

# WIN EVITABLE

Most CIOs aren't on the Windows 7 upgrade path just yet. Time to start planning.

By J. Nicholas Hoover



**N**o one ever got fired for not buying Windows Vista.

Let's face it: CIOs didn't have to make that tough a call on the last big PC operating system upgrade. With three-fourths of companies skipping Vista and sticking with XP, according to our latest research, it became clear soon after the Vista launch that the safe bet was for companies to avoid the OS, with its application compatibility problems and heavyweight hardware requirements, and wait for the next version.

Now it's decision time.

Windows 7 is here for businesses (the consumer release is scheduled for Oct. 22) and holds tantalizing improvements in terms of security, employee productivity, and bandwidth management. Think about it. Are you really playing it "safe" to stick with stable and trusted friend XP again, despite the fact that it was first released eight years ago? Consider that this safe haven is an operating

system from another era, particularly in terms of security, and is losing Microsoft support. Still, just 16% of companies plan to implement Windows 7 within a year, our *InformationWeek Analytics* survey of 1,414 business technology pros finds, while just over a third have no plans.

The good news is that Windows 7 is looking like a solid operating system—nine of 10 companies that have tested it rate it as at least satisfactory, and more than a third consider it excellent. Vista, in comparison, even today gets a poor rating from 43% of survey respondents. "The pervasive view out there is that 7 is probably better than Vista, and I'm buying it," says Jim Green, CIO of Los Angeles County Public Health, which has about 5,000 PCs. "We're not applying the old, standard 'wait till SP1' approach. The strategy is to begin upgrading as soon as we can."

Green's in the middle of a PC refresh now and has been moving new PCs to Vista, but his employees have the

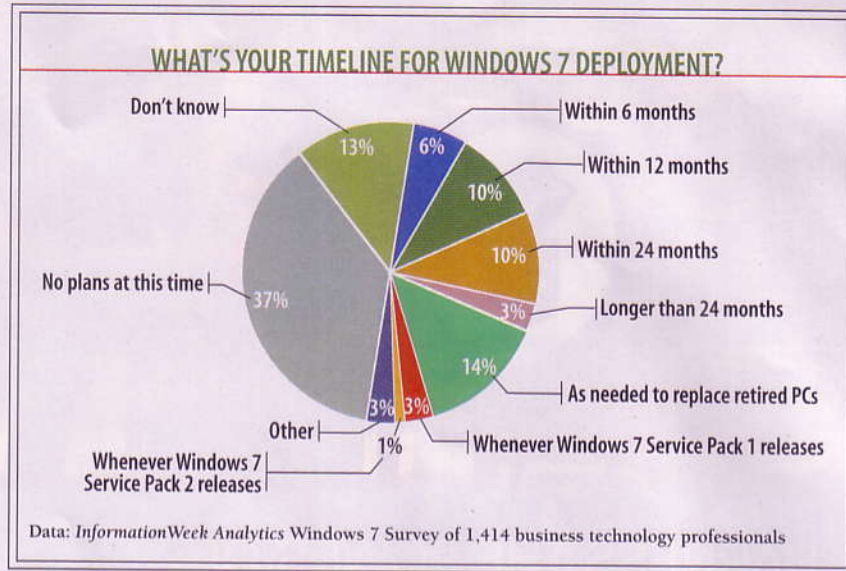
most up-to-date technology at home and want it at work, he says. He sees significant usability improvements in Windows 7, to which he'll upgrade many of the agency's PCs.

At ETS-Lindgren, which makes energy measurement and management products, the reasoning is concrete cost savings. Global IT architect Jeff Border says 70% of the company's 600 existing PCs can run Windows 7 without the major hardware upgrades Vista requires. So he expects he can slow new PC purchases while still upgrading older machines to Windows 7. Plus, he cut licensing costs by negotiating to become an early adopter.

For food giant Del Monte, the overall picture of an operating system that's easier to use is the productivity payoff, even if it can't pin that down to a hard ROI. "If you have a computer that you're using 40 hours a week, and you're traveling with it, and it's easy to use, easy to start up and shut down, easy to find things, and you don't have to become your own little IT people to diagnose your own problems, that's an increase in productivity," says Jonathan Wynn, Del Monte's manager of advanced technology and collaborative services.

