



Windows Millennium

Why you're going to want to upgrade

The replacement for Windows 98 is almost ready to roll. New name, final beta – Windows Millennium is on the runway. And there's more to it that many of us were expecting.
Ian Sharpe reveals all

For a while, the gossip was that Microsoft had pulled the plug on Windows Millennium. Other rumours said that networking had been removed, that Millennium was 'mondo' buggy, that it was slated for release next year, this autumn, this summer...

The real story has been hard to follow because Microsoft did its best to keep the project away from the press. That may have helped keep media attention focused on Windows 2000, but it also allowed the rumour mill to crank out unflattering half-truths and nonsense at full capacity.

Millennium hasn't been canned and neither has networking been excised. There are still obvious rough edges and some people will doubtless experience the compatibility problems that always accompany a new Windows. But to describe Win Mill as mondo buggy stretches the truth beyond its elastic limit.

Our back door into Microsoft's secretive test program enabled us to bring you a full report on Beta 2 in March's *PC Plus*. Now we have the Beta 3 Release Candidate.

The official word is that it's the final beta, feature-complete and ready to roll bar final polishing and debugging. We find the claim a little optimistic – the help file points to things we couldn't see, such as a DVD player.

One of the most immediately obvious changes is the new name. It is supposed to convey the idea that the operating system is primarily for home and entertainment use. Form your own opinion,

but we have yet to find anyone who doesn't gag over it.

Aside from the cosmetic changes and reliability improvements we covered last time, the emerging thrust in Beta 3 is Windows as an entertainment platform. Enhanced game support was evident in Beta 2. We also predicted that audio and video handling could take a major stride forward before release, and so they have. Read more about that over the page. These are genuinely exciting developments, not so much for what they do now, but for the trend they represent.

That said, we must keep in touch with reality and remember that Windows Mill is based on the Win9x core – an agricultural old tool, no matter how Microsoft paints on the glamour with new gadgets and interface restyling.

Bill Gates once said that Windows 2000 would supersede both NT 4 and Windows 98, but the plan changed. The demise of the 9x line is now postponed until a consumer version of Windows 2000 is ready. Originally codenamed Neptune, the project has been merged with another Windows 2000 derivative and is now named Whistler, after a Canadian ski resort.

Windows Mill is still a welcome step forward in many ways, with new features designed to make it easier to use, more reliable and a better entertainment platform. In the coming pages we will update you on developments since March and explore the new operating system in greater detail.



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WINDOWS MEDIA PLAYER 7

A massively upgraded audio/video player puts entertainment at the heart of Windows – and surprisingly it rips CDs, too

Our Beta 2 preview tipped Digital Content Management and digital music support as hot favourites for inclusion in Millennium. That prediction is fulfilled by the brand new Windows Media Player 7. This major upgrade from version 6.4 combines a new library system with additional source capabilities, tools and gizmos which lift Media Player 7 to somewhere near top billing on Win Mill's feature list.

At the core of the new program is a database called the Media Library. This catalogues every audio and video file on your system, classified by criteria such as artist and genre, and regardless of source – downloaded MP3s, WAVs that came with applications and so on. Worthy, but a little dull you think? Bear with us...

Media Player handles audio CDs so you no longer need a separate player utility. The jaw-dropper is that it rips CDs, copying them to disk in WMA (Windows Media Audio) format at about 1MB per minute's recording. Quality is selectable, enabling you to change how much space is taken up.

So, dedicate a chunk of that huge hard disk to a music library, and you can store the best part of your CD collection and your favourite MP3s with every track catalogued and ready to play at the click of the mouse. Want a custom compilation of tracks in your collection? No problem – the playlist function does it nicely.

Added to an already enticing picture is support for portable music devices. Plug in a player, and Media Player will copy your chosen tracks to it. WMP7 does not convert CD audio to MP3 format, so this is not quite so flexible as it seems. Also, very few devices are supported at present.

