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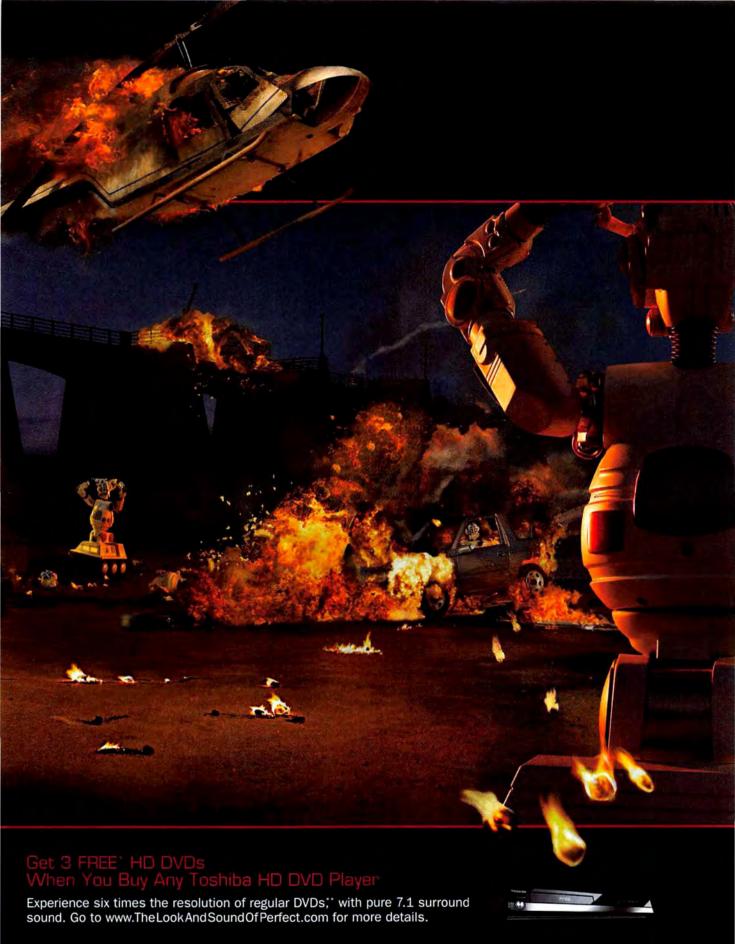
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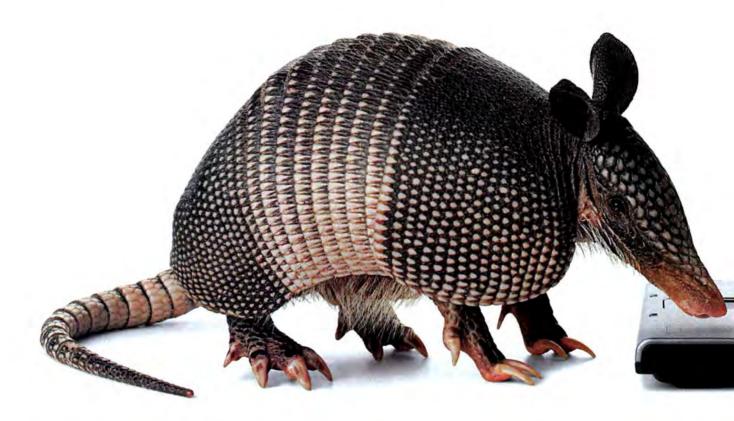
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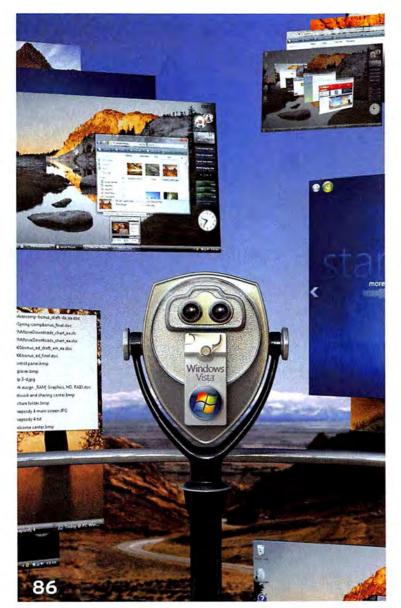












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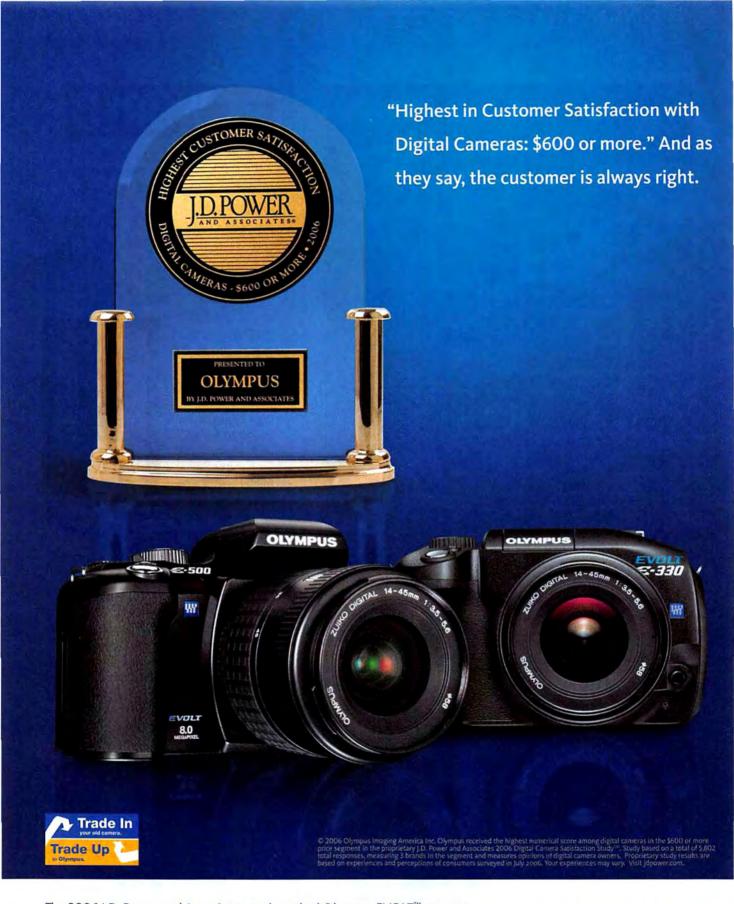
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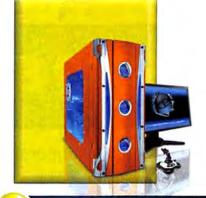
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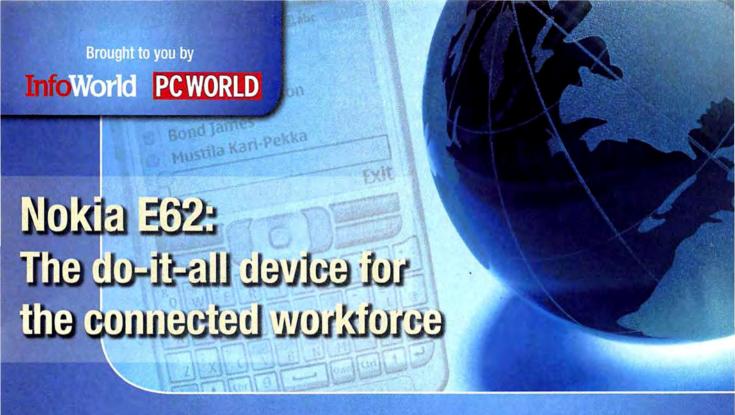
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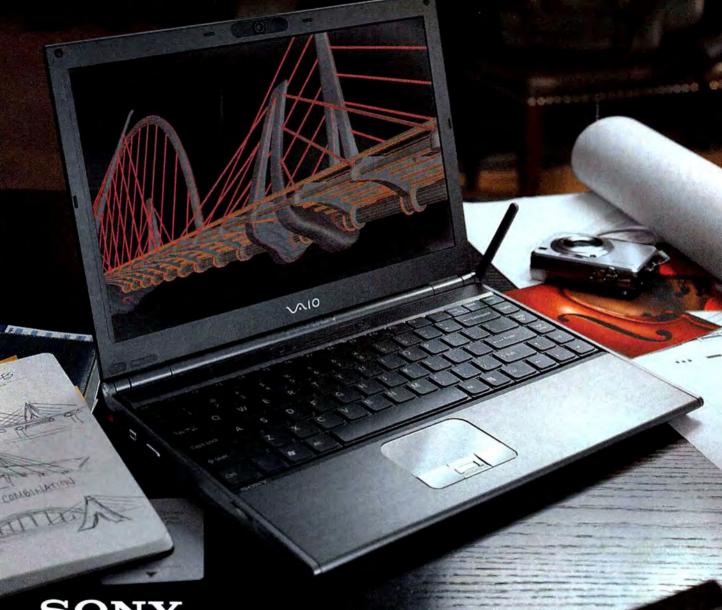
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What Next After Windows Vista?

I don't have a clue what Microsoft's long-term plans are. But I've got a little list...

IT ALL STARTS with vague rumblings of a cryptically code-named operating system upgrade. Next come multiple beta versions, accompanied by repeated delays, mysterious disappearing features, and other indications of altered plans. Eventually, there's a real, boxed product that folks can buy.

I speak, of course, of the amazingly predictable process that results in each new edition of Windows. Also predictable: PC World will do a cover story on the final version. Turn to page 86, and you'll find our Windows Vista extravaganza, including both a review by Preston Gralla (an old Windows hand who's new to PCW) and an upgrade guide by Scott Spanbauer (who has covered Windows for us since it was a mere DOS add-on).

Me, I've been running Vista in various rough drafts for over a year. So my mind is already racing ahead to the next cryptically code-named

Windows upgrade-formerly dubbed "Blackcomb," now known as "Vienna." There's no telling when it will ship. But when it does, I'm hoping it'll have a number of things that Vista-at least in its initial form-doesn't have. Such as...

Real interface innovation: True, Vista's look, feel, and functionality are advances from Windows XP. But they don't introduce much in the way of big new ideasor for that matter, ones that Apple's Mac OS X hasn't sported for a version or two.

Office 2007, which is arriving at the same time as Vista, proves that the behemoth of Redmond can retool an interface to be both radically different and meaningfully better. Rumor has it that Vienna may have a completely new look; please, Microsoft, get people who were responsible for the new Office involved.

Consistent consistency: Sometimes Vista helpfully gives different tools similar interfaces-Windows Photo Gallery and Windows Media Player are a matched pair. Overall, though, it's the software equivalent of a huge country made up of municipalities with varying rules and regulations about matters like menus and help systems. OS X shows far more

discipline. And so should Vienna.

Seamless Web hooks: So far, Microsoft's Windows Live offerings have little in common with the OS except a name. Why can't Windows make using online storage at least as simple as working with a local disk? Shouldn't you be able to sync multiple copies of the OS between PCs across the Net? Is there any good reason why Microsoft couldn't provide browser-based access to at least some of Windows' features? There are glimmers of such concepts in certain features of Vista, but real breakthroughs are yet to come.

Fewer, better applets: Given Windows' security record, the addition

of Windows Defender isn't just logical, it's long overdue. But does Windows need a photo organizer or movie editor? Nothing in Photo Gallery or Movie Maker convinces me it does, and Microsoft has a history of adding stuff, then letting it fester (Exhibit A: Windows Paint). Sorry for bringing up Apple again, but its approach makes sense: iLife's tools are parts of a \$79 suite, not bundled gimmes; but they are powerful and frequently updated.

How psyched are you about Windows Vista-and what's on your wish list for future versions of the operating system? Visit PCWorld.com's forums (forums.pcworld. com), and join the conversation.

Harry McCracken, editor in chief of PC World, blogs at blogs.pcworld.com/techlog. Contact him at harry_mccracken@pcworld.com.

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EDITED BY EDWARD N. ALBRO

28 MICROSOFT'S ZUNE AUDIO

20 WEB OFFICE SUITES GET MORE SOPHISTICATED 26 GAME ON: PLAYSTATION 3 VS. NINTENDO'S WII

- PLAYER ADDS SHARING
- 30 CRACKDOWN WON'T STOP ONLINE GAMBLING
- 32 PLUGGED IN: WEB PORTALS MAKE A COMEBACK

Your Online Office

INTERNET PRODUCTIVITY SUITES INNOVATE WITH ONLINE SHARING AND STORAGE, BUT DON'T YET CHALLENGE MICROSOFT FOR DOCUMENT-CREATION FEATURES. BY MICHAEL S. LASKY

A HOST OF new free or lowcost online competitors are trying to nibble away at Microsoft's \$11.8 billion Office pie by pulling together productivity suites with online document storage and innovative sharing and collaboration features. The new options can prove useful for group efforts, and the price is certainly right. But none of these packages have the feature set to truly challenge Office-for now.

Google recently launched its free Google Docs & Spreadsheets service (docs.google. com), creating a new interface for its previously separate word processing and spreadsheet applications. ThinkFree (thinkfree.com) and Zoho (zoho.com), in their more extensive suites, also offer PowerPoint-like presentation programs. Like Google, Think-



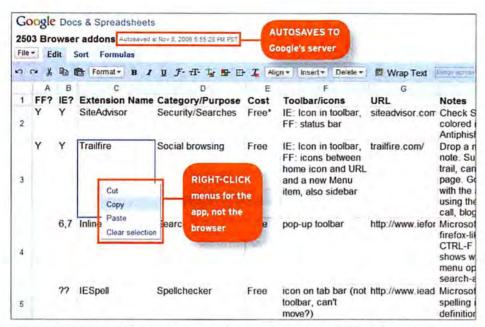
Free and Zoho are free for individual users and allow you to save documents in a variety of formats, including HTML. A fourth contender, gOffice (goffice.com), charges 99 cents per month for its

limited word processing and spreadsheet programs, with a presentation app to come.

Document-creation applications have been available online for some time. But by bringing such tools together as suites and offering downloadable business packages, these companies are obviously making a distinct effort to entice users away from Microsoft's ubiquitous software.

BEYOND OFFICE

THE SITES CLEARLY have something Microsoft currently does not: the ability to create easily shareable documents, spreadsheets, and calendars on any Internetconnected PC, regardless of OS-and without your having to install expensive software. After creating or editing your doc or worksheet in Google's offering, for example, you can use one-click publishing to put it on public display at a unique Google-created URL. Or you can collaborate by sending an e-mail to workmates containing a link to edit



GOOGLE'S DOCUMENT AND spreadsheet applications are now together online in a mini-suite.

a particular document. Both ThinkFree and Zoho offer similar sharing options.

As suites, these services also offer useful central document repositories you can

access from any system with an Internet connection. Google gives you space for 1000 documents and 100 spreadsheets. while ThinkFree and Zoho both offer 1GB

of space free, and add more for a monthly charge, gOffice stands apart by saving only to your hard drive, with no plans for online storage.

All the suites largely mimic Office's interface with familiar menus and toolbars, and create a desktop-app feel with Ajax (asynchronous JavaScript and XML). Largely credited as the magic behind the more interactive "Web 2.0" approach, the popular Ajax style of Web programming means that users don't have to wait for a page refresh after making changes, and it can also enable right-click menus specific to the online application instead of to the Web browser. Although ThinkFree uses Ajax for quick editing, it loads a slower and more resourcehungry Java Virtual Machine

'The sharing that the Internet offers is an awesome opportunity.'