Wynn also believes that giving employees the latest Microsoft software helps employee retention. Yet compatibility problems scared Del Monte away from Vista, and its 2,900 PCs almost all run Windows XP SP3. Now the company hopes to start migrating to Win 7 within a month.

While Win 7 tempts, there's no great



dissatisfaction driving people off Windows XP, which runs on about eight of every 10 business PCs. Taken together—positive reviews of Windows 7, XP's ongoing popularity, and Vista's ongoing flop—just about half of all companies have firm plans for a Windows 7 deployment, ranging from the next six months to more than two years.

**The XP Factor**

Microsoft is giving mixed messages about the death of XP. Mainstream support for the OS ended in April, meaning Microsoft will offer security updates but no free tech or warranty support, with hot fixes for Software Assurance customers. Extended support will end in 2014. However, Microsoft, bowing to market pressure, agreed to let customers downgrade to Windows XP until April 2011. (Companies can't buy XP anymore, so to stay on it they buy Vista and downgrade to XP.)

In fact, the biggest factor driving companies to upgrade is the end of XP support, which doesn't sit well with many CIOs. "I really don't like the extremely costly upgrade cycle Microsoft kind of forces on you," says Jay Wallis, CIO of commercial roofing company Empire Roofing, who has no firm plans for Windows 7. "Right now, for us at least, XP seems to be a very stable platform, so rocking the boat is something we have to take very seriously. At least through the Vista part of history we've gone through now, I'm a little distrustful of Microsoft." In fact, Wallis considers XP to be so stable that he's not very worried about losing the extra support from Microsoft.

That's a sentiment we hear echoed in many of our executive interviews. The University of Massachusetts Memorial Hospital also is sticking with XP. "There's a point when we will move out of XP because it will simply run out of support," says CIO George Benckle, but for now, he'll rely on baseline support.

Benckle's decision isn't for lack of research. His team is running Windows 7 in its labs, but none of the new operating system's features stand out enough to demand a change. "Is there anything Windows XP can't do?" he says. "I just can't make those fea-

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ture arguments to save money with Windows 7."

Plenty of people agree. The lack of a business driver for upgrading, and the lack of a solid ROI case, are among the top five barriers to Windows 7 adoption, according to our survey. But there are actually plenty of things Windows 7 can do that XP can't.

Improved security is a major driver behind the decision to upgrade, right behind the end of Windows XP support. XP lacks support for Network Access Protection, which came with Vista and continues in Win 7. That provides the ability to control a computer's access to a corporate network based on its security settings. Vista also brought in BitLocker hard-drive encryption and User Account Control security prompts, while Windows 7 adds BitLocker To Go, which encrypts USB keys. BitLocker setup also has been simplified and User Account Control made less intrusive.

Windows 7 also gives IT more control over the applications users can run, thanks to AppLocker. AppLocker lets admins create a whitelist of apps that can be installed, plus room for exceptions based on hashes, vendor or file name, file version, and product name. It can manage executables, Windows installer files, and DLLs, so that employees don't install or use incompatible, dangerous, or unwanted software or files.

Windows XP has none of those features and requires additional software or hardware purchases to add them. "Windows XP came out in 2001. Data compliance, leakage, all those things have changed since then, and that's what's keeping people up right now," says Jason Leznak, a group product manager for Windows.

### Win 7 Easier On The Hardware

One big rap against Vista was the beefy hardware requirements—including 1 GB of recommended RAM—that made it impractical to run on

older PCs. Microsoft did a number of things under the hood in Windows 7 to improve the use of RAM and multiprocessing. While Microsoft recommends the same hardware for Windows 7 as for Vista, several early adopters plan, based on their testing, to run the new OS on PCs with as little as 512 MB of RAM.

Pacific Northwest National Laboratory is one of those. Having skipped Vista, it plans to be "very aggressive" in rolling out Windows 7, says CIO Jerry Johnson. He's most interested in Windows 7's security features, which fit with the focus the Department of Energy—of which Pacific Northwest Lab is a part—is putting on cybersecurity. But his move will be hastened by the fact that Windows 7 can run on those smaller-RAM PCs.

