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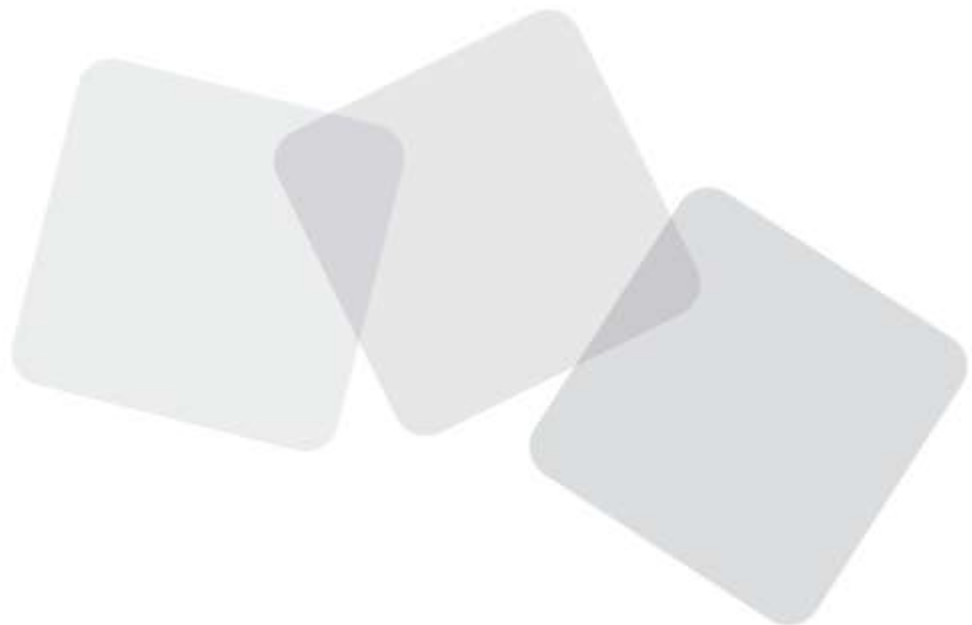
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GROWING PANES

The Changing Face of Windows from 1985 to 2009

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The Changing Face of Windows from 1985 to 2009

As any self-respecting technophile will be aware, the official release of Windows 7 is just around the corner, with the latest version of Microsoft's ubiquitous operating system being unleashed to the public on 22nd October. To many people outside the realms of IT, this may not seem like a particularly exciting prospect, or even anything that you should worry too much about. However, any new release of an operating system should make you sit up and take notice, as it could have important consequences for yourself and your business, and you need to prepare yourself if you're going to take the plunge and upgrade. In this article, we'll take a look at the pros and cons of moving up to Windows 7, and what steps you need to take when you decide to do so.

THE BASICS.

First things first: what is an operating system, you might ask, and why does it matter so much? The OS, as its more commonly abbreviated to, is the vital layer that sits in between your hardware and the programs you want to run. Just as you wouldn't expect that you could cook a steak properly by throwing it straight onto the hob rather than into a frying pan, you can't simply stick a program onto a computer and expect it to work. The OS is the bit that's handling all the interaction between your software and the physical parts inside your computer; when you click the 'Save' button in Word, it's the OS that actually does the hard job of writing the document to your hard drive. Simply put, the OS is in charge of pretty much everything that's happening.

As much as we as application software developers don't like to say it, in some ways we have the easy job. We're providing a means for users to manipulate data in many different ways, but it's the OS that's doing the hard job of allocating limited physical resources such as memory and CPU power, whilst translating the real-world inputs of users (mouse movements, keyboard presses and so forth) and turn them into the virtual interactions with the program that the user is expecting.

Since the OS is so vital a component, any changes to it need to be taken very seriously. In the most extreme situations, a complete switch between OSes can stop applications working altogether!

There are many OSes floating around in today's market, though as with everything IT-related there's been some consolidation over the years. The most populous one is, of course, Microsoft Windows which commands around 92% of the world's market¹. There's also the open-source Linux in all its various forms and Apple's MacOS. Away from the personal computer, there's also a variety of OSes on mobile phones and other portable devices, such as the iPhone OS, Windows Mobile, Symbian, BlackBerry OS and a whole host of others. The picture obviously gets a whole lot more complicated when you take into account all the different versions of these OSes that exist...