WMP7 has integrated support for the on-line guide at www.windowsmedia.com, and for downloadable CD track names. It'll tune into Internet radio stations, too, which brings us to the key element of the Media Player story: streaming media – audio and video that plays as it downloads over the Net. *Gates' way to heaven* opposite explains why this makes Media Player 7 so significant.

This is the first Microsoft application to be skinnable, enabling you to change the program's

appearance when not maximised. Only a few skins are supplied but more should be available for download. Now that Microsoft has taken its first step towards what third party programs have been doing for a while, we're sure we'll see more of this, though probably not in Windows Mill. It's just a question of how far Microsoft will go with skins – selected applications, or the whole of Windows?

Media Player's visualisations translate music into animated graphics. Options range from old-hat oscilloscope and graphic equaliser histograms, to more inventive styles which are interesting for a few minutes.

What we think: We found Media Player 7 flaky, but remember this is a preview edition. Microsoft is set on making Windows a platform for music and video storage and playback. Media Player 7 is the first time it has come through so strongly and it should go from strength to strength. The WMP7 beta has been freely downloadable from Microsoft and the final release should be at www.microsoft.com/windows/mediaplayer around the same time as Win Mill hits the shops.

NEW FEATURES

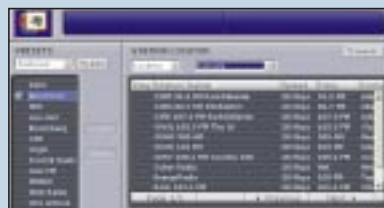
Windows Media Player 7 – what's new

The new interface looks good and it's user customisable too. Here's how it works...

The Media Guide section brings you news, reviews, information, directories and downloads from the WindowsMedia.com Web site.



In the Media Library is a database of all the audio and video on our computer – categorised, searchable and instantly playable. Favourite tracks can be grouped in playlists. It'll even rip CDs.



Listen to radio stations broadcasting over the Net from around the world. You can easily search for stations specialising in your preferred listening.



Media Player 7 wearing one of its small wardrobe of skins. Slide the DJ's ears out to access more controls. Inside his skull is one of the animated visualisations.



WINDOWS MOVIE MAKER

This new accessory lets you compile streamable movies from audio and video sources

Windows Media Technologies is Microsoft's weapon in the battle to dominate the Internet media distribution business. If it succeeds, the profit potential is gigantic. Failure will cloud Microsoft's future with uncertainty.

Windows Media Services Server running on Windows 2000 Server, coupled with broadband Internet access, provide a distribution system. WMP7 and improvements in IE5.5 enable every Windows user to receive content. To breathe life into all this plumbing, there has to be a ready way to produce stuff to pump through it.

Enter Windows Movie Maker. WMM enables you to bring together media files and assemble them into movies which can be delivered as streaming media. A typical session would see you importing or capturing video clips and still images such as title screens and diagrams, and arranging them in sequence on the storyboard. You can also add a soundtrack, done as a voice-over recorded in WMM or imported as a file.

To make full use of WMM, you need access to video capture. You may also want additional sound and video editing software to finesse the material before compiling it into your show.

