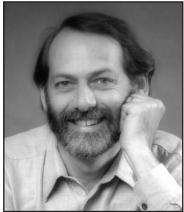# Information Appliances Seek Subsidies

New Business Models Will Be Key to Early Success of Information Appliances

Information appliances gained a higher profile than ever before at the recent Comdex show. Most of them aren't quite ready for prime time, but the number of devices shown presages an explosion of products in the coming year or two.

Showing how deeply information appliances have penetrated into the heart of the PC industry, Compaq previewed its forthcoming consumer appliance. Designed primarily for Internet access, it is about the size of a fat notebook computer but is not mobile. It has an LCD screen and a pull-out keyboard. There are no disk drives; user information is stored in flash. Compaq was cagey about what software the system would run; apparently a Microsoft OS will not be the only option. The company would not identify the processor used.

Tablets based on National's WebPad reference design, first shown at Comdex last year, are inching closer to reality. Samsung showed one design, called Izzi, that it expects to bring to market next year. Boundless Technology showed another implementation of the reference system. National also signed a deal with Acer to manufacture WebPad products. Last year's prototype WebPad used QNX software, but most of the current products use Windows CE. Windows CE will not be the only OS, however; Be, Inc. showed a version of its operating system ported to the platform.

Qubit privately showed its prototype wireless Web tablet, which is not built on the National platform. This system uses an x86 processor that the company declined to identify. Surprisingly, the software is based not on Windows CE or QNX but on Linux. Qubit says this choice provided the most full-featured Web experience, with all the important plug-ins and other features readily available. Availability of these components was a key reason behind the choice of an x86 processor as well; Qubit initially used a Hitachi SH chip but shifted for easier access to software.

These are just a few of the diverse Web appliances that were demonstrated on and off the show floor. Aside from the usual development delays, the key factor holding these products back is their high cost. With PCs having reached down below $500, makers of these appliances are justifiably concerned that these limited-function devices would be a tough sell with the normal business model and distribution strategies. The higher cost is due to their use of flat-panel displays and, for wireless tablets, the batteries and radios, as well as their initial low volume relative to PCs. A Web tablet has important advantages over a PC for Web access—notably that it is mobile, easy to set up, and reliable—but it still may be a tough sell against a low-cost PC preconfigured for Web access. PCs have the appeal of being general-purpose, and their drawbacks aren't evident in the store.

Third-party subsidies will be essential to the success of many information appliances, especially early in the technology's evolution when product costs are highest. Game consoles established the approach of using content to subsidize the hardware cost. One approach for PCs and information appliances, which has been widely promoted this fall, is a rebate for signing a multiyear ISP contract. In the long run, however, this approach will run out of steam; it is only a matter of time before everyone has an ISP. Furthermore, one of the best markets for devices like Qubit's is in homes that already have a PC (and an ISP) and are looking for another access device. On-screen advertising is another approach, but these ads aren't very effective.

The more enduring form of subsidy will come from Web sites. Each information appliance will come with a customized browser that has a permanent set of bookmarks (though users can add their own as well). Amazon.com might be willing to pay quite a bit to have the "shopping" bookmark take users directly to its site. Schwab might do the same for "stocks," Webvan for "groceries," and so forth. This approach takes a technique that has been used by the Web portals and makes the information appliance the portal. Getting this kind of subsidy for a PC will be much harder, because the PC's software can change at any time, giving no assurance of the longevity of the link.

In some cases, Internet appliances will be sold through normal retail channels but will be priced far lower than they would have been without these subsidies. In other cases, the systems will be offered directly by a sponsoring company, either for free or for a much-reduced price. Branded appliances could give e-commerce companies a valuable physical presence in user's homes as well as an interface customized for access to their services.

Information appliances are changing not just the approach to hardware and software design but also the business model for delivering information technology to consumers. In the near term, this business will be additive to the PC market. In the long run, however, many consumers may find that they never need to pay the full price of a computing device, just as they never pay the full price of a cell phone or the real cost of a game console. Ⓜ

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