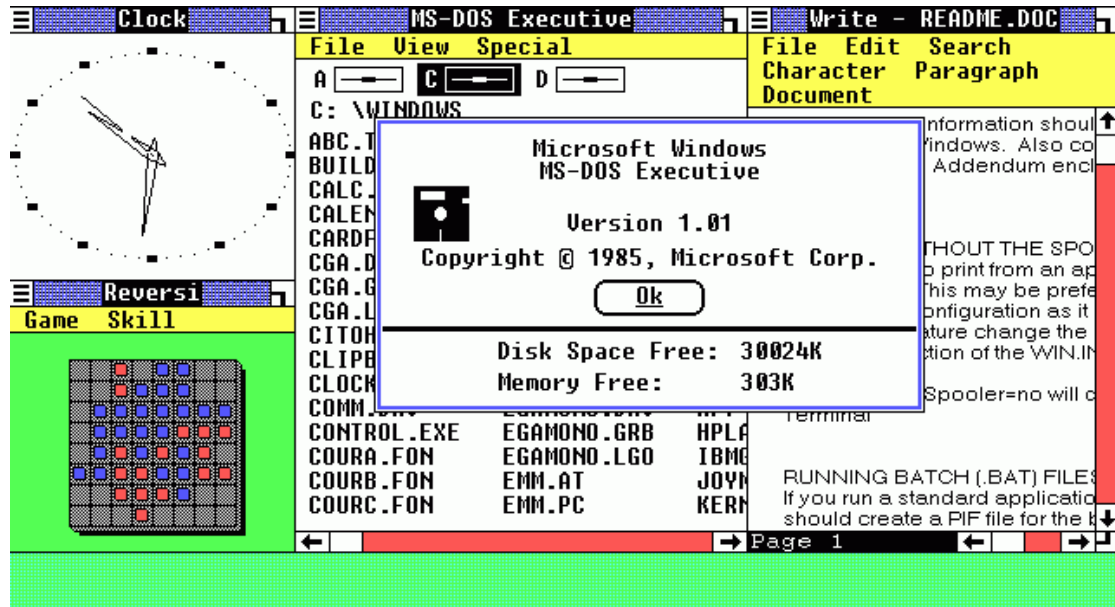
A HISTORY LESSON.

Given the potential pitfalls, why would you want to upgrade your OS? That's a question we'll come on to in a bit, but one of the simplest answers is because if you don't you'll be missing out on new features and new advances. We're

¹ According to figures taken from Market Share (<http://marketshare.hitslink.com/operating-system-market-share.aspx?qprid=8>).

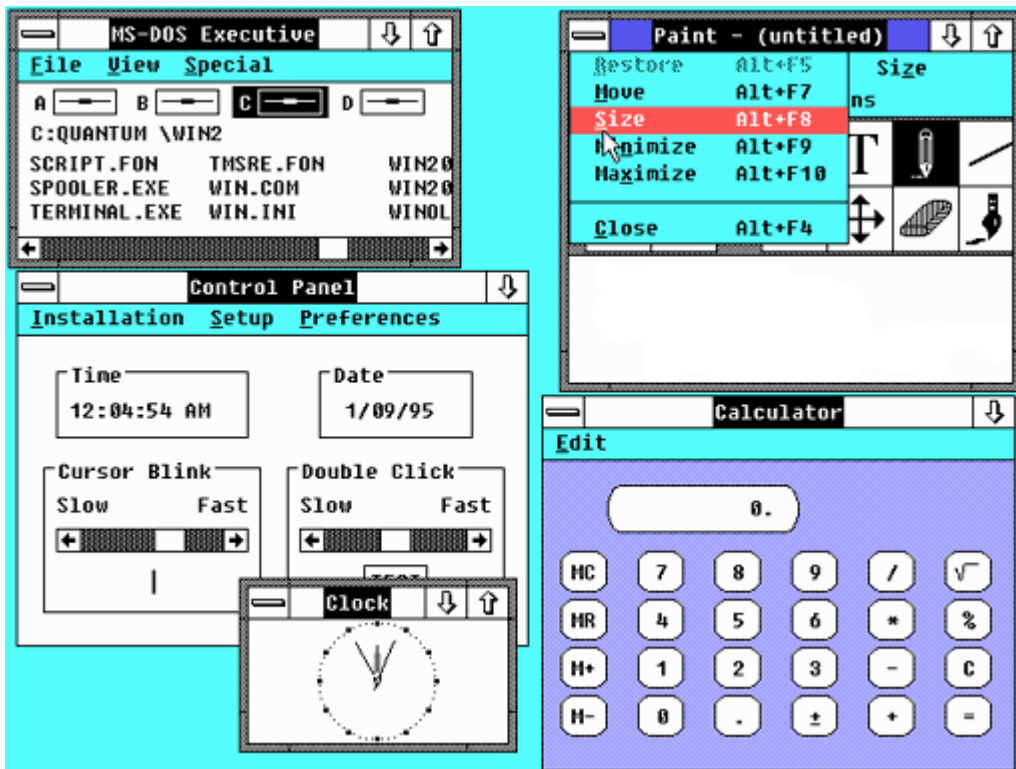
concentrating on Windows 7 in this article, so it makes sense to try and illustrate the point by showing how much Microsoft's OS has changed over the years. Imagine that the world is turning into a wavy distortion like a television flashback as we move back to a time when the floppy disk was king and when your mobile phone was bigger than your monitor...