> for its more feature-rich "power editing" mode.

> All the services permit quick rollbacks to previous versions of files, and Zoho can show the differences between versions without fully reverting. All can—with varying degrees of success-upload and import Office files, as well, though formatting and text placement often don't line up correctly for imported documents (particularly for spreadsheets and document charts).

> Given Office's overwhelming dominance, Microsoft may not seem to have much to worry about. But the folks

in Redmond are definitely taking notice: In its August 10-K filing with the Securities and Exchange Commission, Microsoft specifically listed ThinkFree as an Office rival.

> "The sharing that the Internet offers is an awesome opportunity to do things we aren't doing well today," notes Chris Capossela, vice president for Microsoft's

Business Division Product Management Group. Microsoft says that it has plans to create an online version of its entry-level Works package, but the company's opportunistically named Office Live Web site doesn't actually offer any Office applications.

NO HUGE THREAT YET

IN SOME WAYS these suites begin to fulfill the promise of the Web, but Office, highly polished over the years, still has a clear lead in overall features and suite integration. In the online suites, you won't find the tight integration

IN BRIEF

Product Pipeline

SIRIUS TO GO: Sirius Satellite Radio has introduced the Stiletto 100 (find.pcworld. com/55746), its first portable satellite-radio receiver. Measuring 4.7 by 2.0 by 1.0 inches with 2GB of storage, the Stiletto 100 can stream online content via built-in Wi-Fi and work as an MP3/ WMA player, with room for up to 100 hours of recorded radio programming and up to 10 hours of individual songs. Options for the \$350 device include car and home stereo adapter kits, for \$70 each.



PLACE SHIFTING: Pinnacle Systems has entered the video place-shifting ring with Pinnacle PCTV To Go (\$250; find.pcworld.com/55759), a device that allows you to control and watch your television, DVR, or DVD player from any Internet-connected PC. PCTV To Go links to TV components with standard video cables and to your LAN via 802.11g Wi-Fi, thereby eliminating the need to run ethernet cables between your router and home entertainment center (a wired LAN hookup is optional).

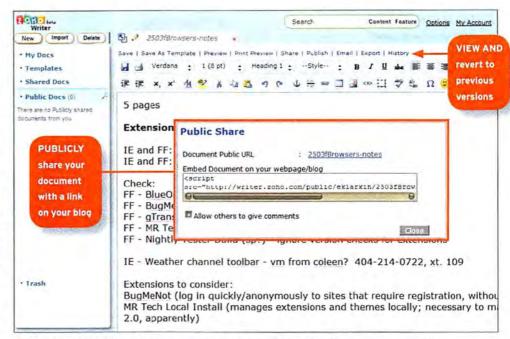
and much of the advanced functionality present in Microsoft's current collection, let alone the upcoming Office 2007. In particular, the presentation apps don't come close to the feature set you'll find in PowerPoint.

Also, much of the "suite" aspect consists only of your using the same log-in and (save for Zoho) storing all your documents in one place, without a lot in the way of other tie-ins between the apps. For example, if you cut and paste part of an Excel spreadsheet into a Word document, you'll get a converted Word table that preserves the rows, columns, and shading. The online options, in contrast, will paste the content in roughly the same layout but won't put it in a table.

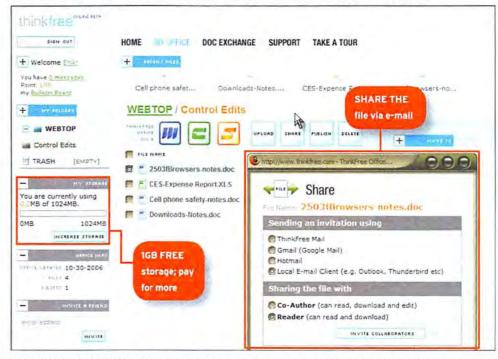
Though the online apps are currently lacking in comparison with Office, they're developing fast. AjaxLaunch.com has its own suite in the works, with a Firefox-only word processor available now and other apps to come. And one advantage of a fully online app is that you don't need to download (or pay for) updates to obtain newly added features or fixes-next time you log in, they're already there.

FEE-BASED OPTIONS

OF COURSE, TO stay around long enough to continue to develop, these Office challengers need money. Google has deep pockets, but the other vendors must supplement their free (or near-free) consumer offerings. Think-Free displays sponsored text links while you're editing documents; it also offers a \$50 business version, touted as fully Office-compatible, that



ZOHO'S SMOOTH INTERFACE makes the most of Ajax programming to create a desktop-app feel.



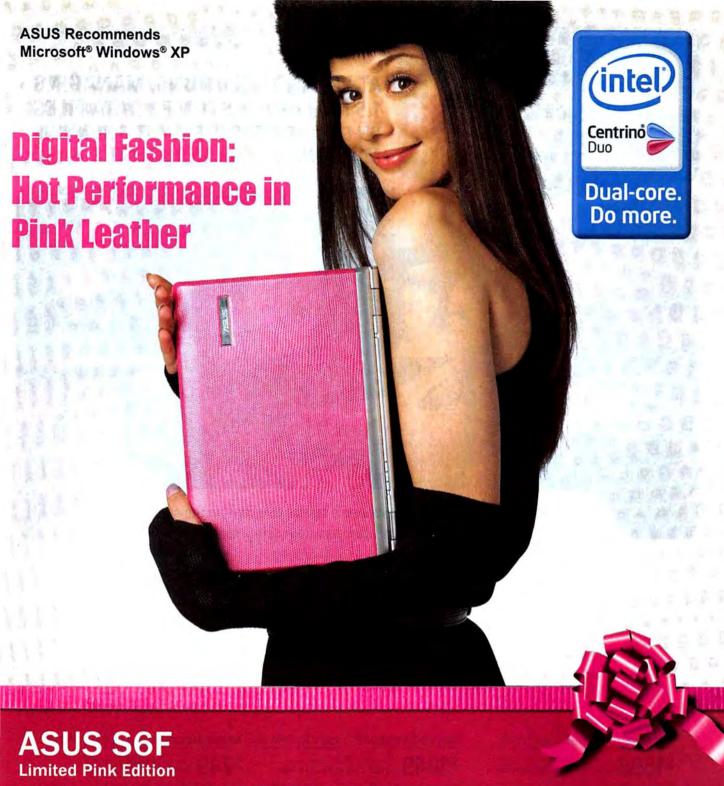
THINKFREE'S 'MY OFFICE' allows at-a-glance document management, with nested-folder online storage.

allows companies to buy their own implementation and keep their documents on their own network. The Los Angeles Public Library recently purchased the package.

Zoho also offers fee-based products, including a "Virtual Office" suite with e-mail, documents, and calendaring that a company can run on its own servers, along with other productivity tools. The Virtual Office on-premise version is free for up to ten users.

The online suites that do stick around will no doubt continue to evolve quickly.

However, Microsoft is not standing still, and Office 2007 will have its own new collaborative online tools for both enterprise and consumer users. Free is a big draw, but for serious work Microsoft needn't feel nervous about losing Office users just yet.



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GAME CONSOLES

First Look: Sony's PS3 vs. Nintendo's Wii

SONY PACKS MORE FEATURES INTO ITS PS3, BUT THE WII MAY HAVE AN EDGE ON GAME PLAY.

NEXT-GENERATION game consoles from Nintendo and Sony are finally ready for play, and they bring significant advances to the gaming world. The pricier Sony PlayStation 3 packs a lot into a console, including high-definition graphics, a hard disk, and a Blu-ray Disc drive that delivers great image quality. But with its innovative controller. Nintendo's Wii (pronounced "we") may provide the better gaming experience.

We tested the \$599 version of the PS3, which features a 60GB drive, 802.11b/g wireless networking, and Memory Stick, SD Card, and Compact-Flash media slots. A \$499 version lacks wireless and has a 20GB drive. Both PS3 models let you copy photos, MPEG-4 videos, and music files to the hard disk, and both offer gigabit ethernet and built-in Bluetooth. The Wii costs \$250 and builds in Wi-Fi (but not ethernet). Like the PS3, it has an SD Card slot and can display photos, but its standard-def DVD drive can't play movies (Nintendo and Sonic Solutions are working on that weakness).

READY, SET, PLAY

BOTH CONSOLES WERE easy to set up. However, neither comes with the cables that you need in order to experience their full graphics capabilities: Each bundles only composite video cables, so you must purchase component cables (for the Wii's 480p resolution) or HDMI cables (for the PS3's



1080p resolution; you need an HDCP-compliant HDTV, too).

Getting the higher resolution is worth the trouble, particularly with the PS3, which provides stunning visuals. I was especially impressed with NBA 07, which ran at 1080p resolution and played at an incredibly smooth 60 frames per second. The PS3's vastly enhanced physics and environmental (including lighting) effects add to the visual treat. Sony's updated wireless controller is no slouch either. Though it doesn't offer force feedback, it's lighter than the PS2's controller and improves on the older model's L2 and R2 triggers. The PS3's controller can sense motion along six axes, too, so you can turn and tilt it to steer during driving or flying games, for example.

The Wii's graphics seem to be just as good as-if not a shade better than-the PS2's. but they can't equal those of either the PS3 or the Xbox 360, which recently upgraded its graphics output to 1080p HD (and which also offers a \$200 HD DVD drive option). Still, Nintendo's Excite Truck launch title conveyed a vivid sense of speed, and the Wii Remote controller raises the bar for game play. It features motionsensing and force-feedback technology to further immerse you in the game. When throwing a pass in Madden 07, for instance, you mime the movements of a quarterback. The Nunchuk, a joystick-style controller, connects to the remote for further game control. In

practice, it's addictive, and everyone wants to have a go. Nevertheless, you may want to pick up a \$20 "classic" controller for fast-paced games (like hand-to-hand combats) where such movements might slow you down dangerously.

TITLES ABOUND

SONY AND NINTENDO have confirmed that the new consoles will support titles from previous-generation models. No fewer than 62 games will be available for the Wii within the first five weeks; a further 32 games, including favorites like The Legend of Zelda: Twilight Princess and Madden NFL 07, will be available by year's end. In contrast, the PS3 will have a little over 20 games available through



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ONLINE AND EXTRAS

BOTH CONSOLES ALSO allow you to browse the Net, send messages to other players during multiplayer online games, access special content, and shop at the makers' specialty gaming stores. (The online services weren't available at press time, but should be live by the time you read this.) For example, the Wii Shop Channel will let users get its Virtual Console, then download and play games from past consoles such as the Nintendo 64 and Sega Genesis. Sony's PlayStation Store will sell retro games, episodic content, and someday perhaps even full-length movies.

Though expensive for a console, the PS3 becomes a veritable bargain if you're in the market for a Blu-ray player, as dedicated Blu-ray players cost between \$900 for the Philips BDP9000 and \$1500 for the forthcoming Pioneer Elite BDP-HD1. Moreover, in our preliminary tests the PS3 produced sharper and generally better images than the Samsung Blu-ray player that we've previously tested. Add a \$25 remote (not included), and the console makes a morethan-adequate Blu-ray player.

Deciding between the two new consoles will likely come down to personal preference and perhaps to long-held allegiances. The refreshingly different and affordable Wii will have broad appeal, especially to casual gamers who may not have played on consoles in the past, but its graphics can't match the quality and detail of the PlayStation 3's.

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players within 30

Shared songs can be

feet. The catch:

played only three

times-and within

three days.

to other Zune

playlists, or photos

menus to wirelessly

-Danny Allen

PORTABLE MEDIA PLAYER

Microsoft's Zune: Not Quite an iPod Killer

LITTLE BIG SCREEN: The Zune is just slightly larger than

extra real estate makes extended use far easier on the eyes.

the latest IPod (or Creative's Zen VisionM), but its vivid. crisp 3-inch LCD has half an inch on those of its rivals. The

LIMITED FEATURES FOR WI-FI SHARING ARE OUT OF TUNE WITH SLICK DESIGN AND DISPLAY.

WHAT WILL IT take to beat Apple's iPod at its own game? Microsoft is betting that its \$250 Zune-a 30GB, Wi-Fiequipped music and video player-can go toe-to-toe with the digital music giant.

A large, bright screen, an attractive interface, and innovative wireless media sharing illustrate the Zune's potential. But Microsoft's Wi-Fi implementation is currently so limited that the potential isn't realized. Here's what we liked and disliked about the Zune.

-Eric Dahl

me «Right In The Head» Po ALBUM ART PLAYS a significant role in the Zune's highly visual interface. Thumbnails appear when you browse Right In The Head through albums, and album art takes up two-thirds of the 8) II display during normal playback.

ClickWheel, the circular main control of the Zune isn't touch-sensitive. It is, however, easy to use and extremely responsive.

UNLIKE THE IPOD'S

WIRELESS WISHES: THE Zune's wireless sharing left

us underwhelmed. Given that Microsoft built Wi-Fi into the device, we'd have liked the ability to buy tracks online or to sync the unit with our PC sans wires. No such luck.

Zune

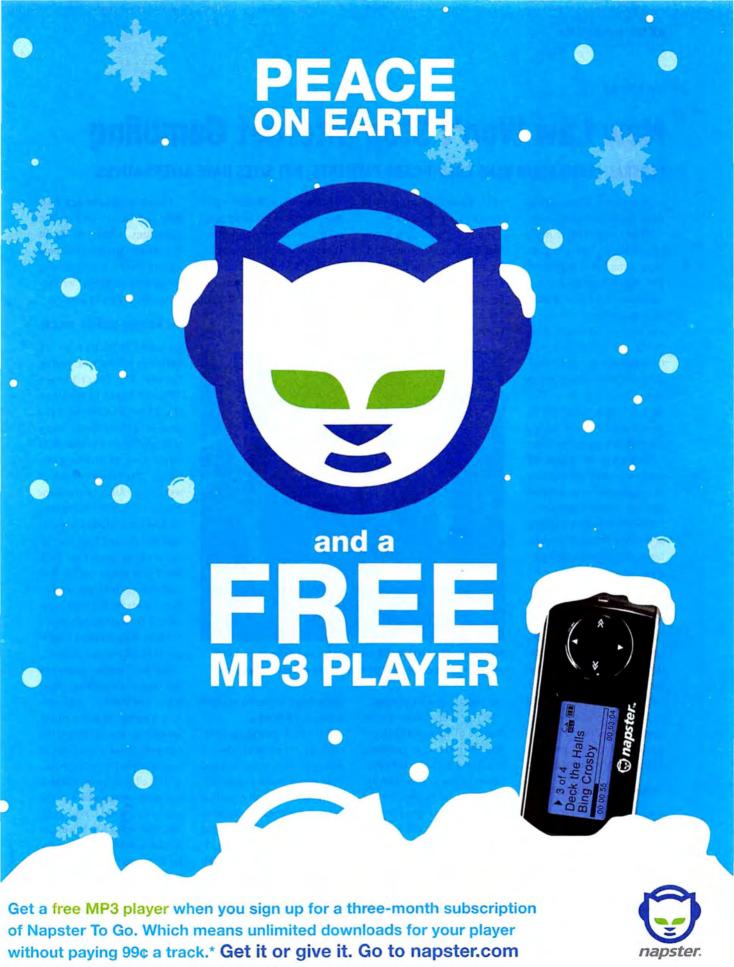
Microsoft

PCW Rating 80 Very Good

Microsoft's first portable music and video player offers a great screen but lackluster wireless connectivity.