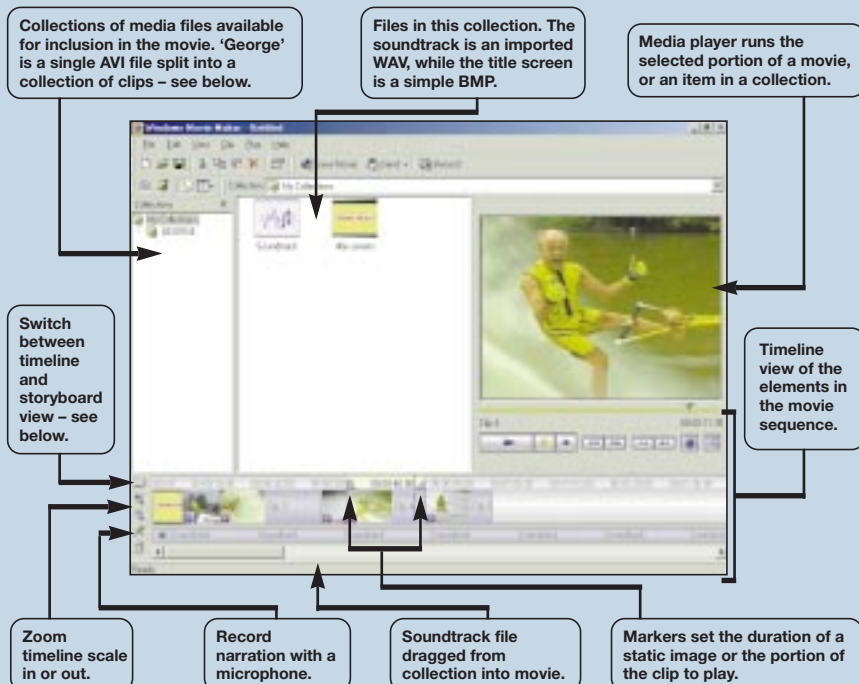
Why would anyone bother with streaming video when most of the country taps into the Net via 56K modems? Remember that the US is ahead of us on the broadband access which makes this technology both feasible and desirable.

What we think: Movie Maker is not an industrial-strength production facility but it has enough clout for simple leisure and business productions. As with Media Player 7, there are glitches in the beta which must be ironed out.

NEW FEATURES

Movie Maker up close

Here's how easy it is to produce your own movies with the new Windows accessory



MAKING BILL GATES RICHER

Microsoft's plan for PCs

Media Player 7 and Movie Maker are part of a gameplan that Microsoft hopes will win it glittering prizes

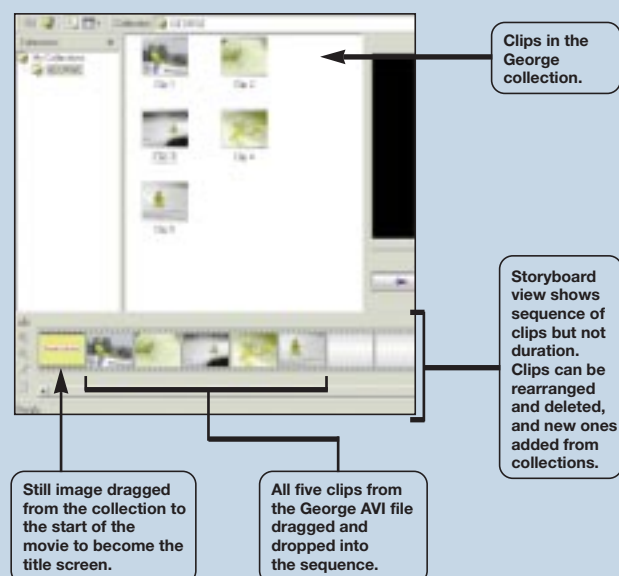
To think of Windows Media Player 7 (WMP7) as just the latest version of a naturally maturing accessory would be to miss its true import. Gates is on record as saying: "Our goal is not to be a media company, but to provide the software infrastructure to those who are publishing and accessing content."

WMP7, Windows Movie Maker and internal revisions to Internet Explorer are all part of this grand design. Their appearance came with the announcement of Windows Media Technologies 7, the latest generation of Microsoft's platform for the delivery of high-quality video and audio over the Internet.

Other elements of this include a system of rights management, a software development kit and, of course, a Windows NT/2000-based server product.

Microsoft hopes Windows Media Technologies will help it become the software provider of choice. At one end will be companies with content to sell. At the other will be you with your broadband Internet access (DSL and cable modems). In the middle will be Microsoft, making an honest coin or six as the waiter.

