a PC—but I believe their effort is in vain. Not even Microsoft, with its X-box project, can hope to compete with true PC appliances. Cheap PCs have no future in most homes. PCs will continue to sell to business buyers and home PC enthusiasts, but these customers will be, at best, a small subset of the customer base that Sony, Nintendo, and other vendors can expect to achieve. ■

Peter W. Fleury