

PC Industry Stuck in a Rut

Relentless Focus on Cost Limits Innovation



Although the personal-computer industry has been spectacularly successful at delivering computers at very low prices by the tens of millions, it has been much less successful at delivering innovative, easy-to-use systems. In some ways the technology moves amazingly quickly, but in terms of real platform evolution, it is agonizingly slow.

Years ago, for example, Intel and Microsoft began promoting the concept of PCs that would start up nearly instantly, without any cryptic messages flashing by on the screen. Since then, high-end processors have moved from 166-MHz Pentiums to 333-MHz Pentium IIs, but these simple usability enhancements are still absent in most PCs.

The decline of the Macintosh as a strong alternative to Windows PCs (as I detailed in my [12/29/97 column](#)) could slow PC advancements, especially in ease of use. For Intel and Microsoft, competing with the Mac isn't even on the radar screen any longer. Since it looks as if most of us are going to be stuck with PCs, it is high time to attack some of the PC's insidious problems.

PCs are just too hard to use, especially when it comes to adding new hardware. In corporate environments, a good IS support staff can eliminate many of the platform's problems, from the perspective of the user—but this is expensive. In homes, PCs cause enormous amounts of frustration, limiting the value people get from PCs as well as the percentage of households that are willing to put up with one. Unless PCs become dramatically easier to use, a large fraction of the households that have not yet bought PCs are likely to use a WebTV or similar device and pass entirely on PCs.

The intensely competitive, fragmented nature of the PC industry—the very characteristic that has driven prices so low—is also responsible for many of its problems. With no PC maker influential enough to change the platform definition on its own, the industry is ruled by a herd mentality. No vendor dares deviate much from the accepted standards, or innovate in any way that adds cost, for fear that users will jump to another supplier. For all the drawbacks of Apple's proprietary model, it has one big advantage: Apple is able to unilaterally make changes in the hardware platform and deliver the software to support them.

PC purchasers, especially on the corporate side, are a part of the problem as well. They typically buy from inflexible checklists, insisting on a fixed set of features. They often insist on full compatibility with essentially all of PC history, keeping the platform mired in legacy hardware and software.

Despite—or because of—17 years of evolution, adding on to PCs is unreasonably difficult. Recognizing this problem years ago, Intel and Microsoft created the Plug and Play initiative, which has helped, but not nearly enough. All too often, adding a new card remains a matter of plug and pray. Even new, top-brand systems are often shipped today with all, or nearly all, of the IRQs already assigned—so many customer add-ins will create an instant conflict. Asking a typical consumer to navigate through IRQ, DMA, and I/O address settings, even if they are now set on-screen instead of by jumpers, is a formula for an unhappy customer.

Apple solved this problem long ago by including a SCSI port on every system, making it painless to add high-speed peripherals. But since the 1981 IBM PC didn't have a SCSI port, and since it costs a few dollars extra to add one, the PC industry has never been able to make the leap to including it.

The PC industry has the tools at hand to eliminate much of the hardware configuration nightmare: USB and IEEE-1394. Add-in cards should be all but eliminated; additions should be made outside the box, using these self-configuring serial buses. The ISA bus, in particular, should be purged. There is no good reason for continuing to include it, but the industry seems afraid to get rid of it. It is time to chuck this piece of 1981 technology! Microsoft would love to drop ISA and VGA support, but PC makers keep insisting on it, because their customers insist on it. The inertia slows the platform's advances.

Because Intel includes it in all its chip sets, USB has become nearly universal, but it still goes largely unused. Peripheral makers have been slow to support it, and software support has lagged. USB has limited bandwidth and isn't a great SCSI replacement for scanners, printers, and video cameras—but 1394 fits this bill nicely. Unfortunately, 1394 interfaces are still expensive add-ins, and not until 1999 will they become part of the chip sets used in most PCs and thus become common.

Let's hope some PC vendors are brave enough to move the PC standard forward, even if it adds a few dollars to the cost of the system—and that consumers are aware enough to make the right choices. We can encourage such innovation by willingly paying more for systems that improve usability, not just performance; minimum purchase cost should not be anyone's primary criterion. Despite all the focus on increasing speed, improved ease-of-use would probably drive more market growth than another doubling of performance. ■

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