Street: \$250

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INTERNET

New Law Won't Stop Internet Gambling

FEDERAL LEGISLATION BANS CREDIT-CARD PAYMENTS, BUT SITES HAVE ALTERNATIVES.

PLACE YOUR BETS-IUST don't pay with a credit card.

When Congress specifically criminalized Internet gambling at the end of September by outlawing credit-card payments to the services, it failed to stop aspiring card sharks and delusional Oakland Raiders fans from parting with their paychecks, experts say. Offshore sites simply set up shop where U.S. law enforcers can't reach them, and domestic gamblers are finding alternative ways to pay them.

People who bet online will not face criminal prosecution under the law because it does not ban Internet gambling; instead it requires that banks and other financial institutions block credit-card payments to gambling sites.

"If you send a check in, you'll be fine. There's no way it's going to stop," says Frank Catania, a former New Jersey gambling regulator who currently lobbies for the onlinegambling industry. The Federal Reserve is not expected to force banks to screen personal checks or other payment methods that are more difficult to track, experts say.

RAKING IN BILLIONS

U.S. RESIDENTS HAVE been placing bets over the Internet since 1995, and from the outset some members of Congress have been trying to ban the activity. Their past efforts failed due to opposition from dog tracks, state lotteries, and other interests worried that such a prohibition would hamper their operations.

Internet gambling is booming. By last summer, U.S. gamblers accounted for half of the industry's \$12 billion in revenue, and online-gambling stocks such as that of Party-Gaming were flying high on

In the wake of the law's passage, investors in London sold off PartyGaming and other Internet gambling stocks, erasing \$7 billion from the stock exchange in a matter of days. Many of those British companies said they would no longer accept wagers from

POKER PLAYERS ALLIANCE president Michael Bolcerek says Congress's Internet gambling prohibition falls to protect U.S. citizens.

the London Stock Exchange.

In July, Republicans in the House of Representatives passed an Internet gambling ban, but it encountered opposition in the Senate and appeared to be headed for yet another defeat until Senate Majority Leader Bill Frist (R-Tennessee) attached it to an unrelated port-security billa move that guaranteed passage. When the bill passed in September, Frist denounced gambling as an addiction that "frays the fabric of society."

their most lucrative market across the Atlantic.

But other gambling sites, such as the privately owned Bodog (www.bodog.com) and PokerStars (www.pokerstars. com), say they will continue to serve American customers. Their Caribbean locales put them beyond the reach of U.S. law enforcement-unlike gambling executives in Britain, who face extradition to this country under a 2004 treaty originally intended for extraditing terror suspects.

Industry pundits don't expect the ban to end online gambling. "I have no doubt the private operators will pick up the slack," says Tejinder Randhawa, an analyst for Evolution Securities in London.

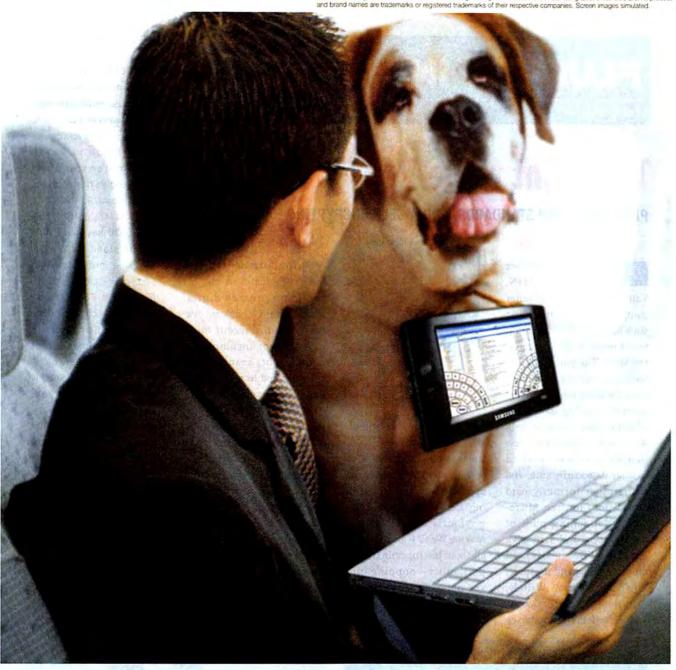
PLAYERS FIGHT BACK

CONGRESS COULD STILL decide to roll back or modify the law. The Poker Players Alliance hopes to mobilize the 23 million online card players in this country into a powerful lobby to counteract opposition to online gambling. "Prohibition doesn't work," says Alliance president Michael Bolcerek. "[Congress] should have offered legislation that places a high priority on making sure that kids don't play poker online, and address [gambling] addiction." Instead, Bolcerek says, "you'll find sites that won't abide by industry aims to safeguard the American public."

For now, online gamblers are cautiously making other plans. Lee Sullivan, of Alexandria, Virginia, says she might spend less time in front of the computer and more time at the corner bar shooting pool.

"If it all goes away, it'll be a bummer-but it won't be the end of the world," says Sullivan, who won a free trip to last August's World Series of Poker after qualifying through the PokerStars site. "Still, I don't see how the U.S. government can put the toothpaste back in the tube on this one."

-Andy Sullivan





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PLUGGED IN

The Fight to Be Your Web Home

PLUS: MORE DRM STANDARDS, AND A SELF-ENCRYPTING HARD DRIVE.

PORTAL MADNESS





how Yahoo might respond. What's going on here?

Bottom Line: Craziness, if you ask me. The whole portal approach was about persuading users to stick around longer. But the technology that's making Web 2.0 great today is all about interoperability and portability-popping into and out of sites quickly and efficiently. Bit of a disconnect there, don't you think?

FUTURE TECH

CHARGE WITHOUT WIRES

EVER GET TIRED OF carting around the charging cables for your cell phone, digital camera, iPod, and PDA every time you hit the road? A couple of companies-Splashpower and WildCharge-aim to replace those annoying cables with... nothing! Well, actually, with a mat and a small adapter for each device that lets it charge wirelessly when placed on the mat. RFID tags and other low-powered devices such as electric toothbrushes similarly use electromagnetic induction to transfer power without any wires. It's a neat concept, but Splashpower has been around for a while now and we've yet to see products for sale. Here's hoping new kid on the block WildCharge will make some real progress.

DRM EXPLOSION

The Buzz: Need another reason not to buy (or rent) compressed digital music online? Look no further than the recent miniexplosion of incompatible digital rights management schemes tied to new players. SanDisk players pushed by Best Buy use Real's new Rhapsody DNA technology. Microsoft's Zune packs proprietary DRM-a departure from the firm's own PlaysFor-Sure system (which the rest of the non-Apple market still uses). And of course, Apple continues to keep the FairPlay DRM exclusive to its iPods.

Bottom Line: Here's the real reason the CD isn't dead: If you want to keep all of your digital music portable, you have to burn lots of discs so that you can re-rip DRM-free versions of your downloaded tunes.

AUTO-ENCRYPTION

The Buzz: Encryption remains one of the safest ways to secure critical data. Unfortunately, very few people (myself included) actually use it. Seagate and Hitachi plan to change that this year with lines of notebook drives that encrypt your data for you by using built-in hardware,

HERE\NOW

SOUNDFLAVOR DJ: Innovative plug-in uses music profiles to rediscover songs in your music library. soundflavor.com

GMAIL IN 3G: Receive Gmail on your phone with Google's new app. find. pcworld.com/55742

LOGITECH ALTO: This \$100 keyboard plus laptop stand turns your portable into a desktop. find.pcworld.com/55710

UGENIE: Shopping engine checks prices on multiple items at multiple stores to find the best overall price. ugenie.com

SPOT COOL: Point this \$20 goosenecked. adjustable Antec fan at any spot in your PC's case that needs more cooling, find. pcworld.com/55711

which means there should be no performance hit. Seagate's Momentus 5400 FDE.2 drives employ a technology called DriveTrust to encrypt the entire disk without any user

> interaction beyond maintaining a password. In the second half of 2007. Hitachi has plans to release a 250GB, fulldisk-encrypting, hybrid laptop drive.

Bottom Line: Awesome idea. Now if this thing could back itself up, swap itself for a bigger drive when I fill it, and take itself down to the recycling center when I'm done with it, I'd be all set.

You can contact PC World Senior Editor Eric Dahl at eric dahl@ pcworld.com; visit find.pcworld. com/31643 to read additional Plugged In columns.



December 2006/January 2007

Ferrari 5000 DRIVINGINNOVITION

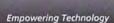
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(ET.L380B.063)

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(LX.FR606.041)





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- 5-in-1 card reader
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- Integrated ATI® Radeon® Xpress 1100 graphics
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Acer Aspire 5100-5095

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Mobile AMD Sempron ** Processor 3400+ Genuine Windows** XP Media Center Edition 2005 (LX.ABK0J.094)



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\$759

(ET.G16WP.001)



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- · 5ms gray-to-gray response time
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(ET.L6102.018)

Acer AL2416Wd

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- VGA, DVI-D signal connectors
- · 300 cd/m² brightness
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- · Internal power adapter
- · Black color

(ET.2216B.0D0)



\$195

(ET.1916B.W08)

Acer AL1916W Ab

- 19" wide-screen TFT LCD
- 1440 x 900 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
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- VGA signal connector
- · 300 cd/m2 brightness
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- · Internal power adapter
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Acer AL1717 Bbmd



- 17" TFT LCD
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- 700:1 contrast ratio
- · 150° horizontal viewing angle
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- Two 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- · 8ms response time
- · Internal power adapter
- · Black color

199

(ET.1717B.MD8)



Acer AL1706 Ab

- 17" TFT LCD
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(ET.1706B.008)

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Acer Aspire T180-EA381M

AMD Athlon[~] 64 Processor 3800+ Genuine Windows[®] XP Media Center Edition 2005 1GB DDR2 SDRAM and 250GB[®] SATA hard drive

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- 2300 ANSI lumens
- SVGA (800 x 600) native resolution
- SXGA (1280 x 1024) maximum resolution
- 2200:1 contrast ratio
- 4.8 lb. (2.2kg)
 (EY.J4001.007)



Acer PD311
Portable Projector
\$739

- 2000 ANSI lumens
- SVGA (800 x 600) native resolution
- SXGA (1280 x 1024)
- maximum resolution2000:1 contrast ratio
- 2.9 lb. (1.3kg)

(EY.J3401.006)





Home Entertainment

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- HyperTransport™ Technology
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- Integrated ATI® Radeon® Xpress 1100 graphics
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Windows® Vista™ Capable Acer Aspire 5102WLMi

\$899

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It's a tough world out there, and accidents do happen—sticky spills, dangerous drops, nasty knocks—which is why you should consider the Total Protection Upgrade. It runs concurrently with the limited warranty¹ and limited warranty extension and covers the cost of a replacement unit if your covered notebook cannot be repaired.

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- Depends on availability of PC-supported connections and location.
- Enhanced Virus Protection (EVP) is enabled by Microsoft^a Windows^a XP Service Pack 2. By default, EVP will protect the user's Windows operating system only. Users must enable the protection of their applications and associated files to be protected from memory buffer overrun attacks. AMD and Microsoft strongly recommend that users use third-party anti-virus software as part of their security strategy.
- When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

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TOMORROW'S TECH PIE-IN-THE-SKY?



E-VOTING? THE NAYS HAVE IT

YOUR ARTICLE "E-Voting: No Fix Yet" [News and Trends, November] helps make the public aware of one of the most critical issues facing our country today. A basic problem is that all of the vote counting is done inside the machines, using a secret source code. We have completely lost control of the electoral process. Democracy demands that the entire electoral process be open and transparent to retain citizens' confidence. Democracy cannot long survive a lack of confidence.

Darrell L. Shahan, Zanesville, Ohio

THE CONCLUSION THAT electronic voting machines of any kind must be banned from the polling place is inescapable. The machines' myriad problems (security, reliability, training, hardware, software) should prohibit their use in something so simple and sensitive as preserving our

democracy. These machines have been transported, reprogrammed, and patched, with little or no chain of custody.

Cliff Landes, Philadelphia

YOUR ARTICLE HIGHLIGHTS the many problems with electronic voting, including security, reliability, and operation. Other problems with our elections exist: voter intimidation, incorrect voting, lost ballots, and so on.

In Oregon we have demonstrated that all this is unnecessary. In 1998 voters passed a ballot measure directing all elechave time to study the ballot, and to vote over a period of hours or days. Polling places do not have to be set up; no expensive voting machines need to be purchased and maintained.

tions to be conducted by mail. Voters

Sometimes the high-tech solution is not the best solution.

John S. Dearing, Corvallis, Oregon

NET INFRINGEMENT

IN A SIDEBAR to "Internet Unleashed" [November] titled "Four Trends That Could Cripple the New Internet," the author bemoans laws protecting intellectual capital: "Kill the messengers [who provide unauthorized copyrighted content], and we could lose vital outlets for public opinion and discourse."

I can't imagine that PC World would allow unauthorized distribution of its copyrighted content, or allow its intellectual property in the form of PCWorld.com source code to be freely distributed on the Internet by unauthorized providers. You can discourse all you want without infringing on the rights of others.

Kenneth Athon, Fort Wayne Author's response: The YouTube site, which my item said may be sued for infringement, requires members to certify that their files do not infringe on others' copyrights, and it willingly removes files after a complaint. Those seem reasonable policies to me.

-Alan Stafford

TOMORROW'S OSS

IT IS INTERESTING that the future of operating systems is viewed as either Web-based or virtualization ["The OS Wars," November]. If it's the Web, "Four Trends That Could Cripple the New Internet" notes concerns with security and who owns your Web info. If it's virtualization, who is going to teach your

HOT TOPICS IN FORUMS

Music Formats, Linux, Vista Licenses

HERE ARE SOME of the hot topics going on now in our forums. You can take part in our community discussions by heading to find.pcworld.com/55165.

MUSIC PLAYERS: I purchased [an MP3 player] and loaded all my music in WMA format because you can get about twice the songs on your player....I was getting only 11 hours [of battery life], so I checked...and found out that WMA format requires more power to play than MP3....To test this out, I erased everything...and loaded every song back with MP3 set at 64 kbps. My battery charge life jumped to 20 hours! -DeadEye

LINUX: I've only been using Linux... for about a week [B]eing a non-tech guy makes Linux seem a bit daunting; however, I love the fact that things aren't always popping up on me, slowing down my browsing....I believe that if you have patience, Linux can be fun and educational to use. -helmeteve

► VISTA LICENSING RESTRICTIONS:

Once again [Microsoft] tests the waters ...with a new, more restrictive policy. As a gamer, I fall into that category of end users who constantly upgrade their hardware....I will NOT buy Vista if this restriction remains in its EULA. -kloker

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parents how to use a program in different OSs when they can hardly use Outlook Express except for the simplest tasks?

Michael Fish, Hugo, Minnesota

WILL FUTURE PCs READ CDs?

LINCOLN SPECTOR'S November Answer Line ["Will My CD-R and DVD±R Discs Still Work in 10 Years?"] looked exclusively at the discs themselves. The real impediment to long life, however, relates to devices capable of reading the discs. We're forced to rewrite to a new medium every couple of decades because technology moves ahead and the readers for the older format disappear.

