

## Why Windows Rules the World

From the end of January any Windows-based personal computer that you buy will come with a new version of Microsoft's operating system, called Vista. Make no mistake; this is more than just a slicker, prettier version of Microsoft's current operating system for desktop computers, Windows XP. Vista is considerably quicker, easier and more pleasant to use, and far more stable and secure, than was its predecessor. One of its particular attractions is its more intuitive way of storing, organizing and locating files. Included too are better parental controls, a built-in DVD maker, and lots of other improvements. In many ways, especially in its look and feel and ease of use, Vista out-Macs the Mac's latest operating system-the Tiger version of OS X. However, that could change when Apple releases its Leopard version of OS X in spring. Right now, the big question for most Windows users is one of timing. If they are not about to buy a new Windows PC, should they buy a copy of Vista to upgrade a perfectly adequate machine running an earlier version of Windows?

If you are running a PC with any version of Windows prior to XP (with all the Service Pack 2 updates), then the answer is most certainly yes. But if you've been religious about keeping your computer healthy with all the latest patches and updates released weekly by Microsoft, then the smart thing to do is to wait awhile. No matter how thoroughly the company may have tested it, the first version of Vista is going to be riddled with niggling annoyances that surface only when software confronts some of the crazy things we ordinary users do.

Many say Vista's problem is its sheer size and complexity. All told, the program comprises some 50m lines of computer code. And as any programmer will tell you, software contains typically five to ten errors for every 100 lines of code. So, even if 90% of them were squished during the extensive testing program, Vista will hit the shelves with at least a quarter of a million bugs in it.

That's the price you pay for bloated software, say the legions of Microsoft critics. But hang on a minute. Vista may have a complex architecture with 50 layers of interdependent activities, but it's not a massive program by today's standards. Some of those quickest to accuse Microsoft of producing "bloatware" are even guiltier themselves.

In the religious wars that rage between operating-system fanatics, the worst offenders are actually to be found in the Macintosh and Linux camps. The highly praised Tiger version of the Macintosh OS X operating system contains no fewer than 86m lines of code. And while the latest Linux kernel may be only 9m lines long, the "distro" (packaged distribution ready for installing) of an important Linux variant, such as Debian 3.1, has some 213m lines of code in it.

One important difference between operating systems such as Linux and OS X on the one hand, and Windows on the other, is that the former are highly modularized. Instead of being one humongous piece of software, they are made up of hundreds of small stand

alone programs, called packages. Both Linux and OS X are descended from UNIX, the grand-daddy of modern multi-tasking operating systems, and share the same underlying structure.

With Linux at least, this modularity allows skilled users to strip out all the bits they don't need-to create a robust and compact operating system tailored to specific needs. Linux can be trimmed down to run from a floppy disk, or fleshed out to manage a server farm or even a supercomputer. On the desktop, Linux works every bit as well as Windows, while offering greater security and fewer crashes. Installing any of the popular desktop distros such as Ubuntu, Open SUSE or Fedora is a ten-minute breeze. But unlike Windows, downloading applications to run on Linux and ensuring all the necessary "libraries" are in place is most certainly not for novices.

But the real difference between Unix-like operating systems and Windows is their design philosophies. Windows may squander computing power through its clumsy architecture. But by favoring simplicity of use over simplicity of design, Microsoft has been able to leverage cheap but powerful commodity hardware, to provide cost-effective software solutions. These may be complex in design-and full of bugs to boot-but, boy, are they easy to use and maintain. That's a winning formula in anyone's book, and the reason why Windows rightly rules the world.