Windows 1 – 1985.



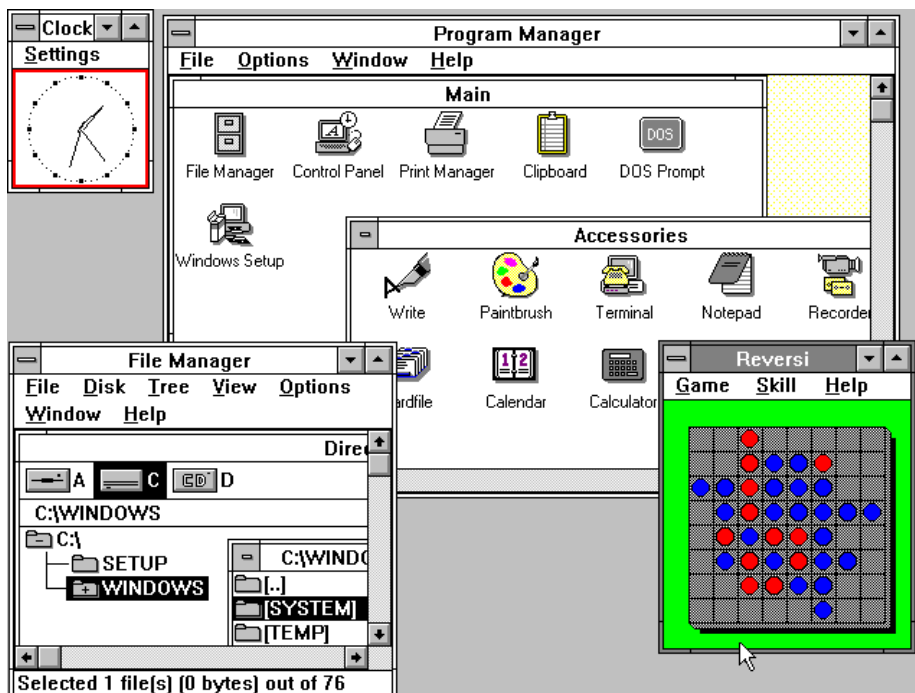
Whilst looking very basic compared to modern efforts, it's easy to see how the evolutionary chain started with Windows 1.01, or 'Interface Manager' as it was originally to be called. More a graphical front-end to MS-DOS than a full OS in itself, the first Windows came only on floppy disks and required a mere 384K of RAM (512KB recommended) to run. Due to technical limitations, it wasn't possible to have one window over the top of another, so all programs had to be tiled. Graphical support was also obviously very limited, with a paltry 16-colour palette when using CGA hardware. The OS came with a few features that are still with us, such as the Control Panel and Notepad and, amazingly, a large number of applications written for Windows 1 will still run on a modern version!

Windows 2 – 1987.



More of an evolution than anything else, Windows 2 was the first version of the OS on which applications such as Word and Excel ran. The newer release also allowed for overlapping windows, and brought in such now-ubiquitous terms as 'Minimise' and 'Maximise'. As of the later variation 2.10 (released in May 1988), Windows now required a hard disk, whereas before you could have got by with two floppy disk drives.

Windows 3.0 – 1990.