I copied all my floppies to CD some time back. My last floppy reader must have gone out the door about five years ago. I expect my next PC to have a CD reader, but the one after that...

Lee Higble, Arctic Region Supercomputing Center, Fairbanks, Alaska

LOOKING BACK ON PREDICTIONS

I LOVED THE November *Techlog* ["The Future of Technology: A Look Back"] and Harry McCracken's honesty and ability to jab himself and the *PC World* team over past predictions.

Thanks for a delightful historical snapshot and a humorous reminder that we are just human and see through a glass darkly. After all, what journalist looked at that motley group of code writers at Gates's Redmond think tank, noted their propensity for marketing but not for creativity, and predicted that they would be the controlling giants of future software on future computers?

Don Dutcher, Boise, Idaho

NO CRYSTAL BALLS, PLEASE

I WOULD ENCOURAGE you to engage in less speculation (as in the November issue's "Tomorrow's Technology" roundup). Considering the off-the-mark prognostications listed in the *Techlog* editorial, I think November's speculations were a waste of good pages that could have been used for things that are already out there or are close to coming out.

Denise Hays, Davenport, Iowa

IMAGINE MY DISAPPOINTMENT, as a PC World junkie, opening my November issue and finding virtually nothing but useless forecasting.

I'm sure your authors had fun putting this issue together. Everyone wants to be a Nostradamus once in a life. But I find trying to forecast technology out to five years hence, when it moves so fast, is not even pie-in-the-sky. What's the point?

Please, the next time you have the urge to look into the distant future, don't destroy the entire issue.

Robert Ferguson, Lynchburg, Virginia

MARKETERS AND BROWSERS

I READ WITH amusement Stephen Manes's fearless predictions on future technology in November's Full Disclosure. And I can tell you this: The day my Web browser takes over my PC and controls my speaker volume or gives me a quiz to see whether I have watched some advertising is the day the browser provider can stuff it where the sun don't shine.

There will always be browser choice.

The clever ad execs had better be careful.

Fred Tivin, Cincinnati

PC World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com.

TELL US WHAT YOU THINK

RATE THIS ISSUE by going to www. pcworld.com/pcwinput-you could win a \$300 Amazon.com gift certificate. The site explains the official rules and offers an alternate method of entry into the prize drawing.

CORRECTIONS

IN THE "MEDIA-PLAYER Makeovers" section of December's "53 Hardware Secrets," we should have said that the Rhapsody music service lets you drag purchased tunes and playlists straight to your iPod (which appears in the Sources window). Also, the URL for the free MusicIP Mixer should have been www.musicip.com/mixer.

PC World regrets the errors.

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YOU'RE GIVING AWAY YOUR PRINCESS TO AN ENEMY GENERAL TO GAIN HIS ALLEGIANCE.



AND NOW YOU MUST LEAD YOUR CAVALRY TO CRUSH A REBELLION ON THE HOME FRONT.



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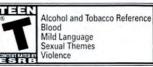














CONSUMER WATCH

YARDENA ARAR

WATCH OUT: CELL PHONE SOLICITATIONS RING IN

DON'T PUCKER UP FOR SMISHERS

FREE MUSIC FOR JUST \$35-SUCH A DEAL?

Is That a Sales Pitch in Your Pocket?

Get ready for the age of mobile marketing, coming soon to your cell phone.

TO YOU OR me, it's a communications device, good for making phone calls, sending text messages to friends and colleagues, and maybe checking e-mail or looking up something on the Web. But to marketers, your cell phone is an enticing potential conduit to your wallet-and the race to exploit it is gathering steam.

It's easy to see why the marketing community is so excited about gaining access to cell phones. How often are you separated from your cell phone? It's almost always close at hand, and unless you neglect recharging (as I frequently do), it's almost always turned on.

Even more appealingly, from a marketer's standpoint, it's very personally yours. Several people in a home might watch the same TV or use the same PC, but few people share a cell phone. As a result, any usage data collected for a given phone number can easily be pooled to create a profile of you to serve as a basis for future targeted ads.

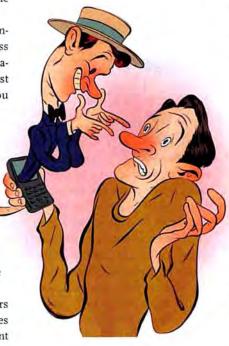
The downside for marketers: Carriers charge their customers for data services on cell phones, and customers don't want to pay for ads they haven't requested.

TEXT SPAM

TEXT MESSAGING IN particular has been in the vanguard of mobile marketing efforts. In Europe, where text messaging has been a popular means of communication for several years, text-message spam has been a problem. But text messaging was slower to catch on in this country, giving legislators and carriers time to put some effective safeguards in place.

The federal CAN-SPAM law expressly

prohibits sending unsolicited commercial messages to wireless devices. Unfortunately, according to the Federal Communications Commission's Web site. the ban applies only to messages that are sent using the Internet address format (a



user name followed by @ and a domain name). The law doesn't apply to phoneto-phone messages or to short-code messages such as the ones people use when voting for American Idol participants.

INDUSTRY EFFORTS

HOWEVER, THE INDUSTRY has stepped up to the plate to establish its own, more stringent rules against text-messaging spam. It's much more difficult to gain access to carrier networks in the United States than in Europe, and carriers have greater ability to protect their customers.

The Mobile Marketing Association, an industry group consisting of carriers and their marketing partners (businesses ranging from content providers to aggregators that route short-code messages to their destination) have developed guidelines for strictly policing text messaging ads. Marketers must sign an agreement to abide by these guidelines to gain access to the carriers' customers.

The MMA's guidelines include, among other things, a double opt-in policy, says John Styers, director of data planning and programming for Sprint Nextel and secretary of the MMA's executive committee. "If you see a commercial for content on TV and send a short code [to get it], you will not be sent that content until you [respond tol a confirmation message," Styers explains. The confirmation message

must state exactly what you're receiving and how much you've agreed to pay for it. In addition, you must be able to easily opt out of taking such messages.

Guidelines may not sound like much protection, but individual marketing and cell phone companies have good reason to comply with them: "We want to be able to self-govern," Styers says, In other words, they'd like to forestall additional regulation. Furthermore, all text messages must go through aggregators. Unlike in Europe, the few aggregators in the United States are all MMA members.

But it appears that the MMA's mandate ends with text messaging-and in the opinion of Charles Golvin, a principal analyst with Forrester Research, "text >



CONSUMER WATCH

messaging is only one of the channels in which one would receive marketing materials on the phone."

More and more phones now come with browsers, and a so-called mobile Web of sites optimized for phone browsers is developing. "If you browse the mobile Web on your phone, you can expect to see more interstitial and banner ads." Golvin says. (Interstitial ads precede or follow content that you've requested.)

Content sponsorship is gaining in popularity, too. Greystripe's GameJump Web site (www.gamejump.com) offers free games for cell phones-but whenever you play, you'll see an ad before you start the game and another when you finish it. The main issue for customers: Downloading the ads may swell your data bill.

GOING WHERE YOU ARE

MOBILE SEARCH SITES are poised to provide sponsored results based on the assumption that when you search for certain keywords, you're probably looking to buy. "Search for pizza, and you're going to get the best matches for pizza parlors-maybe even localized to where you are." Golvin says.

Not surprisingly, carriers are gearing up to benefit from these opportunities. Verizon, for example, employs technology designed by Medio Systems to help customers search through Verizon's ring tones, games, and images. But at least some cell phone customers may not realize that they're searching only Verizon's content, not the whole Internet. "When

PRIVACY WATCH

Phishers Put Their Lures on Cell Phones



HAVE YOU EVER been SMiShed? That's not as personal a question as it may sound to the uninitiated, but it does relate to protecting your personal data.

SMiShing, a term coined by researchers for the McAfee security software firm, describes a form of phishing in which the bad guys send an SMS (short message service) message to a person's mobile phone. The first such mes-

sages purported to come from dating-service Web sites. Victims would receive a message announcing that the site intended to charge them \$2 a day unless they visited the URL listed in the message and followed the steps outlined there to unsubscribe from the service. Upon browsing to the URL (via computer), victims would get hit with drive-by downloads that installed Trojan horse software that subsequently would steal passwords and do other nasty things to the victims' PC.

I can see how this kind of attack might succeed. Many people don't have the same level of suspicion about text messages that they do about spam or instant messages on a PC. On top of that, every cell phone user I know is wary of being "slammed" with charges for premium-rate services on their mobile phone bill.

Worms that infect PCs have begun to add SMiShing attacks to their menu of malicious activities as well. The VBS/Eliles worm, for instance, infects Windows PCs by opening a back door and giving the perpetrator remote access to the computer. It also launches SMiShing attacks by sending messages to cell phone customers. This particular worm targets the e-mail-SMS gateway at two mobile phone companies in Spain. Fortunately, the worm's creators weren't very sophisticated-most antivirus programs will detect the Eliles worm and delete it before it can cause trouble.

It's impossible for a company to add charges to your bill, unless you knowingly signed up for its service and provided a cell phone number so it could send you messages. So if you get a SMiShing-style SMS message and don't remember signing up for anything, just delete the message and ignore the instructions. The scam works because people visit the Web page without thinking twice about it.

-Andrew Brandt

using the WAP search built into the home deck [menu] of their carrier, it's less clear what they're searching," Golvin explains.

But while carriers want to share in

marketing revenues, they also have to be mindful of their customers to avoid losing them to the competition. "In general, your carrier will be your advocate,"

On Your Side responds: MyMusicInc

charges a fee for peer-to-peer software

that's available for free elsewhere. The

fact that you pay the fee has no bearing

on whether downloading copyrighted

files is legal (it still isn't). The site did

not respond to our repeated attempts

to contact it. Hawkins did finally obtain

the word "complaints" or "problems."

Golvin says. For example, most carriers block unsavory Web sites because they want to be perceived as family-friendly.

How annoying and costly will mobile marketing become? It's largely up to you.

Ask your carrier about the privacy policies governing its offerings, and check your data and messaging plans to ensure that downloads and messaging costs don't bloat your bill (see "Cell Phone Fees That Sneak Up on You," find.pcworld. com/55584). You may still receive targeted ads, but at least you'll know why.

Yardena Arar is a senior editor, Andrew Brandt is a contributing editor, and Amber Bouman is an editorial assistant for PC World, E-mail them at consumerwatch@ pcworld.com, privacywatch@pcworld.com, or onyourside@pcworld.com. To read previously published Consumer Watch, Privacy Watch, or On Your Side columns, visit find.pcworld. com/31703, find.pcworld.com/31706, or find.

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ON YOUR SIDE

My Music Doesn't Mean Free Music

I BOUGHT A \$35 lifetime membership to MyMusicInc.com, which promised unlimited free downloads of music and other software. The site promised it was legal and said it provided tech support. But because I'm blind, I use Jaws for Windows screenreading software to "see" my screen. The Web site is not Jaws-compatible, so I couldn't use it. No one answered my e-mail requests for an updated site or a refund. And now I'm getting lots of unrelated e-mail messages from the site. Jen Hawkins, Swansea, Illinois

a refund after our fifth e-mail, but she continues to receive unwanted e-mail messages, too. To check out a service before you buy, search for its name and

-Amber Bouman

Fatal Exception

Facts of life for hard drives: You spin for two to five years and then you die.

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Dump Pricey Antivirus for a Freebie

Plus: Restore your zapped Internet access and cancel a stuck print job.

FED UP WITH bloated commercial antivirus programs? Sick of being nickel-and-dimed for yearly renewals for the likes of Symantec's Norton AntiVirus and McAfee's Virus-Scan Plus? Yank these behemoths out by their roots and replace them with a super-duper freebie.

The Hassle: I want to switch over to a free antivirus program, but I seem to need a blowtorch to remove Norton Anti Virus. (Ditto for the McAfee product on my wife's PC.) Help!

The Fix: Blowtorch? Some people have tried using C4 plastic explosives to remove Norton productsand the Live Update still survives. If

'Add or Remove Programs' in Windows doesn't do the job, Norton provides a removal method that's terrific-but at the same time, a royal pain in the tuchas. It's the Norton Removal Tool (also called the AutoFix Tool; get it at find.pcworld.com/ 55524). It extracts every Norton product on your system (versions 2003 through 2007). That's right, it's dopey, and you're stuck reinstalling the tools you want to keep. (Dig up your original CDs before you start this fun exercise.) And yes, you will likely lose the personal settings when you reinstall the Norton products.





McAfee has a manual, albeit cumbersome, method to remove its VirusScan product (find.pcworld.com/55525).

For a replacement program, I have two favorite antivirus freebies: Grisoft's AVG (find.pcworld.com/55544), which is the application that I use, and Alwil's Avast (find.pcworld.com/55545).

Quick tip: And talking about uninstalling, you have to try MyUninstaller, Nir Sofer's nifty, free utility (find.pcworld.com/ 55528). The app also lists each program's location on your drive, when it was installed, and the product's Web site.

Print Here, There, and Everywhere

WANT TO PRINT a document directly on a pal's printer, anywhere in the world? If you're both online, you can do it with PrinterAnywhere (find.pcworld.com/ 55532). The free utility installs on both PCs, and you can choose the Printer-Anywhere printer from any application.

An encrypted version of your file shoots through the Net and outputs on your friend's printer. Turn the idea around, and you can share your printer with anyone. The program is ideal for sending confidential documents, and unlike e-mail your file can't be forwarded.

ANTISPYWARE GRIPE

The Hassle: After running an antispyware program, I now have only sporadic access to the Web.

The Fix: The culprit is a Layered Service Provider that went kaflooey or vanished. You may be able to Web surf, but you may not have e-mail, or vice versa. The fix is easy.

If you're using Windows 98 or Me, download and run LSP-Fix (find.pcworld.com/55529). XP users with Service Pack 2 should go to the Start menu, choose Run, type CMD, click OK, type netsh winsock reset, and reboot. No luck? Borrow

a buddy's PC and download WinSock XP Fix (find.pcworld.com/55546), a free tool that makes the LSP behave. Then read the tutorial (find.pcworld.com/55531).

UN-JAM A PRINT QUEUE

The Hassle: I started printing a 50-page document. Midway through, the job stopped, yet my clicking Cancel in the system tray's print queue didn't help.

The Fix: It's technically known as printicus stuckitis. From the Start menu, select Run, enter CMD, click OK, and type net stop spooler to halt the service. Leave the CMD window open, wait a few seconds, and check the print queue again-the print job should be gone. Type net start spooler in the CMD box. Finito!

Contributing Editor Steve Bass writes the Tips & Tweaks blog (find.pcworld.com/50264) and is the author of PC Annoyances, published by O'Reilly (find.pcworld.com/43818). Contact him at hasslefreepc@pcworld.com. To read his previous columns and newsletters, go to find.pcworld.com/50268.

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The Wireless Future Is (Almost) Here

Seeking relief from cable clutter? Solutions will be coming...any day now.

HI, MY NAME is Dan, and I have a gadget problem. As I write this, my entertainment console is stuffed to the gills: I have a DVD player, a VCR, a TiVo, a CD jukebox, an A/V receiver, a Wi-Fi adapter, a Slingbox, a Xitel surround-sound simulator, and a wide-screen projector. The devices I don't mind so much, but the cables are driving me nuts. It's a no-

man's-land behind that console— I need a wireless solution fast, before something blows up.