At ETS-Lindgren, where global IT architect Border estimates that Windows 7 can run on 70% of the company's PCs, the company hopes to have Windows 7 on as many as half of its PCs by April, while allowing the company to buy fewer new PCs. "There are a lot of assets we have that we could actually keep and renew the warranty on rather than replace," he says. "I'm telling my finance people this is an option we have that we didn't have before." Border also recently renegotiated his enterprise licensing agreement with Microsoft, slashing his costs by adopting early.

Microsoft also is promising that new tools in Windows 7 will cut help desk calls. For example, employees can use a feature to record an error and send the video to the help desk. New troubleshooting features let help desks set up automatic troubleshooting scripts for common problems.

However, even companies that covet Windows 7 features will face a big barrier given tight IT budgets. Garry Robinson, IT manager for KSLA News 12 in Shreveport, La., has been testing Windows 7 for six months and likes the new security options, especially

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AppLocker. But the station recently put PC upgrades and new operating system licenses on hold. "If things get better in 2010, we could start replacing existing machines," he says.

### Microsoft Learns Its Lessons

Microsoft CEO Steve Ballmer struck a defiant tone when speaking to financial analysts this summer about the upcoming Windows 7 release. "I think many of you think we have problems we don't have in the Windows business," Ballmer said.

Still, Microsoft does seem to have learned the hard lessons of Vista. For example, Microsoft early on promised Vista would have a whole new file system, which it then didn't deliver. With Windows 7, the company kept mum on features until it was sure; there was no mid-development overhaul this time. To avoid the reputation Vista earned for incompatible software and

hardware, Microsoft released new or improved compatibility testing tools for Win 7 to software vendors, system manufacturers, and even companies looking to upgrade.

In terms of customer complaints about Vista, "there was a lot to go around," acknowledges Jon DeVaun, Microsoft's senior VP of Windows core OS. "The biggest part of that was that we had to work differently. We had to be a more reliable partner, and we had to deliver higher quality."

Microsoft also is offering a number of new or upgraded free tools to help companies work through their deployment cycle, including an asset management tool, the application compatibility tool, and a deployment tool to help with data migration from XP machines.

That's one source of Win 7 complaints—companies can't upgrade directly from XP to Win 7; it requires a

full install. To keep all the programs and settings in a move from XP to Windows 7, large companies can use Microsoft's User State Migration Tool or its System Center Configuration Manager. Smaller customers will need to back up individual PC data elsewhere and use the Windows Easy Transfer tool. Microsoft also advises companies upgrading from XP to Windows 7 to do compatibility testing with the Application Compatibility Toolkit.

Having skipped Vista, Del Monte this time is working closely with Microsoft to ensure application compatibility, using Microsoft tools to determine if software is attempting to write data to directories or make calls to files that no longer exist in Windows 7. With help from a Microsoft engineer, it developed what it calls "shims" to force otherwise incompatible programs to run on Win7. The

## INFORMATIONWEEK ANALYTICS

### Win 7's Server Ties—Blessing Or Curse?

**W**indows 7 is getting most of the fanfare, but Windows Server 2008 R2 also hit the enterprise last month. Since many of Win 7's top features require running R2, you'll need to factor the new server operating system into your desktop plan. That could create problems for IT teams.

In our recent *InformationWeek Analytics Windows 7* survey, two-thirds of the 669 respondents with Win 7 deployment plans cite the operating system's new features as the primary driver or a contributing factor to migrating. Yet key Win 7 features, including DirectAccess, BranchCache, improved search, power management, and better offline folder access, depend on R2 server functionality. That was by design, as Microsoft consolidated the two core development teams, desktop and server, as one application group.

"We really got some engineering efficiencies from joint development," says Ward Ralston, Microsoft's group product manager for Windows Server. "We were able to take some fairly complex design enhancements and focus them around the single release schedule."

However, while joint development allows for a tighter feature set, the idea breaks apart once you leave the lab. The term

"better together" may work well for marketing, but in the real world, companies deploy server and desktop operating systems on different schedules and with different priorities. Requiring IT to fully convert its network in order to take advantage of functionality is counterintuitive.

Consider BranchCache. It's a great feature that dramatically improves network file access throughout the entire network, not just in remote offices. Problem is, it works only with R2 and Win 7 clients, with no functionality at all for XP or Vista. The result is a chicken-and-egg situation: A company's server team is likely to delay a major upgrade until it benefits the majority of end users. Meanwhile, desktop groups will see not having access to these features as one more reason to put off Win 7 deployment. The answer for CIOs looking to break the logjam may be to tempt server teams with server-centric features, such as the Active Directory recycle bin. Once R2 is in use, the Windows 7 client is markedly more attractive.