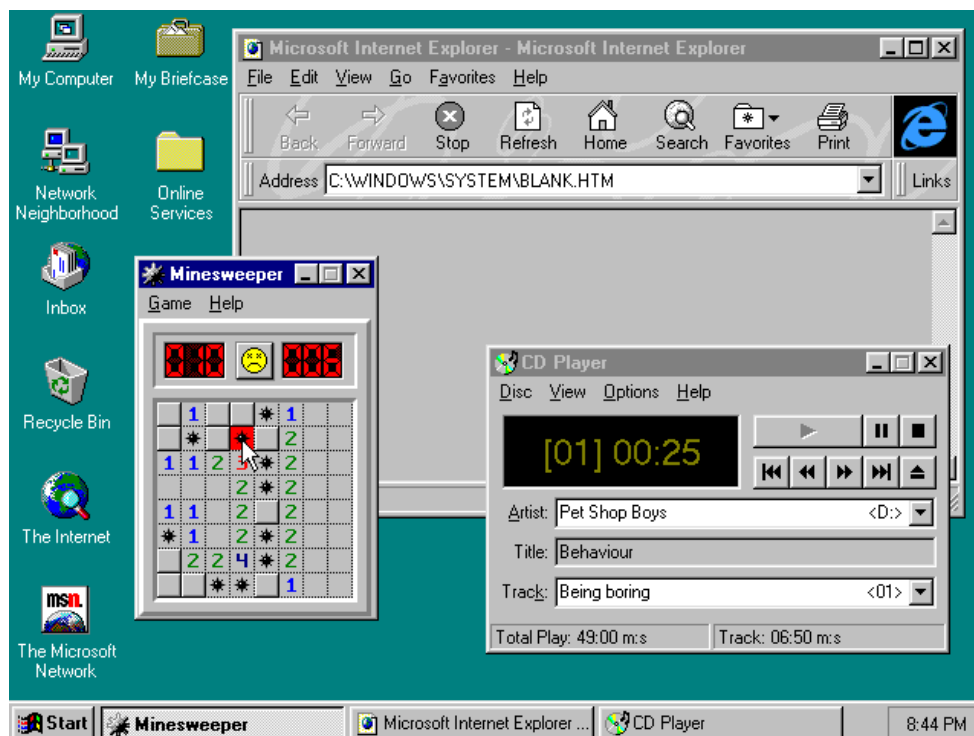


For many of us, this is the first version of Windows that we really remember. With a new user interface with support for an incredible 256 colours and the ability to utilise the memory management capabilities in newer Intel 80286 and 80386 processors. From 1991 onwards the OS took its first small steps into the world of multimedia (a term that few would have heard of at the time) with extensions to allow support for sound cards and CD-ROM drives. Assuming your PC was up to it, Windows 3.0 also enabled you to run multiple MS-DOS programs at once in separate windows (earlier variants only allowed you to run one full-screen one at a time).

Windows 3.1 – 1992.

Despite the small change in version number, 3.1 actually provided some significant changes from its predecessor, most notably scalable TrueType fonts and 32-bit disk access. OLE (Object Linking and Embedding) support was added with version 3.1, enabling you, for instance, to more easily copy images and text from one application and paste them into another. Corporate users may remember Windows for Workgroups, which was an extension of basic Windows 3.1 that included built-in networking support, though it wouldn't be until mid-1994 that Microsoft released official support for the TCP/IP protocol that the Internet runs on.

Windows 95 – 1995.



'If you start me up I'll never stop', sang the Rolling Stones in the song that was used in the memorable advertising campaign for Windows 95. Whilst not exactly true, as anyone who suffered a blue screen of death at the hands of the OS will attest, the sentiment was echoed by Windows 95's success, becoming the most popular OS ever and truly cementing Microsoft's position as the leader in the mainstream PC marketplace. Windows 95 was a huge step forward from earlier editions in many ways, introducing things that we probably can't imagine being without today, like filenames that could be longer than eight characters and built-in right-click functionality for context menus. The Start menu was also introduced, enabling faster access to programs and documents. From a technical perspective, Windows 95 was the first version of the OS to provide 32-bit



support, allowing for greater memory management and support for more sophisticated programs.

Windows 95 can be held responsible for the introduction of the phrase 'Plug and Play' into modern parlance. The theory was that you should be able to just stick a hardware device into your PC and the OS would install the drivers automatically without you having to do an awful lot, unlike the days of Windows 3 and prior when you would need to fiddle about with config.ini files and the like. The fact that people often referred to the technique as 'Plug and Pray' probably tells you what this was like in practical times. It did often seem like something of a lottery as to whether or not a new hardware device would work, but at least the thought was there.

