

Computing for the Other Half

More Than Evolutionary Changes Needed to Make Computing Pervasive



Personal computers are currently installed in nearly 45% of U.S. homes. What I find most remarkable about this figure is that so many people are willing to put up with such awful devices. Never before has anything as expensive, intimidating, hard to use, and downright unfriendly achieved anything like this level of consumer acceptance. The PC's success as a consumer product is a stunning testament to how badly people want the capabilities a computer offers them.

In the past year, the entry-level price for decent computers dropped below \$1,000, and it should fall another couple of hundred dollars this year. This drop should enable home penetration to rise another few percent. But for computers to reach the more than 50% of homes that don't yet have them, more profound changes are necessary.

The PC is the least appliance-like device ever to achieve widespread consumer acceptance. It is an enthusiast device, not a mass-consumer product. Even the most consumer-oriented PCs today are little more than slightly extended business machines. Their hardware is riddled with anachronistic features, dictated either by software compatibility or simply by inertia. They are designed to be expandable and entirely general-purpose in nature. And their software is created by an industry that is obsessed with new features and, for the most part, shockingly bad at user-interface design.

PCs, in their current form, will never achieve the more than 90% penetration rate enjoyed by telephones and televisions. Computing devices of some kind eventually will reach this level; the Internet, more than anything else, will drive nearly everyone to want one. Whether the devices that the "other half" buys will have their roots in today's PCs and be made by the PC industry, however, is very much in doubt.

The devices that succeed in bringing computing to the other half will be less expensive than today's PCs, but that will not be the key to their success: what will distinguish them is that they will be true appliances. They will have little, if any, expandability. Their functions will be well defined. They will be reliable, and when they break, it will not be hard to figure out who to call for service. Their software will be easy to learn and easy to use. They will not require any understanding of interrupts, DMA channels, serial-port configuration, display settings, safe mode, software upgrades, network protocols, modems, device drivers, or DLLs.

It is hard to imagine that today's PCs will evolve to this state in the foreseeable future. New devices are emerging,

however, that are unencumbered by the legacy and inertia of the PC industry and are designed with a deep understanding of what makes a great consumer appliance. The likely manufacturers of such devices are not today's PC makers but consumer-electronics companies. PC makers are bogged down by their historical baggage and distracted by the success of the current PC business and technology model, and their understanding of consumer appliances is limited. Consumer-electronics companies are likely to learn computer technology faster than PC companies can shift their mindset and expertise to the true consumer world.

Many devices will vie with the PC for consumers' pocketbooks. Handheld computers, screen phones, TV-based Internet-access devices, and game consoles are the most direct competitors. In time, a set-top box that combines Internet access, video games, and a DVD player with digital TV or cable reception will appear. From a PC-centric view, this describes the living-room PC: a specialized version of the PC. From a TV-centric perspective, it is a melding of a WebTV, Nintendo 64, DVD player, and cable box.

Some PC technology suppliers could win either way. Microsoft is likely to participate in a considerably broader range of products than Intel. With essentially zero incremental cost of goods, Microsoft can readily participate in high-volume low-cost markets that would be unattractive to Intel, with its finite manufacturing capability and significant cost of goods. Microsoft also has software (notably Windows CE) that works with less expensive, non-x86 processors. Intel might chase this market with StrongArm, but it is likely to be handicapped by its desire not to distract consumers from PCs, with their more expensive processors.

Intel has been steadfast in its view that the best value for the consumer is a full-featured PC. For many consumers—and certainly for Intel—this is true. But for most of the other half of consumers, it is not; the complexity and hassle of a PC just isn't worth it for people whose primary interest is Web access, e-mail, and entertainment.

Living-room PCs will find a niche market—mostly among affluent consumers who already have a PC—but many consumers who are not yet PC users are likely to buy a less expensive, easier-to-use product. If the PC industry is going to compete in this arena, it needs to make much more rapid progress in ease of use; within a few years, information appliances will mature sufficiently to begin capturing significant numbers of customers. ■

See www.MDRonline.com/slater/otherhalf for more on this subject. I welcome your feedback at m Slater@zd.com.