Last time I wrote about this topic (see find.pcworld.com/55558), devices employing Ultra Wideband (UWB) technology were still on the horizon. Now, the first commercial UWB product is finally arriving, and overall it looks pretty good. But the glorious wireless future comes with a few strings attached. For one thing, it will be limited largely to PCs, at least initially.

WIRES, BE GONE

I PLAYED WITH a preproduction version of Belkin's Cable-Free USB

Hub (\$199), which should be available by the time you read this (check www.belkin. com). The four-port hub connects to your PC sans wires. Plug a dongle the size of a thumb drive into a PC's USB 2.0 port, plug the hub into a power outlet, install half a dozen drivers, and you're in business. This would be useful for, say, a printer or a backup drive stashed on another shelf (and not at all useful for things like mice or USB headphones).

The Belkin product worked much like a regular USB hub: I could access files on a mini-drive, grab clips off a digital camcorder, even power up my iPod. The company says you can run multiple hubs off

a single dongle, though I didn't test that.

Some things didn't quite work as advertised, however. According to Belkin, the hub should connect up to 30 feet away in a straight line (provided no walls stand in between); but when I wandered more than 8 or 10 feet away, the connection dropped (it automatically reconnected when I got back in range). In my infor-



mal tests, the hub moved a 1GB file from an external drive to my PC in about 12 minutes on each of my two passes, or a bit over 11 mbps—fairly impressive.

Because UWB is much faster than Wi-Fi and requires far less power, it's likely to be found in portable devices such as cell phones and MP3 players, says Eric Broockman, CEO of Alereon, maker of UWB chip sets. He gave a practical demonstration last fall by beaming photos from a Kodak camera to a PC using Alereon UWB technology (no word on when you will be able to buy such a camera).

UWB-powered USB ports, which will eliminate the need for a dongle, are also likely to become a common feature on PCs. In-Stat predicts nearly 300 million UWB devices will be sold worldwide by 2010, two-thirds of them for PCs, says In-Stat research analyst Chris Kissel.

MESSED OPPORTUNITIES

WHAT ABOUT THE rest of that mess behind my cabinet? I see a few glimmers

of hope. Sometime in early 2007, Gefen plans to ship (for \$499) its Wireless for HDMI Extender, which will beam high-definition 1080i television signals from your cable or satellite box to a screen up to 30 feet away. Gefen also has a USB hub and a wireless VGA extender in the works, due out around the same time.

Meanwhile, the HomePlug Powerline Alliance wants you to stream video and audio via the wires inside your walls, which will support transfer levels of over 100 mbps, the group says. But consumer electronics gadgets with HomePlug tech won't be available for at least a

year, say spokespeople for Intellon, maker of HomePlug devices. Some Wi-Fi experts say that 200-mbps 802.11n networks are the answer, but the n standard won't be final for a while. Don't expect any n-enabled electronics gear to appear before the dust settles.

Once again, I'm forced to play the waiting game. I know the glorious wireless future will one day dawn; I just hope I'm still alive—and sane enough to enjoy it.

Contributing Editor Dan Tynan is the author of Computer Privacy Annoyances (O'Reilly Media, 2005). You can send him e-mail at gadgetfreak@pcworld.com.

Cures for Lost and Damaged Data

Newly released R-Studio 3.5 and other business continuity solutions from R-Tools lead the charge in restoring Windows-based data

N A CLIMATE WHERE USERS MUST GET access to business-critical data to serve customers and stay ahead of the competition, **R-Studio 3.5** from R-Tools is proving to be the ideal solution for recovering vital data lost to viruses, attacks, hardware failures, or operating system crashes.

This affordable undelete and data recovery software features an algorithm that lets users increase the quality of file recovery and recover files not recognized in the file system metadata. Besides FAT, NTFS, Ext2FS, and Ext3FS, R-Studio 3.5 supports both UFS1 and UFS2 file systems as well as enhanced remote host scanning procedures that analyze data on the remote host rather than on MARKETING

data recovery and get users the information they demand. Bundled with R-Studio 3.5

is **R-Studio Emergency Version**, allowing users to recover data even when Windows cannot be booted due to system file corruption or deletion.

R-Studio 3.5 is one product on a fast-growing list of business continuity solutions from R-Tools, a list that now includes **R-Mail for Outlook**. This handy utility restores deleted information and repairs damaged Microsoft Outlook files when Outlook cannot open them, allowing users to first preview recovered messages before recovering the information completely.

Meanwhile, R-Tools also offers



R-Mail for Outlook Express,

which reconstructs accidentally deleted email messages or damaged .dbx files. Other exceptional business continuity solutions from R-Tools include R-Word to recover damaged Microsoft Word files; R-Excel to reconstitute valuable Microsoft Excel files that are corrupted or attacked; and R-Wipe &

Clean to automatically keep disks free and clear of data clutter.

To learn more about any of these R-Tools solutions designed to keep your business up and running smoothly, visit **www.r-tt.com**.

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Internet Explorer 7 Proves Buggy Already

It's safer, but security holes still affect the new browser. Plus, a worm in iPods.

INTERNET EXPLORER 7 for Windows XP is finally out. Because it tries to fix or prevent many of the numerous security flaws that hit IE 6, it's arguably the largest bug fix we've seen in quite a while. For that reason alone. I recommend installing the update.

But IE 7 is not a panacea, in part because it still ties in to Windows for some of its work and can therefore pass along threats from buggy parts of the operating system (or other programs). We've seen a number of these types of problems recently, and now three more have been reported.

Less than a day after IE 7's release, Danish security firm Secunia said it had found a proof-of-concept, noncritical bug affecting IE 7. If you browse a malicious site while logged in to another site, an attacker could steal data you have on the logged-in site. Microsoft says the bug actually resides in Outlook Express, but IE 7 can be used as the attack vector, just like IE 6.

You're likewise vulnerable to a nasty, critical Windows bug involving XML, which is commonly used for Web sites



Windows holes undermine upgraded IE 7 security.

and many document types, regardless of whether you use IE 6 or IE 7. Both versions hand off XML processing to Windows proper, where the bug originates. You could be infected with a drive-by download from a malicious Web site if an attacker directs

a bunch of garbage data through IE to the newly discovered Windows weak spot. At press time no attacks had yet used this bug, but all currently supported versions of Windows could be hit. If you didn't receive the patch in Automatic Updates, head to find.pcworld.com/55630.

The new IE does offer more protection than version 6 for another pass-through critical Windows glitch-one that has already proven to be a popular hacker target. This flaw hits the Windows Shell. which displays the Windows user interface. Attackers can employ an ActiveX control to reach the bug via IE (with yet another buffer overflow error) and thereby take over your system. As with the XML bug, all supported versions of Windows are affected.

IE 7 provides additional protection in this case because it displays an opt-in pop-up that requires your approval before running new ActiveX controls. The pop-up won't specifically tell you you're under attack, and if you just click OK as many people are now conditioned to do with many browser notices, you'll get nailed. But it's more protection than you'll get with IE 6, which on an unpatched system will download a malicious payload without warning if you browse a boobyIN BRIEF

New Office Holes

HACKERS ARE USING a new batch of critical Office 2000 flaws to bite credulous openers of suspicious e-mail attachments. The holes are less dangerous. but still present, in Office 2003. Keep Office updated through Automatic Updates, or grab the patches at find. pcworld.com/55632.

More Battery Heat

SONY IS RECALLING some 3.5 million laptop batteries worldwide, including those used in its VAIO notebooks, as well as those in models from Fujitsu, Gateway, and Toshiba, because of a minute (but real) risk of overheating and fire. For a full list of recalled models and links to makers' recall sites, visit find.pcworld.com/55633.

trapped site. Get the fix from find.pcworld.com/55631 or via Automatic Updates.

Stuart J. Johnston is a contributing editor for PC World. Visit find.pcworld.com/31580 to see more Bugs and Fixes columns.

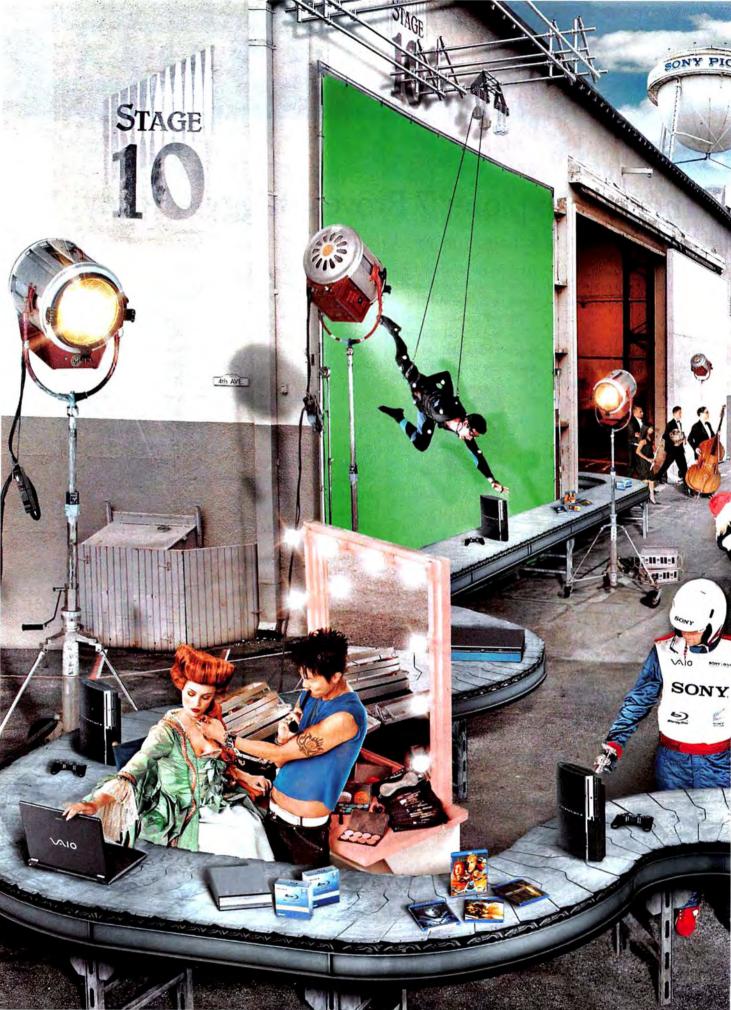
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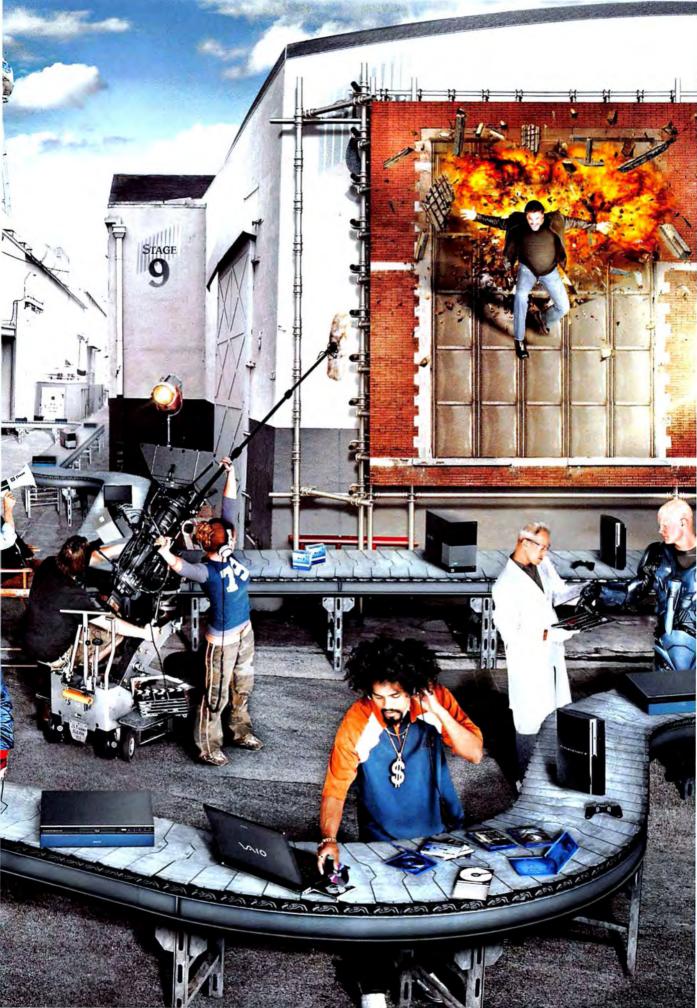
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VIDEO IPODS MAY COME WITH WINDOWS WORM

A SMALL NUMBER of video iPods picked up an unwelcome tagalong during manufacturing: a Windows worm. The malware doesn't harm the iPod, but once the device hooks up to a PC, the worm can silently wiggle its way into the system-and from there to any linked external storage device, like a thumb drive.

Less than 1 percent of video iPods shipped between September 12 and mid-October carry the worm, but if it infects a PC it can give an attacker full remote control. As a fix, Apple posted links to free trials of popular antivirus apps for cleaning affected computers, and says to use iTunes 7 to wipe and restore an iPod. Apple's bulletin is at find.pcworld.com/55656.





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■ BLU-RAY DISC

SONY

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Sony Internal Blu-ray Disc Drive and Sony Blu-ray Disc Blank Media The first generation Sony Internal Blu-ray Disc drive offers the best of all worlds by recording virtually all BD/DVD/CD disc formats. And when used with Sony BD-R and BD-RE discs, you get up to 50GB* of storage capacity - ten times more than a DVD. Burn up to four hours of HD video! Add even more of your favorite artists to your playlist.



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music. And games. And computers.

eers. We also talked to our Sony artists. We ame developers, how can we make it work an experience more than you ever imagined. In sity. More, in every sense! Many.com/bluray



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REVIEWS

- 64 McAFEE INTERNET SECURITY 2007, SYMANTEC NORTON INTERNET SECURITY 2007
- 69 CASIO EXILIM EX-S770
- 69 CANON HV10
- 70 SECURSTAR DRIVECRYPT PLUS PACK 3.5, PGP WHOLE **DISK ENCRYPTION 9.5**
- 74 RHAPSODY 4.0
- 74 WOLVERINE DATA ESP 5000

The Wide World of External Drives

Today's options provide impressive combinations of speed, interfaces, features, and software.

HARD DRIVES

TEST WHEN DESCRIBING Center the diversity among today's external hard drives, we almost feel as if we were talking about cars. Some drives exude off-road toughness. while others are sexy and small. And some are surprisingly speedy, while others are roomy enough to accommodate your growing media collection.

To help you find the perfect drive, we tested 14 external units with varying capacities. interfaces, and features. Products include the 1500GB (1.5TB) Maxtor OneTouch III Turbo Edition, loaded with software that configures a RAID setup and makes automatic restore points; Seagate's 750GB Pushbutton Backup Drive, which uses perpendicular magnetic recording technology; Apricorn's 250GB EZ Bus Desktop, equipped with a lightning-fast eSATA interface; Western Digital's ultrastylish 120GB Passport drive; and LaCie's 100GB Rugged All-Terrain Hard Drive, with shock-resistant features. For easier comparison, we divided

EDITED BY LIANE CASSAVOY AND NARASU REBBAPRAGADA

Though some drives offered multiple interface options, we assessed each drive using

its USB 2.0 interface unless

MAXTOR'S ONETOUCH III Mini Edition and WiebeTech's SilverSATA I earn our Best Buy

the models into two categories that we scored separately: five desktop drives with 3.5-inch platters, and nine portable drives with 2.5-inch platters.

designations this month.