Windows NT 4.0 – 1996.

The eagle-eyed and knowledgeable amongst you will note that we've been pretty much ignoring Windows NT up until now, mainly for fear of confusion. The NT family were designed from the ground up to more solid, enterprise-standard OSe that didn't really rely on the aging MS-DOS. NT 4.0 was actually the fourth release of the OS, but in typically-confusing Microsoft naming fashion, the first release of it was actually NT 3.1. NT 4 used the Windows 95-style interface, though under the bonnet there were some fairly substantial differences. Most notably, very few games would run on the OS, as it lacked complete support for the DirectX drivers that Windows 95 used in later versions. This didn't really matter too much, though, as NT was always targeted at the business market rather than consumers.

Windows 98 – 1998.

The next consumer release of Windows after 95 was touted as integrating the Internet into your computing experience, though in the days prior to large-scale broadband adoption this was relatively limited. In truth, there was not an awfully big difference between 98 and its predecessor: it was still based on MS-DOS, for instance. There were some differences, including native support for hard-disks larger than 2GB in size with the FAT32 file system, though Windows 95 also contained this from its second (OSR2) release onwards.

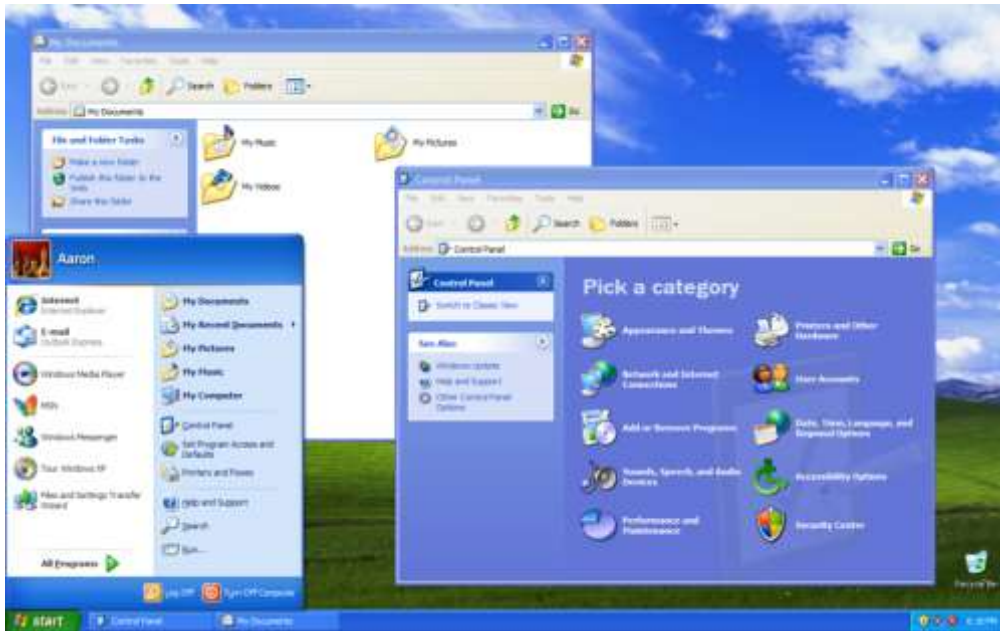
Windows 2000 – 2000.

Confusing its consumer nomenclature with its business one, Windows 2000 was Microsoft's follow-up to NT 4. An important release, 2000 included a host of new features, such as an updated Windows 98-style Explorer, a new version of the NT file system that included support for disk quotas and various security measures, and importantly Active Directory, a new way of organising Windows network domains.

Windows Me (Millennium Edition) – 2000.

Windows Me has a bad reputation, possibly the worst of any Microsoft OS prior to Vista. It suffered major criticisms for its lack of stability, and it probably didn't help that it wasn't a great leap over 98. Again, it was still MS-DOS based, though in Me the support for this had reduced and there was no ability to get to an MS-DOS command prompt outside of Windows's virtualised one. Me included a host of new multimedia features, such as an updated DVD player and Windows Movie Maker, but it didn't last very long, being superseded just over a year after its release.

Windows XP – 2001.