Creating a storyboard





EXPLORING WINDOWS MILL



Is it worth upgrading, or even sensible? Our guide to the rest of the new features will help you decide

While Windows Mill uses elements of Windows 2000's user interface and other bits and pieces, it is not based on the Windows 2000 core. So if there's no support for multiprocessing,

NTFS or other NT goodies, what is new in Win Mill? From here on we show you the main features categorised by Microsoft's stated design goals, plus the sub-text of converging with Windows 2000.

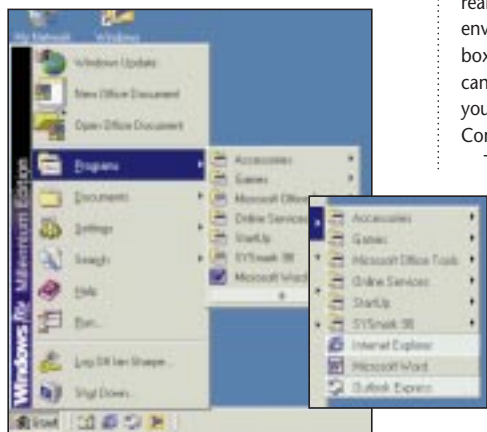
The road to Windows 2000

Microsoft's has long wanted to dispense with the Windows 9x line in favour of NT technology. Compatibility issues have been an obstacle to this, so each new version of Win9x narrows the gap in fairly painless increments.

Three things in Windows Mill nudge the world towards readiness for a derivative of Windows 2000. The removal of real mode is covered elsewhere and is something you need to consider.

New drivers for many classes of device are built to the Windows Driver Model (WDM) specification. These are compatible with both Windows 2000 and Windows 98 onwards, making it easier for manufacturers to support both systems. Millennium needs updated drivers to implement new features such as hibernate mode and Windows Image Acquisition, but older Windows drivers should work if these are unavailable.

And then there's the user interface. The major changes in Windows Mill have been cribbed directly from Windows 2000. Our screen grabs show you what to expect.



The Start menu displays most-used items only. Further options are accessed by clicking the button at the bottom, or just hovering the pointer until the list expands of its own accord. Fortunately, a property setting enables you to switch back to the standard menu style.



Greater use of HTML is evident, such as here in the replacement for the Find tool. As well as files, folders and computers, you can switch the display to a Web search, or a person search in your local address book or via one of the people finders on the Web.

"It just works"

That's Microsoft's way of saying less flaky and easier to configure and repair.

Driver signing introduces Microsoft certification of third party drivers. In the longer term it should help reduce problems caused by third party software.

What we think: The shocker is the removal of real mode. Although there is still an MS-DOS environment within Windows to provide a DOS box and enable you to run DOS programs, you cannot reboot to an MS-DOS prompt. Neither can you use real-mode drivers that were installed from Config.sys or Autoexec.bat.

These start-up files are present for compatibility with older software, but are ignored by Windows except for environment variables. Some older hardware will therefore be unusable, and programs that require exclusive control of the machine will be also fall by the wayside. Windows Mill is definitely not for those using older hardware and software.

After that sad but necessary piece of surgery, the rest of the news is more upbeat...



Windows Update has options to automatically detect and download upgrades in the background, then ask if you want to install them. Or it can check when updates are available and ask permission to download – take your pick, or stay with the old manual method.



Protect against crippling software installations by asking System Restore to take a system snapshot beforehand. Windows is then able to undo changes by rolling back to the way things were.



System File Protection invisibly guards Windows' integrity. When a program or user overwrites a key system file with a different version, the original is silently restored. Here we see part of SFP's log file after a software installation. This self-healing is applied to a list of around 800 files.



If Windows just doesn't work despite the protection, the improved help system is supposed to feature on-line assistance from manufacturers. We can't say if this will dig you out of more holes than ever before: there's only Microsoft to link to in the beta edition.