The PC World Test Center ran each product through a series of performance tests.

it had an eSATA interface. External SATA drives rival internal hard drives in performance, and we see eSATA as a desirable, up-and-coming feature in external units. We did not test any drive's FireWire 400 interface (which is slower than USB 2.0) or Fire-Wire 800 interface (which is rare on PCs). We gauged how fast each product performed four tasks: reading and writing a single large 3.06GB file and a 3.06GB collection of files and folders, undergoing a virus scan, and handling

> a file search. Then, in a set of informal tests. we evaluated drives' hardware features. software bundles. documentation, and overall design.

Because we have room to print the feature and performance data of only the top five products in each chart category, four of the nine portable drives do not appear on the chart despite receiving a PCW Rating of Good. We'll refer to them in this story as "online only"; visit find.pcworld. com/55588 to see complete test reports for these models as well as for the products that captured places on the chart.

66 TOP 10 DIGITAL SLR CAMERAS

TOP 10 DESKTOP REPLACEMENT

AND ALL-PURPOSE LAPTOPS

77 TOP 5 DVD RECORDERS

- **78 SLING MEDIA SLINGBOX AV**
- 80 NOKIA E62, T-MOBILE DASH
- PLEXTOR PX-B900A
- 81 RINGCUBE MOJOPAC 1.0.1
- 82 DELPHI NAV200, MIO TECHNOLOGY DIGIWALKER H610
- 84 AOL OPENRIDE
- 84 EMC RETROSPECT EXPRESS HD 2.0





In our desktop category WiebeTech's expensive Silver-SATA I earned our Best Buy nod, thanks to its fast eSATA interface (it also has the convenience of a USB 2.0 port) and unique design. A plastic key unlocks the silver case, so you can swap out drives without shutting down the device; as a result, you can easily expand storage simply by buying bare drives and popping them into the SilverSATA tray. The product isn't cheap, though: Our 500GB setup cost \$436. Wiebe-Tech sells additional trays for \$30 each and trays with drives starting at \$163 for 250GB. The best-performing desktop hard drive was the number two Apricorn EZ Bus Desktop SATA model-and at \$149 for a 250GB unit, it has a low cost per gigabyte, as well. Unfortunately, this is an eSATA-only drive and lacks a USB 2.0 port.

Among portable hard drives. Best Buy honors went to the 160GB Maxtor OneTouch III Mini Edition, which delivered the best overall blend of performance, price, features, and software. Significantly, the OneTouch III was the only portable drive to come with a backup button. The category's top performer finished fourth

overall: LaCie's 100GB Rugged All-Terrain Hard Drive is a stylish aluminum product that offers three interfaces-USB 2.0, FireWire 400, and FireWire 800-and shock protection inside and outside the drive enclosure. (We did not attempt to test drives' shock protection for this review.)

SATA RULES

THE BOTTOM LINE ON performance is this: If you have a free eSATA port. use it. Our test PC had a new (and currently uncommon) eSATA external port included on its case. If your machine lacks an eSATA port but has an available PCI slot, you can buy a single-port add-in card for \$20 or so. A less elegant solution would be to use a pass-through cable to connect directly to a SATA port on your system's motherboard, eSATA drives tend to be far faster than USB 2.0 drives. On average, the two eSATA desktop drives (the WiebeTech and the Apricorn) performed at about 1.5 to 2 times the speed of the USB 2.0 drives on all tests except the file-search operation-and the two interfaces performed comparably on that task.

The high speeds that the SATA drives turned in raised our evaluation standard for the three USB 2.0 products. among which Maxtor's One-Touch III Turbo Edition slightly outperformed the rest. We tested the OneTouch III Turbo

> at its default RAID 0 setting for

WESTERN DIGITAL'S PASSPORT Portable Drive is beautiful.

striping data across drives. RAID 1, the product's alternative setting, mirrors the same data on each of the enclosure's drives-a redundancy feature in case one of the two drives fails. Mirroring reduces the total capacity of the OneTouch III Turbo by half, however.

Four drives-the LaCie Little Big Disk (online only), the LaCie Rugged All-Terrain Hard Drive, the Maxtor One-Touch III Turbo Edition, and the Western Digital My Book Professional Edition-came with FireWire 800, an interface that video professionals and other people who need high-speed data transfer like to use on their Macs. Few PCs have FireWire 800, so most people would need to install a product such as Belkin's \$80 FireWire 800 3-Port PCI Card

before they could use it. If you have PC support for it, FireWire 800 will deliver a significant speed boost (similar to that provided by eSATA) over USB 2.0. All of our tests, except the file-search test, showed improved drive performance with FireWire 800. The Little Big Disk, the One Touch III Turbo, and the My Book Professional Edition ran our tests about 1.75 times as fast when linked via FireWire 800 as they did over a USB 2.0 port. The Rugged All-Terrain Hard Drive ran about 1.5 times as fast when using FireWire 800.

CONVENIENCES

TWO MAXTOR DRIVES-the OneTouch III Turbo and One-Touch III Mini—and the ▶ Seagate Pushbutton Backup have buttons that activate bundled backup software. Ex-

Portable Drive (online only) and WiebeTech's SilverSATA I, all of the drives came with impressive is the Maxtor One-Touch III Turbo's bundle of EMC's Retrospect Express HD with the test

and sets regular, automatic system restore points. (See our online chart at find.pcworld. com/55588 for details on each drive's software offerings.)

Apricorn's EZ Bus Desktop and the same company's Aegis Portable come with a simply designed but comprehensive software package that includes encryption software carrying multiple security algorithms. Western Digital's Passport Portable Drive, Maxtor's One-Touch III Mini, and drives such as Iomega's Silver Portable Hard Drive (online only) that pack Retrospect Express also have encryption features.

Two portable drives, LaCie's Rugged All-Terrain and Plextor's Shock Proof (online only). have a rubber border and internal shock protection. These features impose a price premium that shows up as a high cost per gigabyte.

The most beautifully designed drive we examined is Western Digital's Passport, with a shiny black exterior, a rubber door that protects its ports, and a neoprene case with a pocket to hold its cable. The Western Digital My Book Pro has a blue circular light that indicates how much of its capacity is already filled; and Apricorn's Aegis Portable has a built-in USB cable.

LaCie's interesting, 320GB Little Big Disk (online only) spans categories. Technically a mobile unit, with two 2.5inch drives striped in a RAID 0 setup, it has as much capacity as some desktop drives doyet it is bus-powered through a FireWire connection, like a mobile drive. This hybrid feature set proves that the simple hard drive is rapidly becoming a complex creation.

—Narasu Rebbapragada

- 1	PORTABLE EXTERNAL DRIVE	PCW Rating	Performance	Features and specifications			
1	Maxtor OneTouch III Mini Edition Best \$200 find.pcworld.com/55564	82 Very Good	Overall performance: Very Good Copy files: 148 seconds File search: 117 seconds	• 160GB • 7200 rpm • USB 2.0 • Cost per gigabyte: \$1.25			
	 Bottom line: This inexpensive, slick-looking dri 	ve comes with a	programmable backup button and prelo	aded backup and security software.			
2	Seagate Portable External Hard Drive \$230 find.pcworld.com/55566	80 Very Good	Overall performance: Good Copy files: 195 seconds File search: 108 seconds	• 160GB • 7200 rpm • USB 2.0 • Cost per gigabyte: \$1.44			
-	Bottom line: Drive scores well across performance, design, and feature categories and comes with good backup software.						
3	Apricorn Aegis Portable USB 5219 find.pcworld.com/55569	80 Very Good	Overall performance: Good Copy files: 155 seconds File search: 117 seconds	• 120GB • 5400 rpm • USB 2.0 • Cost per gigabyte: \$1.83			
	Bottom line: Full-featured drive has a built-in USB cable, a three-year warranty, and disk-imaging, backup, and encryption software.						
1	LaCie Rugged All-Terrain Hard Drive \$360 find.pcworld.com/55567	78	Overall performance: Superior Copy files: 144 seconds File search: 112 seconds	• 100GB • 7200 rpm • USB 2.0, FireWire 800/400 • Cost per gigabyte: \$3.60			
	► Bottom line: Top-performing triple-interface drive features internal and external shock resistance, but it's expensive.						
5	Western Digital Passport Portable Drive \$200 find.pcworld.com/55565	78	Overall performance: Good Copy files: 213 seconds File search: 118 seconds	• 120GB • 5400 rpm • USB 2.0 • Cost per gigabyte: \$1.67			
	► Bottom line: Very stylish portable drive comes	preloaded with f	ile syncing and encryption software.				
	DESKTOP EXTERNAL DRIVE						
	WiebeTech SilverSATA I	00	Overall performance: Superior	• 500GB			
1	BUY \$436 find.pcworld.com/55579	83 Very Good	Copy files: 105 seconds File search: 100 seconds	7200 rpm External SATA-150, USB 2.0 Cost per gigabyte: \$0.87			
1		************	Copy files: 105 seconds File search: 100 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87			
2	BUY find.pcworld.com/55579	************	Copy files: 105 seconds File search: 100 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87			
2	Find.pcworld.com/55579 Bottom line: Fast eSATA drive has a nicely desi Apricorn EZ Bus Desktop SATA \$149	gned case that in	Copy files: 105 seconds File search: 100 seconds cludes removable drive bays and a plast Overall performance: Superior Copy files: 121 seconds File search: 100 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87 lic key to lock the enclosure. 250GB 7200 rpm External SATA-150 Cost per gigabyte: \$0.60			
3	Find.pcworld.com/55579 Bottom line: Fast eSATA drive has a nicely desi Apricorn EZ Bus Desktop SATA \$149 find.pcworld.com/55580	gned case that in	Copy files: 105 seconds File search: 100 seconds cludes removable drive bays and a plast Overall performance: Superior Copy files: 121 seconds File search: 100 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87 lic key to lock the enclosure. 250GB 7200 rpm External SATA-150 Cost per gigabyte: \$0.60			
	Bottom line: Fast eSATA drive has a nicely desi Apricorn EZ Bus Desktop SATA \$149 find.pcworld.com/55580 Bottom line: eSATA desktop drive is fast and in Western Digital My Book Pro Edition \$350	77 Good expensive; it con	Copy files: 105 seconds File search: 100 seconds Overall performance: Superior Copy files: 121 seconds File search: 100 seconds es bundled with basic backup, encrypti Overall performance: Poor Copy files: 269 seconds File search: 102 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87 ic key to lock the enclosure. 2506B 7200 rpm External SATA-150 Cost per gigabyte: \$0.60 on, and disk-imaging software. 500GB 7200 rpm USB 2.0, FireWire 800/400 Cost per gigabyte: \$0.70			
3	Bottom line: Fast eSATA drive has a nicely desi Apricorn EZ Bus Desktop SATA \$149 find.pcworld.com/55580 Bottom line: eSATA desktop drive is fast and in Western Digital My Book Pro Edition \$350 find.pcworld.com/55577 Bottom line: Drive performs slowly but has a c Seagate 750GB Pushbutton Backup Drive \$460 find.pcworld.com/55575	77 Good expensive; it con 77 Good apacity indicator, Good	Copy files: 105 seconds File search: 100 seconds Overall performance: Superior Copy files: 121 seconds File search: 100 seconds File search: 100 seconds Overall performance: Poor Copy files: 269 seconds File search: 102 seconds a good software bundle, and an attract Overall performance: Poor Copy files: 273 seconds File search: 102 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87 ic key to lock the enclosure. 250GB 7200 rpm External SATA-150 Cost per gigabyte: \$0.60 on, and disk-imaging software. 500GB 7200 rpm USB 2.0, FireWire 800/400 Cost per gigabyte: \$0.70 ive look. 750GB 7200 rpm USB 2.0, FireWire 400 Cost per gigabyte: \$0.61			
	Bottom line: Fast eSATA drive has a nicely desi Apricorn EZ Bus Desktop SATA \$149 find.pcworld.com/55580 Bottom line: eSATA desktop drive is fast and in Western Digital My Book Pro Edition \$350 find.pcworld.com/55577 Bottom line: Drive performs slowly but has a co	77 Good expensive; it con 77 Good apacity indicator, Good	Copy files: 105 seconds File search: 100 seconds Overall performance: Superior Copy files: 121 seconds File search: 100 seconds File search: 100 seconds Overall performance: Poor Copy files: 269 seconds File search: 102 seconds a good software bundle, and an attract Overall performance: Poor Copy files: 273 seconds File search: 102 seconds	External SATA-150, USB 2.0 Cost per gigabyte: \$0.87 ic key to lock the enclosure. 250GB 7200 rpm External SATA-150 Cost per gigabyte: \$0.60 on, and disk-imaging software. 500GB 7200 rpm USB 2.0, FireWire 800/400 Cost per gigabyte: \$0.70 ive look. 750GB 7200 rpm USB 2.0, FireWire 400 Cost per gigabyte: \$0.61			

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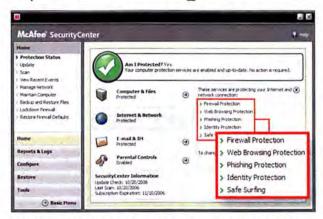
McAfee and Symantec Improve PC Protection

SECURITY SUITES

THE NEW SECURITY suites from McAfee and Symantec offer comprehensive protection against current security threats. The core antivirus. antispyware, and firewall protection provided by McAfee's Internet Security 2007 and by Symantec's Norton Internet Security 2007 will keep your PC safe, and both suites offer secondary tools such as parental controls, privacy controls, and antispam features. For a multiple-PC setup, Symantec's suite costs less, and it also offers better adware and spyware protection-despite some performance holes.

Both McAfee and Symantec have done a good job redesigning their interfaces. Symantec's suite has a noticeably streamlined look, and it responds more quickly than in the past. This year Symantec includes three PC licenses with the \$70 price for a year's worth of virus updates; that's a good deal. Be warned, however, that if you buy either company's suite online with a credit card, the company will automatically charge you for the next year's renewal if you don't opt out first.

In malware tests conducted by AV-Test.org, both packages performed well, though each had weaknesses. Symantec's



MCAFEE'S ANTIPHISHING TOOLS offer thorough Web protection.



SYMANTEC'S NEW INTERFACE conveniently consolidates settings.

suite detected only 74 percent of malware tucked into Microsoft Office Object Linking and Embedding (OLE) objects, whereas McAfee's found 100 percent of the bad files. When scanning malware hidden in compressed files, Symantec's suite detected 78 percent of the interlopers while McAfee's

package spotted 96 percent.

On the other hand, Symantec's protection against adware and spyware was exceptional. It detected 95 percent of adware and spyware samples, versus a detection rate of just 74 percent for the McAfee suite. Also, McAfee's suite incurred a significant false positive rate of 0.09 percent; Symantec's rate, in contrast, was a more acceptable 0.02 percent.