According to statistics, this is most likely the version of Windows you're running at the moment. XP effectively amalgamated the consumer and business strands of the OS (though server variants continue to be produced), moving away from MS-DOS foundations to the more stable NT base. XP featured an updated graphical interface that, whilst being mocked by some for its Fisher Price-style colours, proved to be more user-friendly and intuitive than previous releases. Compared to Windows 95/98/Me, it was also remarkably more robust; whilst it didn't banish the blue screen of death to the confines of history, it did at least make it a less frequent visitor. Aside from the interface, there were many features new to XP, far too many to list here. Suffice to say, though, adopters of the OS benefitted from faster loading times, easier rolling-back of files and drivers when things went wrong, support for newer hardware, sophisticated and easy-to-use native networking support and numerous security improvements.

Windows Vista – 2006.

XP had proven staggeringly successful, and it would be five years until Microsoft would release another OS. Perhaps it was in part this wait that left so many feeling disappointed. In terms of aesthetics, Vista is leaps and bounds ahead of XP, and marks perhaps the biggest visual change in the history of the OS. The Aero interface was designed to take advantage of improvements in graphics card technology, introducing lots of new animations and effects. Windows Explorer was also radically changed, to include a breadcrumb bar navigation system and other organisation features. Behind the scenes, security was improved with the much-maligned User Access Control (UAC) system, support for IPv6 was added, and major changes to the graphical sub-systems were introduced. Unfortunately, Vista was not a critical success, with many lambasting the steep hardware requirements. For a user perspective, the seemingly continuous prompts from the UAC server mainly to annoy, leading many to switch off the feature and open themselves up to security holes that the system was meant to plug in the first place.

THE FUTURE, TODAY.

That's enough of a history lesson: let's move onto Windows 7. On the face of it, this seems pretty similar to Vista. Certainly, it uses the same Aero interface and has plenty of bells and whistles. However, it is quite a different beast. In a speech

in Japan in 2007, Bill Gates stated that Windows 7 was intended to focus on improving performance, and using the OS in comparison with Vista this certainly shows. The interface seems more responsive and smooth, boot times are noticeably quicker (something which is even more notable when compared to XP) and application start-up times are reduced. It also looks a lot nicer...



Should you buy it, though? Well, that's not a question that's straightforward to answer: as with everything it depends up your personal and business circumstances. However, whilst it should be added that this article is not at all intended to be an advert for Microsoft's latest efforts, it's arguable that you should at least consider upgrading. This probably needs a little bit of justification, so here's a few reasons why upgrading might be a good idea:

- **Security:** Almost weekly a news story breaks about a new virus that's got loose across the globe, and that's not to mention all the ones that you *don't* hear about. With Windows being the world's most popular OS, virus writers tend to target it. XP (in its initial releases) was criticised as being full of security holes; numerous patches and three service packs help to address these issues, but Windows 7 (and its predecessor) were built from the ground up with greater security in mind, and besides – what's the likelihood that every machine in your business is bang up-to-date with the latest Microsoft hot-fixes? Of course, they will still be lots of patches, but at least you'll be starting from a more solid foundation. The presence of UAC alone will help prevent some unwanted code from running on your machine;
- **Future support:** Tied in with the issue of security, it's worth bearing in mind that no further upgrades from Microsoft will be available for Windows XP after 2014;
- **Better hardware support:** All that fancy hardware in your new laptop may not be going to waste, but it's highly possible that it's not being used to its fullest if you're on an older version of Windows. For instance, chances are that you've got a multi-core processor inside your machine. In very simple terms, this just means that your processor can execute more

than one instruction at a time. However, programs have to be written in a special way to take the greatest advantage of this, and older versions of Windows weren't;

- **Speed and performance:** Certainly compared with Vista, Windows 7 is a very smooth and agile performer. Lots of work has gone into the centre core of the OS to improve performance and to eradicate bottlenecks: gone (allegedly) are the days of your desktop, task bar and start menu freezing whilst a program you're shutting down hogs all the graphics resources of the system. Better power management features also mean your laptop won't be running out of battery life quite as soon (assuming you turn off a lot of the fancier graphical features whilst you're on the move). Oddly for a new release of Windows, it actually runs better on lower specification hardware than its predecessor; netbooks that struggled to run Vista will be able to cope with Windows 7.

...And obviously there's a whole lot more that you can find in Microsoft's marketing material.

