

lowly but surely, we're approaching a future where all entertainment and communications are pumped to and from our homes via one single high speed digital cable. From one or more terminals around the house, we'll be able to do our banking, watch television programming and play video games on demand, browse electronic stores and videophone our friends and family.

The convergence has already begun. Cable companies are working to offer video on demand. Phone companies are eyeing the cable industry. Newer televisions will be equipped with keyboards for Internet access. Many computers marketed at the home include cable converters for on-screen television. And, finally, video game consoles are being designed to facilitate net surfing.

Out of this technological convergence is born a new class of machinery: the information appliance.

Apple's primary entrant into this new race is its Pippin platform. Pippin-based devices will use a scaled-down version of the Mac OS, hook up to a standard television, and offer consumers both CD-ROM based games and simplified Internet access. Apple states in its Pippin Backgrounder (www.pippin.apple.com) that Pippin is:

...a computing platform designed to make new media content much easier to access, much more compelling, much more affordable to far more people than today's personal computers allow. It is derived from Apple's Power Macintosh hardware and software, so it automatically does many things very well. However, Pippin has been optimized for the simple, low-cost delivery of all kinds of interactive content, both CD and online, through the standard consumer electronic devices already present in people's homes.

Apple, however, has not committed to selling such a device itself; instead, it will license the technology to manufacturers such as Bandai Digital Entertainment.

Recently revealed at Los Angeles's E3 electronic entertainment exposition, Bandai's @World

is scheduled to make its North American debut in September of this year for a price of \$599 (US).

The charcoal-colored unit ships with one hand-held controller, an extended keyboard, a 14.4k modem and a seven-pound central unit which houses a quadruple speed CD-ROM drive and the logic board. The @World is equipped with a 66MHz PowerPC 603 processor, 5MB of RAM (expandable to 13), 1MB of Video DRAM, 128k Flash RAM (for storage and backup), 4MB of ROM (for the OS kernel) and a 7" PCI slot. Additionally, the @World has two ADB ports, two serial ports (for adding printers and modems; one serial port is GeoPort capable), 16-bit stereo audio input/output and support for NTSC, PAL, S-Video and VGA output. Floppy and hard drives are expected to be offered as options.

Close analysis of these statistics reveal a basic truth: the Bandai @World has many features, but overall, remains a significantly underpowered Macintosh. Its paltry 66MHz PowerPC 603 processor offers no match for its gaming competition—Sony's PlayStation, Sega's Saturn and Nintendo's new Ultra 64, designed specifically for complex polygon generation, trounce the @World.

Performance of the basic 66MHz PowerPC 603 processor, with its small internal caches (and without the benefit of an external Level 2 cache), was so poor, in fact, that Apple was forced to forgo placing the processor in its PowerPC PowerBooks and initiate the design of the 603e. The absence of more robust caches results in a stiff bottleneck when the @World must emulate 680x0 code. And as many components of System 7.5 are not yet PowerPC native, this will be often.

As any Mac gamer will attest, entertainment software is becoming more and more complex and requires increased processing power. For Bandai to release a stripped-down Mac with a 66MHz 603 near the time when Apple will introduce 166MHz and 200MHz 603e equipped computers is almost ludicrous.

Similarly inadequate is the @World's RAM configuration. At least 1MB of the base 5MB is occupied by the System—leaving only 4MB available to the active application. Most newer games, such as Descent, Marathon 2, A-10 Attack and even YOU DON'T KNOW JACK require a minimum of 5MB to function properly, and often require at least 8MB to be comfortable. If an @World owner wants to play any of these games, they must upgrade their RAM. Is this easy or convenient for the end user to do?

Despite the meagre configuration of the @World, Apple's Pippin Backgrounder goes on to tout the flexibility of Pippin devices:

Although most Pippin titles will function well in the basic system configuration, virtually all aspects of the product are designed to be upgraded by consumers. Keyboards, memory cards, mass storage devices, printers, modems, external speakers, microphones, and/or computer monitors can easily be added to a Pippin product. Manufacturers have even more flexibility, and can easily add capabilities like 3D accelerators, MPEG decoders, high speed cable modems, and/or graphic co-processors by taking advantage of Pippin's PCI bus architecture.

How simple will it be for the end user to use and expand their system? If the user decides that they wish to store anything—email, net downloads or even simple documents they have created—they will have to purchase some form of storage device. If they wish to play certain games, they will have to purchase additional RAM. The extra steps to attain limited functionality clearly contradict Apple's philosophy of making "new media content easier to access."

Will the combined price of a Pippin system with the above additions still be far less than the total price of a Mac system? If you factor in the price of low-end Mac display, the answer, unquestionably, is no. A Bandai @World system with an extra 4MB of RAM, a floppy drive and a 15" Multiple Scan display will likely total \$1299. A Performa 5215CD currently sells for \$1699—complete with a 1GB hard drive. And despite the @World's added equipment, it can never truly be a Mac.

Indeed, Apple acknowledges the limits to Pippin's upgradability:

...a Pippin product cannot be made into, or upgraded into, a Macintosh computer. While a consumer can attach a hard disk to a Pippin product, the product itself will only boot from a CD-ROM which has the Pippin System Software stamped on the disk.

In its Pippin Backgrounder, Apple laments the limited life of video game systems as a *raison d'être* for Pippin:

Video game manufacturers typically obsolete their systems every two or three years so that consumers will purchase a new set of titles, and machines to run these titles. This churn and burn philosophy has frustrated and alienated consumers.

Ironically, just a short time later, the company reveals its future intentions with the following statement:

Since Pippin is based on constantly-evolving Macintosh technology, developers can expect continuous improvements to the base hardware over time, which would include the following enhancements, at a minimum: Interactive TV. Although the current version of Pippin cannot receive video data streams, because Apple already has a significant effort in the interactive TV space this will be possible in the near future.

Given Apple's propensity for obsoleting its own equipment in two or three years, it is shockingly arrogant that it should fault other manufacturers for a "churn and burn philosophy." If anybody knows anything about frustrating and alienating its customers, it's Apple. (Remember the Macintosh IIvx?)

This second statement clearly suggests Bandai's original Pippin offering will be obsolete in far less time than the Sony PlayStation or Sega Saturn. With a poor heart, limited cognitive capacity and inadequate communication skills, Bandai's @World is dead on arrival.

or \$599, the Bandai @World is not much of a Macintosh, nor is it much of a game system. The Pippin seems destined to be a “jack of all trades, master of none.”

Perhaps most disturbing is the expressed target market for Pippin devices:

Based on market research statistics, roughly half of U.S. households state that they have no intentions to purchase a personal computer for their home; worldwide, this percentage increases to two-thirds. In analyzing this data, there appears to be three main reasons why: PCs are perceived as too difficult; PCs are perceived as too expensive; [and] PCs are perceived as irrelevant. This [last] perception, in part, reflects naiveté or a lack of knowledge about the breadth of available content for computers.

It would appear that the Pippin is designed to prey on the ignorance of the consumer.

MacSenseED@aol.com