

# The PC Refrain: Waiting for Microsoft

## *Microsoft and Intel Team Up; Support for New Hardware Lagging*



Microsoft's recent WinHEC conference and events surrounding it illustrated significant yet subtle shifts in the nature of how PC standards, the technologies that implement them, and the power structures behind them are evolving.

Shortly before WinHEC opened, Intel announced that it was coauthoring with Microsoft the PC 98 specification. This seemingly minor event marks a remarkable detente (see [MPR 5/12/97, p. 10](#) for more about WinHEC and PC 98).

The relationship between the two PC industry titans reached a low in 1994 when Intel rolled out its NSP (native signal processing) initiative. In early 1995, Intel published its NSP reference design and Microsoft released the PC 95 document. The two were radically different. Both companies got a clear message back from the PC industry: being forced to choose between divergent paths proposed by Intel and Microsoft is untenable. By last year, the conflicts had at least receded back to private settings.

At the heart of the tension between Intel and Microsoft are their differing priorities. Microsoft gets most of its revenue from selling to the installed base, while Intel gets its revenue by selling new machines. This makes Intel much more interested in promoting applications that require the latest hardware. Many people within Intel have long been frustrated with the slow pace of Microsoft's progress in operating systems.

With the two companies now working jointly on the PC 98 document, the public split seems largely healed. They are sure to continue to disagree in many areas—the fundamental differences in their priorities haven't changed—but both recognize the need to work together to lead the industry forward.

The PC 98 document is important because Microsoft doesn't make PCs, and it therefore needs a mechanism to get the industry to implement hardware features to support advances in its software. Intel, as the dominant force in PC hardware, couldn't afford to leave this document entirely in Microsoft's hands.

While Intel is collaborating on PC 98, Microsoft still shoulders the burden of delivering the software that makes new hardware possible. WinHEC was the site of much grouching about how delays with the next version of Windows and with developer kits for the new Windows Driver Model (WDM) are holding back the industry. It's frustrating for hardware developers to add new features—often after being encouraged to do so—and then find that software support is lagging. In particular, support for USB,

AGP, and DVD will be limited until Memphis ships (probably early in 1998).

It is understandable that the hardware industry is frustrated, and it is easy to complain that, in the absence of any serious OS competition, Microsoft doesn't have much incentive to move quickly. To be sure, we can always hope for Microsoft to move more quickly and do a better job. But just as there are inherent conflicts between Intel and Microsoft, there is an inherent tension between Microsoft and the PC hardware industry.

Back in the bad old days of DOS, life was simpler. Your hardware had to meet rigorous standards—register-level compatibility with IBM's machines—and if you wanted to support any hardware beyond IBM's, you were on your own. This often meant getting individual application developers to specifically support your hardware.

Windows 3.x changed this for 2D graphics but not for most other functions. Windows 95 (and Windows NT) began the shift to a more sophisticated model, with a comprehensive set of APIs; hardware makers provide drivers that match those APIs to the hardware.

With WDM, Microsoft's class drivers provide the complex functions common to most hardware, and hardware developers create only mini-drivers for hardware-specific attributes. In the long run, this approach should make the PC platform more flexible. It makes Microsoft's job more demanding, however, and puts Microsoft's efforts in the critical path for many hardware developers.

Microsoft has a lot on its plate, and what the hardware developers want isn't always Microsoft's highest priority. Reworking its software to be Internet-focused must absorb enormous resources. Microsoft is also putting considerable effort into manageability and ease-of-use issues. These are all good things to do, but they don't directly enable new hardware features.

The PC industry has every right to keep the pressure on Intel and Microsoft to provide good platform guidance, to deliver software support when promised and with high quality, and to continue pushing the leading edge. Microsoft holds all the cards, however. Without a viable OS competitor, the hardware industry will continue to be held hostage to Microsoft's development schedules. Successful companies have little choice but to design their business plans around the plans of Intel and Microsoft—and then hope that Microsoft, in particular, delivers the software the industry needs. ■

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