Let's presume, then, that you are considering upgrading. You're on the Internet on the web-site of your IT supplier, with five copies of Windows 7 Professional Edition² in your shopping basket about to click the 'Buy' button. Before you do so, though, you need to give some consideration to a number of factors, such as:

- **Hardware compatibility:** Windows 7 provides a great deal of support for new and existing hardware, but if you're using an obscure old device, then you might be out of luck. If you are in such a position, the first thing to do is to look around the Internet (the manufacturer's web-site being a good place to start) to see if you can find a Vista driver. If that exists, then in all likelihood your product will work (odds are Windows 7 will install it by default on installation). If there's no Vista one, you can try an XP one, but that's not guaranteed to be successful. If you have no joy at all finding a driver, then you should ask yourself whether you really *need* that fifteen-year-old Iomega Zip Drive. If the answer really is 'yes', then consider whether you could use a virtual PC³ running XP instead;
- **Software compatibility:** As with hardware, this is a question of currency. The probability is that any programs released within since the launch of Vista in 2006 will definitely run, and most XP programs will too. However, if you're dependent on an application that was built for Windows 95, then you might be out of luck. The only real problem with this is that it's difficult to say for sure until you try it. Have a search around on the Internet to see whether anybody else is running the program with Vista or Windows 7 and find out if they're having problems. Alternatively, if possible check the program on someone else's machine that is running Windows 7. If the program is a bespoke one, check with your provider:

² To begin with, Windows 7 will be available in three main flavours: Home Premium; Professional; and Ultimate. The best choice for most businesses will be the Professional Edition, but even Home Premium provides all the basic networking functionality you'd need. There's also a Starter Edition, but that's not available to buy on its own, merely available as a pre-installed product on netbooks and other low-end devices. Just to note also, there's no separate 32- and 64-bit boxes, all editions come with both versions (though an individual licence only covers you to be running one of them at once).

³ You can download Microsoft Virtual PC for free from <http://www.microsoft.com/windows/virtual-pc/> - this will allow you to create a 'PC within a PC'. We'll look at virtualisation in detail in another article.



DBL has tested the majority of its programs to ensure they run on Windows 7, and we provide a consultation service to all of our clients should they wish to upgrade;

- **Upgrade or new install?:** One of the big questions to ask yourself is *how* you're going to upgrade. Are you going to try and do what's called an 'in-place upgrade' or a whole fresh one? The answer to this will depend upon a number of factors, most importantly your current OS. In-place upgrades are only available for Vista users: if you're running XP or previous then you need to do a fresh install. Of course, it's not quite that simple: if you're upgrading from Windows Vista Business to Windows 7 Home Premium, you need to do a full install, and the same is true for moving from Vista Business or Ultimate to Windows 7 Home Premium or Professional.

The key difference between the two install types is that with a fresh install, you're going to be wiping off everything that's on your machine (programs, documents, images, etc.), whereas these get kept with an in-place upgrade. The moral of the story is: if you're going to need to do a full install, back up your important information to the network or an external drive first! In some ways, despite the inconvenience, it's often a good idea to start with a clean slate when changing OS: it's all too easy for your previous installation to have become clogged up with unwanted applications, and the simpler you can make the upgrade the less likely it is to go wrong!;

- **Hardware requirements:** The basic requirements for Windows 7 are listed below. Check with your IT provider if you're unsure about any of these.
 - Processor: 1GHz 32-bit or 64-bit processor;
 - Memory: 1GB RAM for a 32-bit installation, 2GB RAM for a 64-bit one;
 - Hard disk: 16GB free space for a 32-bit installation, 20GB for a 64-bit one;
 - Graphics card: DirectX 9 compatible with WDDM (Windows Display Driver Model) 1.0 driver.

CHOICES, CHOICES.

So, there you go: some reasons why you might want to upgrade, and then several questions to ask if you do. Upgrading an OS is not a straightforward proposition, but in fairness to Microsoft they have made the process easier than it's been before. There's an upgrade advisor that you can download from <http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=1b544e90-7659-4bd9-9e51-2497c146af15> that will analyse your system and the programs running on it to see whether there are any known issues. As always with such things, it's best to take some of the results with a pinch of salt, but it's a good starting point and will let you know if there are any real show-stoppers.

Finally, just to mention that for our customers **DBL** will provide any help necessary if you decide to go down the upgrade route. If you're *not* a customer, then we can still provide consultation either ourselves or via one of our partners. Happy upgrading!



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