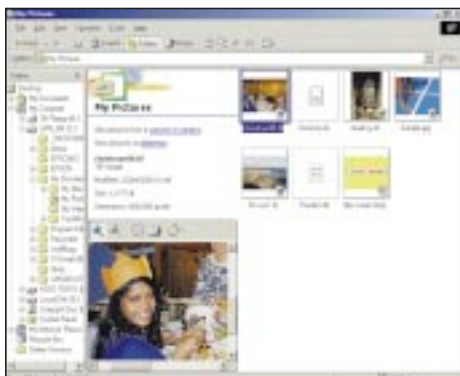
Digital media and entertainment

Earlier on we examined Windows Media Player 7 and Windows Movie Maker. These strengthen Millennium's already enhanced support for fun.

Beta 2 had an Application Manager to simplify life for gamers. This appears to have vanished. The idea was that game installers designed to take advantage of it should ask Application Manager to find the required disk space. If a pre-set size limit would be exceeded, Application Manager chucks away files belonging to the least recently played games. These files can later be re-installed from the original CDs if required.

Support for digital image capture devices is integrated into the operating system. Known as Windows Image Acquisition (WIA), this requires new drivers. Some come with Windows; others must be obtained from manufacturers – assuming they decide to write them.

What we think: Your old Win9x scanner and camera drivers should work as before, but won't be accessible to applications written to work only with WIA. Windows will, however, make WIA devices available to applications that only know about TWAIN.



The My Pictures folder indicates how digital image capture has been integrated into Windows. Note the 'Get pictures from a scanner or camera' link on the upper left, which enables you to scan or download an image directly into the folder. The viewer pane offers zoom, rotate, print and full-screen preview tools.



Clicking the 'Get pictures...' link takes you into the Scanner and Camera wizard. This only works for devices with the new WIA drivers. Others have to be operated as they were in Windows 95 and 98.

NEW FEATURES

Home networking

Rumoured to be out, it's actually in

"Windows for Toasters" became a popular joke when Microsoft mooted plans to embed its operating system in domestic appliances. Some of you may even have scoffed at our March prediction of support for appliance control via home networks. Well scoff your words – we were spot on.

An optional Windows Mill component is Universal Plug and Play which "enables seamless connectivity and communication between Windows and intelligent appliances". Gags about Web-enabled kettles apart, home automation is a real initiative and the concept of what constitutes an appliance goes a lot further than the kitchen.

Unfortunately the tastiest features of home networking lie in the future, so we must leave those for another time.

The goal has been to make setting up a network easier. It had already become pretty easy in Win98SE but the new wizard shown in these highlights makes life even easier for inexperienced users.



1 Pick a printer and a folder to share.



2 Answer questions about how you access the Net and whether you want to share a connection.



3 And a few steps later you're here. A scary-looking job that novices used to ask an expert to do is now often a two-minute no-brainer. It isn't infallible, though, and manual tweaking may still be needed.

The on-line experience

Microsoft wanted to make Millennium a "premier on-line experience", by which it means easy to set up, easy to find what you want, and easy to control access to content in a family setting.

The wizard for setting up a Net connection looks much the same as the one in Win98SE. On the surface, Internet Explorer 5.5 seems to be the most trivial possible update from version 5. In our initial report we mentioned the new print preview option. IE5.5 also has a tickbox to turn on a security check before dialling into the Net.

What we think: What this will do is a mystery. After we'd wound the Internet zone security setting down to 'low' and turned on file and printer sharing for Internet TCP/IP, this beta cheerfully connected without a word of warning.

The main reasons for IE5.5's half-point hike in version number lie beneath the covers where there are new developer goodies. More detail can be found at <http://msdn.microsoft.com/voices/ie55.asp>.



IE5.5 offers new Cascading Style Sheet styles and more control over user interface elements such as coloured scrollbars, transparent frames and, shown here, support for zoom levels.



This video has a text commentary that keeps in step with the action. IE5.5's support for Synchronised Multimedia Integration Language (SMIL, pronounced 'smile') is responsible. SMIL adds a time dimension to Web pages, enabling HTML, animation and streaming media to be orchestrated.