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company also has worked to create a formal XP-to-7 upgrade process using System Center Configuration Manager that takes about 30 minutes for a full upgrade, leaving users' files and documents as they were.

Still, with Vista's application compatibility problems still fresh in mind, and the huge XP installed base, the Windows 7 feature that companies plan to use above all others is one that lets them hedge their bets: XP Mode.

XP Mode, a virtualized instance of XP that runs alongside Windows 7, lets companies run applications that break under Vista or Windows 7. The end user can load those applications like any other, from an icon on the desktop or via the start menu.

KSLA's Robinson sees XP Mode as a good option for running applications that have trouble printing from Internet Explorer 8, which comes bundled with Windows 7. "From what I've been able to do in my testing, I have not found anything that wouldn't be able to work in the XP virtual machine," he says.

Yet some may find XP Mode less useful than they'd hoped. First, it requires that a full version of XP be installed on any PC that uses it. Second, Microsoft is aiming XP Mode mostly at consumers and small businesses and hasn't included management tools; XP Mode has to be installed and managed at each individual PC. Third, it requires an extra 1 GB of RAM beyond initial Win-

dows 7 system requirements.

For large deployments, companies will have to be Software Assurance customers and shell out extra money per client to access the Microsoft Desktop Optimization Pack and Microsoft Enterprise Desktop Virtualization, or MED-V, which includes management features. Another possibility, also included in MDOP, is Microsoft's App-V application virtualization technology.

### The App Compatibility Test

Application compatibility looks much further along than at the same point in Vista's release, but it remains a major concern: It's the second biggest barrier to upgrading, according to our survey. After all, Windows 7 was built

## IN PRACTICE

### 32-Bit Gear In A 64-Bit World

**T**he whole Windows line—XP, Vista, Win7, and server editions—has been shipping in 32- and 64-bit editions, and most new hardware comes with 32- and 64-bit device drivers.

But what if you're migrating a printer, scanner, or Webcam from an age before 64 bit? That can be a problem. While 32-bit apps generally run fine on 64-bit Windows, 32-bit device drivers aren't so lucky. There's no mechanism in Windows to take a 32-bit device driver, wrap it in an emulation layer, and use it in Win64. So here are some options for keeping that hardware working and out of the landfill.

Windows 7's XP Mode is one option, since it creates native 32-bit support through a copy of XP in a virtual machine. But XP Mode doesn't allow direct interface to the device. You need an application. For a scanner, you use a program to acquire an image from the scanner; for a printer, a program to perform a print action.

In general, 32-bit printers involve either a very quick fix or a very convoluted process. The quick fix: If the printer understands generic PostScript or Hewlett-Packard's PCL, you can likely install a generic 64-bit driver. HP offers one, as does VueScan. The bad news is that advanced features such as cloning will be lost.

The worst case is a printer that uses a proprietary wire protocol, not PostScript or PCL. Ink-jet printers are infamous for this, as well as some laser printers, like my HP LaserJet 1000.

Enter the convoluted workarounds: I set up a print-to-PDF driver on my 64-bit machines and had the results printed by default into a shared directory that the 32-bit machine would poll periodically for new documents. Or, print to .PDF on the local machine, and then invoke an XP Mode instance of Acrobat Reader to print.

Scanners are the other hardware class hard hit by the 32/64-bit changeover. Like printers, they tend to remain in use a long time. The best fix comes from programmer and former NASA/Jet Propulsion Lab staffer Ed Hamrick, who wrote VueScan as a generic device driver to work with a staggering variety of scanners. It has limitations, but for \$40, it's cheaper than a new scanner.

Another solution is the virtualization approach described above for printers. A third possibility is to use a Linux box or a virtual machine with the scanner plugged into it, and access that remotely. Most any scanner you have should work as is.

When it comes to 32- vs. 64-bit systems, we're in a transition phase, something like the 16- to 32-bit transition that took place when Windows 95 gradually eclipsed Windows 3.1. Until all that legacy hardware is out of service—which may not be for a good long time to come—the 32/64-bit divide will need to be spanned with ever-increasing creativity.