GOING PHISHING

BOTH SUITES BLOCK users from visiting phishing Web sites, but McAfee's program has the better antiphishing implementation. Symantec's

suite, which works with Internet Explorer only, features an obtrusive bar beneath the Address Bar that turns red when you stumble across a phishing site. McAfee's protectionwhich works with Firefox, as well-incorporates a blockedsite dialog box that appears as a Task Bar pop-up: McAfee's collection of utilities also includes the extremely useful SiteAdvisor plug-in (see find. pcworld.com/55616), to warn you about dangerous sites.

In my informal tests, both products' antiphishing protection was effective. Since each focuses on sites that collect financial or confidential information, neither product prevented me from going to a Web site that fraudulently uses the TrustE privacy seal to collect contact information only-so it's still important to be vigilant when surfing.

Your PC will take a performance hit for all this protection, too-a little more so with McAfee's suite. In speed tests conducted by AV-Test.org, copying 760MB of files on a test PC equipped with a 2.8-GHz Pentium 4 CPU, 512MB of RAM, and an 80GB hard drive, without security protection enabled, took just 36 seconds. But copying with Symantec's real-time protection turned on took 80 seconds; and performing the same task with the real-time protection of McAfee's software turned on took 97 seconds.

Though Symantec's security suite is the better value, McAfee's has the impressive SiteAdvisor tool and excellent antiphishing components.

-Narasu Rebbapragada

Internet Security 2007

McAfee

PCW Rating 85 Very Good

Though more expensive for a multiple-PC setup, this fullfeatured suite offers excellent Web surfing protection. List: \$70

find.pcworld.com/55617

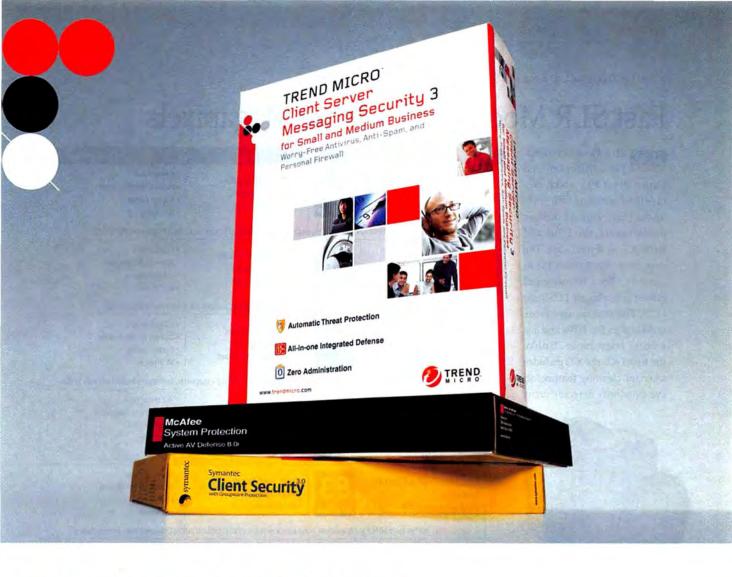
Norton Internet Security 2007

Symantec

PCW Rating 87 Very Good

This suite, with its exemplary adware and spyware protection, is the better security deal. List: \$70 for three PCs

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Fast SLR Models Offer More Meganixels

THE EAGERLY antici-center pated Nikon D80 and Canon Rebel XTi, which capture the fourth and fifth spots on our chart, improve on their predecessors, the D70s and Rebel XT, in several ways. The new single-lens reflex (SLR) cameras offer a 10-megapixel sensor and a larger (2.5-inch) LCD. The D80 focuses more quickly than the D70s and has a faster burst mode. Unlike the Rebel XT, the XTi includes a sensor-cleaning feature; an eye proximity detector turns



NIKON'S D80 IS fast and offers many features found on the higher-end Nikon D200.

the camera's LCD on and off. Despite having a modest 6.1megapixel sensor, the number eight Pentax K100D boasts image stabilization and a dustremoval mechanism. On the other hand, its maximum burst speed is only 1.5 frames per second for JPEG images. and its battery life was poor.

-Eric Butterfield

ONLINE

FOR MORE INFORMATION on the cameras reviewed in this month's chart, including testing details, see find.pcworld.com/55745.

		The same of the sa	Performance	Features and specifications		
1	Canon EOS Digital Rebel XT Best \$799 BUY find.pcworld.com/48088	84 Very Good	Image quality: Superior Battery life: Superior Overall design: Good	8 megapixels 28.8mm-to-88mm zoom 6 scene modes 17.1 ounces		
	➤ Bottom line: Fast action, compact size, and great imaging make the Digital Rebel XT a top pick among inexpensive digital SLRs.					
2	Olympus EVolt E-500 \$720 find.pcworld.com/50350	84 Very Good	Image quality: Very Good Battery life: Superior Overall design: Good	8 megapixels 28mm-to-90mm zoom 15 scene modes 30.4 ounces		
3	Canon EOS 30D \$1500 find.pcworld.com/52696	83 Very Good	Image quality: Superior Battery life: Superior Overall design: Yery Good	8.2 megapixels 28.8mm-to-88mm zoom 5 scene modes 34.8 ounces		
	➤ Bottom line: Model uses the same (MOS sensor as th	e 200, but has a larger LCD and a spo	t meter. Controls are intuitive and easy to use		
4	Nikon D80 \$1300 NEW find.pcworld.com/55704	83 Very Good	Image quality: Yery Good Battery life: Superior Overall design: Yery Good	10.2 megapixels 27mm-to-202.5mm zoom 7 scene modes 38.7 ounces		
	▶ Bottom line: This fast, powerful SLR is significantly smaller than the D70s; it offers many features, including a status LCD.					
5	Canon EOS Digital Rebel XTi \$899 NEW find.pcworld.com/55703	83 Very Good	Image quality: Superior Battery life: Superior Overall design: Good	 10.1 megapixels 28.8mm-to-88mm zoom 6 scene modes 18.0 ounces 		
ı	Bottom line: This full-featured SLR yields excellent image quality, with low noise at high ISO settings, though it lacks a status display.					
6	Nikon D50 \$665 find.pcworld.com/48783	80 Very Good	Image quality: Good Battery life: Superior Overall design: Good	• 6.1 megapixels • 27mm-to-82.5mm zoom • 7 scene modes • 19.0 ounces		
	► Bottom line: A fine entry-level digital SLR-particularly if you own Nikon lenses. It lacks some controls found on the D70s.					
7	Nikon D200 \$2000 find.pcworld.com/51670	80 Very Good	Image quality: Very Good Battery life: Superior Overall design: Very Good	• 10.2 megapixels • 18mm-to-70mm zoom • 0 scene modes • 29.0 ounces		
	▶ Bottom line: The D200 is fast, powerful, and beautiful. Menu navigation has improved, and you can add GPS location info to your photos.					
8	Pentax K100D \$700 NEW find.pcworld.com/55702	80 Very Good	Image quality: Very Good Battery life: Poor Overall design: Very Good	6.1 megapixels 27mm-to-82.5mm zoom 13 scene modes 30.3 ounces		
	▶ Bottom line: Low-priced SLR has plenty of features. Though its resolution is relatively low, the camera produced high-quality images.					
9	Nikon D70s \$950 find.pcworld.com/48518	80 Very Good	Image quality: Good Battery life: Superior Overall design: Yery Good	- 6.1 megapixels - 27mm-to-105mm zoom - 6 scene modes - 21.0 ounces		
	➤ Bottom line: Small, lightweight cam	era possesses con	veniences that other models don't ha			
0	Olympus EVolt E-330 \$1000 find.pcworld.com/52700	78 Good	Image quality: Very Good Battery life: Superior Overall design: Fair	7.4 megapixels 28mm-to-90mm zoom 20 scene modes 32.4 ounces		

CHART NOTE: Prices and ratings are as of 11/6/06.



WIDESCREENS LIKE TO TRAVEL LIGHT TOO.



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distinctive innovations

Active Protection System Integrated Fingerprint Reader

system features Intel® Core™ 2 Duo Processor 7200

Genuine Windows XP Professional Genuine Windows Vista Capable

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15.4" WUXGA plus Integrated Bluetooth

1024MB Memory

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ThinkCentre A55 Tower

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Ultraslim Casio Delivers Excellent Images

DIGITAL CAMERA

TEST THE NEW \$320 Casio Center Exilim EX-S770 is a 7.2megapixel addition to the company's Card series of ultraslim cameras. The svelte, stylish body comes at a cost, though, as the camera lacks many of the manual controls you'll find on similar models.

The EX-S770's sturdy metal body is just 0.7 inch thick. At 2.8 inches diagonally, the LCD fills most of back panel, leav-

Exilim EX-S770

Casio

PCW Rating 76 Good

This slender camera captures attractive photos, but its manual controls are limited.

Street: \$320

find.pcworld.com/55583

ing little room for buttons. As a result, the buttons are small. which can make trying to access them very frustrating.

The EX-S770 doesn't provide such manual controls as aperture- and shutter-priority modes. You can, however, adjust sharpness, saturation, and contrast, as well as the intensity of the flash; also, you can customize the white balance and assign two positions on the four-way selector to change the ISO, for example.

This small camera produced photos with impressive image quality in our tests, earning an overall score of Very Good. In particular the EX-S770 excelled at taking shots with low distortion and sharp details.

It has an antishake feature.

too. In informal testing, this feature was somewhat effective at sharpening an image shot in daylight shadows, but it couldn't freeze the blur caused by my subtly shaking hands on an indoor shot taken without a flash.

The EX-S770's light sensitivity is low-it tops out at ISO 400 (many point-andshoots offer up to ISO 800 or ISO 1600), so you'll have trouble getting a sharp shot in low light without using the flash.

Battery life was a little below average. In our lab tests, the EX-S770 took 250 shots (versus the category average of 277 shots) on a single charge of its lithium ion battery.



THE STYLISH, SLIM Casio EX-S770 is available in three colors: silver, red, and blue.

Still, if you tend to stick with automatic mode and rarely adjust the settings on your camera, the EX-S770's high image quality and stylish design make it a fine option.

-Eric Butterfield

Canon HV10 Takes Great-Looking Video

CAMCORDER

CANON'S NEW \$1100 HV10, the company's first consumeroriented high-definition camcorder, makes a strong debut. It produces impressive video and is easy to use, but suffers from a rather bulky design.

The HV10 records highdefinition video to MiniDV tapes using the HDV format, which stores high-def video in the same amount of space that standard-def video would occupy. In my informal testing, video quality was excellent: I noted vivid colors and plenty of detail in video shot in daylight conditions.

The camcorder's low-light performance disappointed me somewhat, however. Video taken indoors or on an outdoor evening was pale and weak. You can tweak the results a bit by using manual controls (which are rarely seen on consumer camcord-

THE HV10 IS slightly larger than most vertical-style camcorders.

ers), but my output still looked gloomier and less appealing afterward than did video from other camcorders under similar light conditions.

The camcorder itself feels rather awkward in the hand: At 2.2 by 4.2 by 4.2 inches, it's bigger than most vertical-style camcorders designed to fit in your palm; and it felt a little too large to fit comfortably in my hands.

> The HV10's controls are conveniently located: The zoom control falls under the

user's index finger, and the record button sits under the thumb. The other controls are located either on the back of the camcorder or

underneath the 2.7-inch LCD. In informal tests, the HV10's battery lasted for roughly 70 minutes; that's a little below average for a camcorder cell.

You can save a few hundred bucks by skipping high def completely: Very respectable standard-definition camcorders are available for about \$600 less. But if you're looking for a device that captures high-definition home movies, the HV10 is a fine choice.

-Richard Baguley

HV10

Canon

PCW Rating 79 Good

This high-definition camcorder takes admirable-quality video, but its design is a bit bulky. Street: \$1100

find.pcworld.com/55635

New Encryption Apps Keep Your Data Safe

SECURITY

YOU MAY NOT always be able to protect your laptop from a thief, but you can safeguard the data that it contains. Two new products-PGP Whole Disk Encryption 9.5 and DriveCrypt Plus Pack 3.5 from SecurStarpromise to protect your data so that even if your computer falls into the wrong hands, its contents will remain unreadable. Though both applications contain impressive tools.

Both apps offer on-the-fly full-disk encryption, scrambling all of the data on your hard drive the moment you save it to disk. The initial setup for both utilities-creating an encryption key and identifying the partitions the software should protect-takes just a few minutes. Once that routine is done, you can open, alter, save, and close files as you normally do, and the software does all the work.

The most significant differences between the products are price-at \$119, PGP's package is a better value than the \$161 DriveCryptand additional features. Most people will rate PGP's offering

> Even so, the ultraparanoid might find DriveCrypt's feature set more compelling. It

10 to 2 miles New Virtual Disk Enter Oisk Properties Print an Name New PGP Disk1 New NO Zp Disk File Location C-Documents and Settings\spike\My D

PGP'S VIRTUAL DISK feature allows you to encrypt selected files.

of "virtual disks"-encrypted containers that the operating system treats as if each were another drive partition. This comes in handy if you want to encrypt some files on an external drive, but not the entire drive. The program also lets you create an encrypted "PGP Zip" file that you can send to others; your recipients don't need a copy of the program to open the files, either.

Whether you require Drive-Crypt's cloak-and-dagger features or PGP's simpler tools for sharing encrypted data, both apps provide an impressive level of data protection.

permits users to create multi-

ple passwords for a system,

for instance. You can assign

one password that grants full

access to all data on a drive,

and a second password that

permits access to only a por-

tion of the drive while hiding

the rest. DriveCrypt also lets

you hide encryption keys in-

side multimedia files, such as

JPEG images or MP3s.

-Andrew Brandt

Welcome to the Key Store creation Wizard Please enter the kind of Key Store your want to create Drive F I want my Key Store in a normal file I want my Key Store hidden in an Image (24-bit BMP Re) [I want to hide my Key Store in Music [16-bit WAV file] This screen allows you to select the kind of container for you key Store, you key Store will contain all of the keys you generate, so it is important to keep this fife sate, and make sue nobody can copy the file, even though the file will be Cancel.

DRIVECRYPT LETS YOU hide your encryption keys inside multimedia files for added security.

most travelers will prefer the practical features and lower price tag of PGP's product.

as the better choice on both counts. For instance, PGP allows you to create any number

GOTCHA!

PlayStation 3: High-Def Tools Are MIA

NOW THAT YOU'VE dropped up to \$600 on your shiny new PlayStation 3 high-def gaming console, you're all set to play games and watch Blu-ray Disc movies in all their HD splendor, right? Not so fast: Sony left a few core accessories out of the box,

and you need to procure-and pay for-them before you can experience high-def magic.

First, the PS3 comes with only a Sony proprietary audio/video multi-out composite video cable. To output in high definition to TV, you'll have to pay extra for an A/V multi-out



component video cable plus upward of \$30 more for an HDMI cable. (By contrast, Samsung's BD-P1000 Bluray player ships with both component and HDMI cables in the bundle.) Also, if you want to truly enjoy using the game console as a Blu-ray

Disc player and view movies in full homeentertainment mode (not just using the game controller), you must shell out \$25 for Sony's BD remote. Note: Microsoft's Xbox 360 comes with a DVD remote and component cables.

-Melissa J. Perenson

DriveCrypt Plus Pack 3.5

SecurStar

PCW Rating 89 Very Good

DriveCrypt is expensive, but it can protect your data under even the most hostile conditions.

