THE EDITORS' VIEW

Putting Windows NT in Perspective

Volumes Will Be Elusive for Several Years, but Potential Remains

RISC processor vendors seeking a way into the high-volume PC marketplace have had their eyes on Windows NT for several years. With the pervasive DOS and Windows operating systems limited to x86 processors, and UNIX's opportunity on mainstream desktop systems seemingly forever in the future, Windows NT looked like the best of both worlds: a sophisticated, portable operating system backed by Microsoft's marketing and distribution muscle that could run the growing body of Windows applications.

RISC systems have the potential to offer Pentium-class performance at 486 prices (assuming equivalent configurations), or better performance than Pentium systems at comparable prices. A number of hurdles stand in the way, including lower production volumes, more expensive support logic, and higher-margin system makers, though these may not be impenetrable. The most serious problem of all, however, is turning out to be Windows NT itself: for mainstream PC users, it does not appear to be a very attractive desktop operating system for the near term. Because of the expensive hardware configuration it requires, NT might be better able to compete against UNIX workstations, but this is a much smaller market—and NT is lacking some important connectivity software, such as NFS.

One major problem is that NT requires substantially more memory than Windows 3.1. Users might be willing to shell out the cost of hardware upgrades if NT were going to provide enough of a payback, but for now, it won't. Two key problems are the lack of native NT applications and the reduced performance of Windows 3.1 applications when run under NT. Performance of Windows 3.1 applications is especially poor in systems with only 16M of memory; adding more RAM helps, but this makes the hardware cost penalty even greater.

Users might like NT's features, but not if it means that their applications run noticeably slower. Native NT applications should be faster, but most major application developers don't seem to be in any hurry to introduce NT versions of their software.

If NT's 32-bit addressing, pre-emptive multitasking, multiprocessor support, and other features are so attractive, why aren't application developers more excited about it? Because they see Chicago (Windows 4.0) on the horizon. Microsoft has not yet publicly said much about Chicago, but this much is clear: it is expected to ship by the end of 1994, it will offer all the key NT features most desktop users will care about, and its memory requirements will be more in line with those of Windows 3.1. Although rumors are circulating about a PowerPC port of Chicago, this operating system is full of x86 assembly language and will therefore run only on x86 processors.

Despite the hopes of RISC processor makers, the reality is that the entire Windows NT market will be small for the next several years. Furthermore, the majority of NT systems will be x86-based, so several RISC processors will have to divide up a small piece of a small pie.

So what is left of the RISC opportunity? For the next two or three years, RISC vendors must find niches where their advantages—and those of NT itself—outweigh their drawbacks. Two such niches are apparent: desktop users focused on a single, high-end application, and application servers. Both of these areas share two key characteristics: the availability of a wide range of applications is not important, and maximum performance is paramount. These markets are real, but small.

This is bad news for the RISC chip and system vendors that hope to penetrate the high-volume PC market. Even if they succeed in delivering Pentium performance at 486 prices, most users won't care until the applications exist—and it doesn't look like a flood is imminent. In seeking volume, some chip and system makers are targeting the volume PC price point of $3,000 or less, and they have made performance compromises to do so. For the niches in which RISC NT systems have a clear opportunity, out-performing Pentium by a significant margin is more important than reaching these price points.

The chance for RISC vendors to take significant market share from x86 suppliers may come, but it isn't here yet. Chicago will make it difficult for NT to become significant on the desktop. But when users are ready for the next step after Chicago, perhaps in 1996, 16M of DRAM won't seem like a lot of memory, software developers will have portable, 32-bit versions of their applications, and RISC chip makers will have developed more support chips and design infrastructure. The volume opportunity will come with Cairo, NT's second generation.

The RISC Windows NT opportunity is not to capture market share, but to gain a foothold. Those processor vendors with the resources and perseverance to wait this out may then have a more significant opportunity in the second half of the decade.♦