—Serdar Yegulalp ([syegulalp@techweb.com](mailto:syegulalp@techweb.com))

Longer version at [informationweek.com/1241/windows7.htm](http://informationweek.com/1241/windows7.htm)

on the same code base as Vista, so if an application still doesn't work on Vista today, it more than likely won't work on Windows 7.

And there are some kinks still to be worked out. Symantec, for example, is working to fix an endpoint security software incompatibility that creates a prompt showing a Windows 7 PC isn't secured when in fact it is. Del Monte is one of several companies that cited this specific problem as holding back plans to move to Vista right away.

Older industry-specific and financial apps often are a problem, as companies need to weigh whether it's worth rewriting the app to be compatible with a new operating system. "In Vista, your only choice was to fix the app," says Tony Scott, CIO of Microsoft, which already has rolled out Windows 7 to more than 100,000 employees and contractors. "However, today there's a lot of different virtualization technologies you can use to mitigate against those issues, so it's not a binary go, no-go kind of thing."

### Features Employees Will Notice

Two of the most hotly anticipated features of Windows 7 are DirectAccess and BranchCache, each of which requires the new Windows Server 2008 R2 to be installed as well (see story, p. 30).

DirectAccess lets end users access corporate networks remotely without having to sign on with virtual private network software. As soon as a Windows 7 PC configured with DirectAccess boots up and finds an Internet connection, it authenticates via an encrypted tunnel to a DirectAccess server. The related VPN Reconnect feature automatically reconnects users to their VPN if a connection is lost.

To the user, the DirectAccess benefit is rather simple: no more annoying VPN to log into. IT departments could see the savings from not making further investments in VPN infrastructure, though that might be long term



Johnson: "Very aggressive" Win 7 plan

as they continue to support VPNs until all employees are on DirectAccess.

ETS-Lindgren plans to deploy Windows 7 and Windows Server 2008 R2 hand-in-hand and is considering DirectAccess for its hard cost savings. In order to support Windows 7, it would need to upgrade its Cisco VPN software, increasing that license cost. But if DirectAccess passes its performance tests, it won't need the Cisco software and thus could eliminate that recurring cost, while also simplifying connectivity for its global workforce, Border says.

BranchCache caches content either on a dedicated caching server in a remote office, or by using peer-to-peer caching on PCs in that office. Accessing the cached content doesn't eat up precious WAN capacity. However, BranchCache doesn't do some of the more advanced protocol tweaking of more expensive, standalone WAN optimization appliances.

ETS-Lindgren is just starting a pilot test of BranchCache, but Border says it can defer some additional spending on WAN optimization. "We have some pretty tough users, 12 permanent locations around the world, and we've spent a lot of money on WANs and WAN optimization technology," he says. In a Microsoft case study, Taiwanese IT services company Systex estimated it will save 20%, or \$100,000, on its annual bandwidth costs by using

BranchCache. (Your mileage may vary.)

The new server operating system will be a tough sell alongside a substantial desktop investment. To make it, the OS also promises more sophisticated server virtualization, particularly Live Migration, which allows the movement of running virtual machines among physical servers, a feature that's revered by users of VMware, the No. 1 virtualization vendor. Gartner recently predicted that Microsoft's virtualization market share would triple by 2012, as it continues to increase its functionality. Other server additions are a management interface for Active Directory that lets admins restore accidentally deleted identities, an enhancement to let virtualized applications appear in a PC's start menu, support for up to 256 logical processors, and the ability to automatically classify and set policies for files based on their type.

In this economy, it would be shocking to see a stampede to Windows 7 unless it promised hard cash savings, which it doesn't. Still, it's surprising to see more than a third of companies with no plans for Win 7. More than half have done some testing, at least.

For those laying plans, the driving forces are the end of XP support and improved security, and after that some impressive new features. Some, like Del Monte, trust that the upgrade will deliver on hard-to-measure productivity improvements and employee retention.

In the end, Microsoft has come up with a solid operating system, yet it has a lot of work to do to bring businesses around to upgrading. They skipped Vista, stayed on XP, and don't feel any worse for having done so. Their budgets don't have room for nice-to-haves. So, yes, Microsoft makes a more compelling case for upgrading to Windows 7 than it did for Vista. But it needs to.

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