Upgrade questions

Obviously with this being a beta we're reluctant to give anything like a final verdict. However, there are some things we can say...

SPEED TEST

How fast is Windows Millennium?

Buying a new Windows often means your hardware is no longer adequate, but Windows Mill shouldn't be a drag

The BAPCo benchmark suite we use for our PC group tests exercises a machine hard for several hours using a variety of real software packages. Tests are repeated until a consistent pattern of results emerges.

On a modest system sporting a 366MHz Celeron and 64MB of memory, virgin installations of Win Mill and 98SE gave the same scores to within a

couple of percent. Beta software generally carries additional program code to help developers with debugging. This tends to slow performance, so Win Mill may loosen up a bit when the debug code is removed.

Boot-up time in this release is slow – nearly half as much again as Win98SE. We were surprised because the removal of real mode

was supposed to speed things up. We could be seeing a beta code artefact, so we'll have to wait for the final cut to get the true picture.

The take-home message is that upgrading to Windows Mill shouldn't carry a hidden hardware upgrade cost unless you have unsupported devices. This is most likely with older hardware.

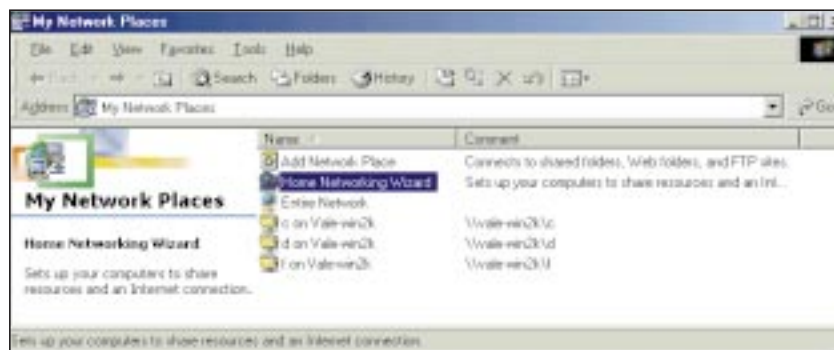
SYSTEM REQUIREMENTS

Have you got what it takes?

The minimum PC specification shouldn't change much from these requirements for Beta 3...

- Pentium-class processor running at 150MHz or higher for Windows itself, but a 266MHz PII for Windows Media Player 7 and a 300MHz PII for Windows Movie Maker;
 - 32MB of RAM for Windows, but 64MB for WMP7 and WMM;
 - Between 460MB and 675 MB hard disk space for Windows – 2GB upwards if you're going to work with video;
- Of course, 32MB memory and a 150MHz processor are the bare minimum – performance is not going to be too hot at that level.

It is a **welcome step forward**, with new features that make it easier to use, more reliable and a better entertainment platform



Network Neighbourhood has given way to My Network Places from where you can fire up the new Home Networking Wizard. This makes configuring a simple network about as easy as it could get...

OUR EARLY VERDICT

So what do we think of it so far?

Sexy new look, plenty to look forward to but it's the same old boiler inside

Windows Mill is shaping up to be more interesting than it appeared in Beta 2. Many people would be seduced into an early upgrade if the developments in media handling and home networking could fulfil their promise immediately.

The problem is that most of these goodies won't be immediately compelling to UK users. The Internet-based media enhancements only come into their own with cheap broadband access. Furthermore, you'll be able to download and retro-fit IE5.5 and Media Player 7. Hardware for appliance control and other home networking goodies is still in the works, even though

operating system support is emerging.

Seven pages hasn't been enough to explore every single change since Windows 98 – there are lots of detail improvements such as built-in support for Zip files which contribute to making Windows Mill a better operating system. Nevertheless, improved ease of use and maintainability are the immediate return on your investment.

These are welcome, but potential upgraders already experienced with Windows will need a tempting price tag if they're to buy into the last of the Win9x line.

A collection of Internet games is included. They link to MSN servers which find you someone to have a scrap with.