List: \$161

find.pcworld.com/55625

PGP Whole Disk Encryption 9.5

PGP

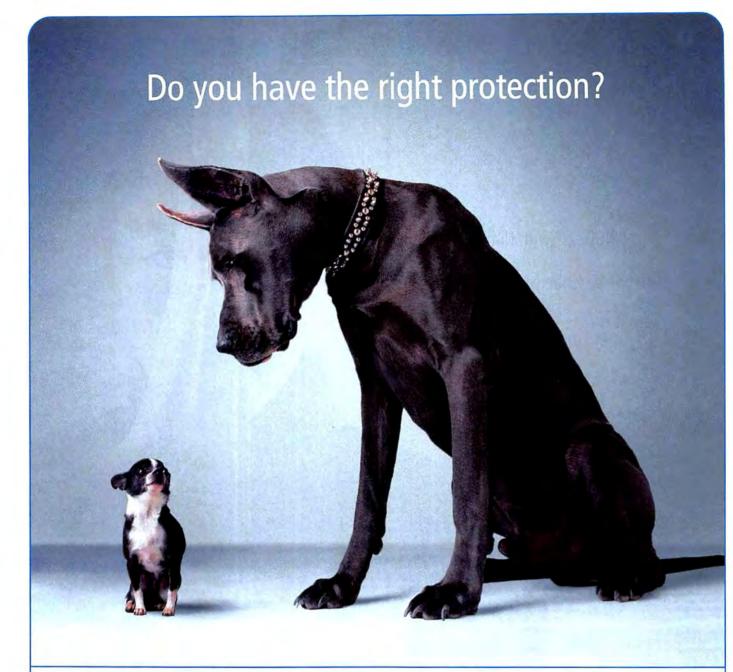
PCW Rating 89 Very Good

PGP offers practical encryption and data-protection tools for a reasonable price.

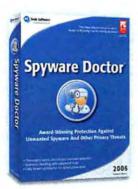
List: \$119

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DOMINATE IDEAZON

UDIO

SUBSCRIPTION MUSIC services like Rhapsody make it easy for you to check out new music without paying more than your monthly fee (which ranges from \$10 to \$15), but you may still find yourself listening to the same five bands you loved in high school. Not so with Rhapsody 4.0, which automatically feeds you new

music in the genres you like.

You can load a Rhapsody channel-a collection of tracks in a certain genre like New Wave-directly to a compatible portable player (at launch, the only compatible players were models in the SanDisk Sansa e200R series). When you reconnect the music player to your PC, Rhapsody updates that channel with new music.

Version 4.0 makes downloading tracks to a portable player much simpler. The old version first downloaded the music to your PC's hard drive and then copied it to your player, so you ended up with the music on your hard drive whether you wanted it there



RHAPSODY'S CHANNELS LET you sample music in a certain genre.

or not. Now, you can drag an album directly to your player.

The software uses DNA, a new digital rights management system built by Real-Networks that lets Rhapsody move away from PlaysForSure (Microsoft's rather ill-suited name for its DRM standard). It's difficult to say whether

DNA will do a better job than PlaysForSure; I ran into some glitches while transferring tracks to a Sansa player.

Rhapsody 4.0 is an innovative update to an already solid digital music system. It even has me listening to some music recorded this century.

-Edward N. Albro

Rhapsody 4.0

Rhapsody

PCW Rating 80 Very Good

A worthy update to an already impressive service, version 4.0 helps you discover new music. List: \$10 to \$15 per month find.pcworld.com/55622

Wolverine's Multipurpose Media Player

MULTIMEDIA

TEST AT TIMES, function Center prevails over form and finesse. That's precisely the case with Wolverine's secondgeneration media player, the \$500 ESP 5000 Series. The ESP 5000's modest, gray design lacks the elegance of an Apple iPod, but it's still a capable and versatile device.

The product is tailor-made

for digital-photography enthusiasts who want to view their photos. At the top, two slots accept cards in any of seven formats, including CompactFlash, Memory Stick in its variants, SD Card, and xD-Picture Card.

Conveniently, you don't need any proprietary software to upload ed came with

content to the ESP 5000. Just jack it into your PC's USB 2.0 port, and Windows will recognize it as a mass storage device. After you transfer images, music, video, or data into the preconfigured folders, the content is visible on the Wolverine. The model that I test-

Wolverine

a very impressive 120GB hard drive, putting it near the top of its class for capacity.

Measuring 5.3 by 2.8 by 0.9 inches and tipping the scales at 10.2 ounces, the ESP 5000 is suitable for toting in a bag, not a pocket. Despite its size, the device fit well in my hand. and I found its navigation con-

trols quite easy to use.

The ESP 5000's 3.6inch TFT LCD has an adjustable backlight and offers 320-by-240-pixel resolution. In my tests the display was certainly adequate, but it didn't wow me. Some competing models, including

Creative's Zen Vision, offer 640-by-480-pixel resolution.

THE ESP 5000 is too large to carry around in a pocket.

In my informal tests, audio files sounded okay through the Wolverine's bundled earbuds. In our lab tests, the ESP 5000 earned an overall rating of Good for audio quality.

Overall, I liked the attractively priced Wolverine ESP 5000 more for its agility as a photo storage and management product than as a media player. Put to the latter use, the ESP 5000 is a serviceable but not outstanding device.

-Melissa J. Perenson

ESP 5000

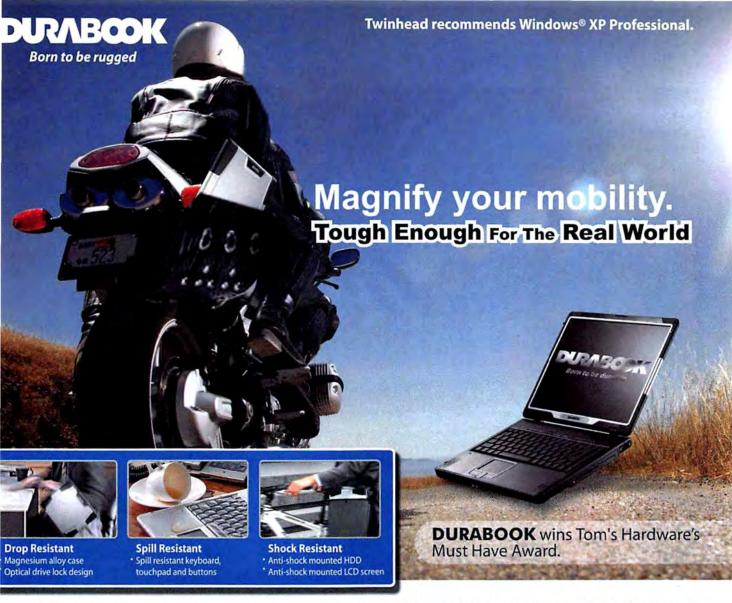
Wolverine Data

PCW Rating 71 Good

Device sports a pedestrian design, but offers appealing, photo-friendly features.

Street: \$500

find.pcworld.com/55634



DURABOOK D13RY/D14RY

Enjoy revolutionary performance and more with Intel® Centrino® Duo Mobile Technology in your DURABOOK D14RY.

ugged Outside:

- Rugged Spec. Drop / Shock / Spill Military 810 F Standard ecurity Feature:
- One smart card socket for identity protection & TPM 1.2 support erformance Inside:
- Intel® Centrino® Duo Mobile Technology
- -Intel® Core™2 Duo processor T7200 (4MB L2 Cache, 2.00GHz, 667MHz FSB)
- -Intel® Pro/Wireless LAN 2915ABG(802.11a/b/g)
- Genuine Windows® XP Professional Edition
- One serial port with optional external second serial port and one parallel port.
- DDRII 533 / 667 SDRAM, Max. 4GB
- · 13.3-inch WXGA / 14.1-inch XGA TFT Dura-Brite screen
- High speed Ethernet support 10/100/1000 Mbps
- Other models are also available.



Twinhead Corporation 48303 Fremont Blvd. Fremont, CA 94538, U.S.A.



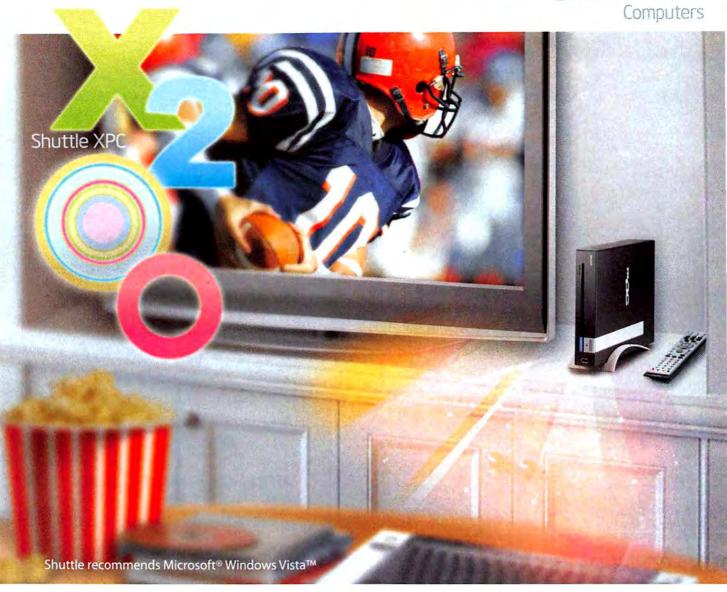


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New Recorders Offer High-Quality Video

ARE THE FORMAT wars finally over? Thankfully, almost. Compared with the hard-driveequipped DVD recorders we reviewed a year ago, twice as many now support both the +R and -R formats. The only exception here is the Toshiba RD-XS55, the priciest model on the chart at \$700.

All of the recorders delivered highquality video. Every model regardless of its cost (the units we reviewed range from \$340 to \$700) earned a Very Good score for recording quality in our tests.

We recorded a variety of content in four quality modes. and found the results almost indistinguishable among the

devices. And though we noticed some subtle differences in the artifacts that marred video recorded at the lowerquality modes, they weren't enough to affect our scores.

SKIP THE ADS

IF YOU DON'T like TV ads. select a recorder that can skip commercials. The Panasonic DMR-EH55S, Pioneer DVR-

...............................

Two recorders, the Lite-On and the Pioneer, have jukebox functions for playing music files and IPEGs. The Pioneer earned our Best Buy nod in part because it comes with a wonderful remote control and

> allows you to select multiple albums or a particular genre to play. The Lite-On, by contrast, doesn't let you play a selected folder or play by genre

or artist. The unit doesn't even display the title of the currently playing song.

works well as a jukebox; it

SPECIALTIES

THE PIONEER IS the only model here that can write to 8.5GB discs (both doublelayer DVD+R and dual-layer DVD-R), and it's one of three units that write to DVD-RAM discs. The Toshiba RD-XS55 does not write to DVD+RWand though it's the only device here with an ethernet port, you can't download video to its hard drive or display video on your TV over a network.

For scheduling recordings. the Panasonic and Toshiba (the two costliest models we tested) offer the TV Guide On Screen Interactive Program Guide, while the other models use VCR Plus codes.

-Eric Butterfield

ONLINE

FOR MORE INFORMATION about the DVD recorders reviewed in this chart, including details on how we tested them, go to find. pcworld.com/55675.

PIONEER'S LOW-PRICED DVR-640H-S offers a lot of features and writes to many disc formats, including dual-layer and DVD-RAM.

As for the recorders' features, however, they couldn't vary more-while some of the models offer a range of useful extras, others lag behind.

640H-S, and Toshiba RD-XS55 each offer a commercial-skip button on their remote controls for nixing jingles before they're stuck in your head.

	DVD RECORDER	PCW Rating	Performance	Features and specifications		
1	Pioneer DVR-640H-S Best \$399 BUY find.pcworld.com/55640	91 Superior	Remote control: Superior Interface: Yery Good On-disc editing: Yery Good	Write formats: DVD±RW DL/DVD-RAM Hard drive: 160GB VCR Plus		
	Bottom line: Great overall player has jukebox functions and lots of other features, plus an exceptional remote with a commercial-skip button.					
	Panasonic DMR-EH55S \$500 find.pcworld.com/55641	88 Very Good	Remote control: Very Good Interface: Very Good On-disc editing: Very Good	Write formats: DVD±RW/DVD-RAM Hard drive: 200GB TV Guide On Screen		
	* Bottom line: This easy-to-use player offers many features, including both G-Link and HDMI connections, as well as a commercial-skip feature.					
3	Philips DVDR3455H \$350 find.pcworld.com/55643	86 Very Good	Remote control: Superior Interface: Good On-disc editing: Good	Write formats: DVD±RW Hard drive: 160GB VCR Plus		
	► Bottom line: Sports stylish looks and is simple to use, but lacks a commercial-skip feature and won't copy from a DVD to the hard drive.					
4	Lite-On HD-A760GX \$340 find.pcworld.com/55642	85 Very Good	Remote control: Very Good Interface: Good On-disc editing: Good	Write formats: DVD±RW Hard drive: 250GB VCR Plus		
	Bottom line: The low-priced Lite-On has a large hard drive and jukebox features but lacks commercial-skip; it could be easier to use, too.					
5	Toshiba RD-XS55 \$700 find.pcworld.com/55644	79	Remote control: Fair Interface: Fair On-disc editing: Good	Write formats: DVD-RW/DVD-RAM Hard drive: 250GB TV Guide On Screen		

CHART NOTES: Ratings and prices as of 10/27/06. We judged image quality by watching a variety of movie and sports footage recorded at standard DVD resolution (720 by 480) in 8-, 4-, 2-, and 1-hour quality modes over S-Video. The source was a Pioneer DV-588A DVD player set to standard video sharpness (light on antialiasing of edges and lines) in order to eliminate each model's MPEG-2 decoding from the process,

Bottom line: This sleek and highly configurable machine provides many features, including HDMI and ethernet ports, but it's too complex.

I D E I LOVE TV. So I really wanted

to love the Slingbox, a nifty device that lets you watch and control your TV from any PC or Windows Mobile device with a broadband connection. The original version of the \$250 Slingbox Personal Broadcaster debuted in 2005. With the latest update, the company has expanded the Slingbox family to three devices: the \$180 Slingbox Tuner, which is designed for users who don't have a cable box or a DVR: the \$180

Slingbox AV, which connects to a digital cable box, a satellite receiver, or a DVR; and the \$250 Slingbox Pro, which supports HDTV. I looked at a shipping version of the Slingbox AV, which is most comparable to the original model. In general, the Slingbox AV was fun to use, but the device still left me wanting more.

The Slingbox AV is thinner and sleeker than its predecessor; the small red-and-black box will blend in nicely with most TV setups. You connect it to your video sourcewhether a cable box, a DVR,

or a satellite TV receiver-via the included S-Video or composite A/V cords. I connected the Slingbox AV to my TiVo Series2 device using S-Video.

to your router via the included ethernet cable. This is where I ran into my first major problem: My router is upstairs in my house, but my TV is down-



THE SLEEK SLINGBOX AV will fit in smartly with most TV setups.

I then attached the remotecontrol infrared cable (which allows the Slingbox to serve as your remote control) so that it was pointing at the IR sensor on my digital cable box. Linking the Slingbox to my TV took less than 10 minutes and was remarkably easy.

GET CONNECTED

FROM THERE, YOU hook up the Slingbox to your home network. (You need to have a router for the Slingbox to work.) The Slingbox attaches stairs. I ended up draping an extralong ethernet cable down the length of my stairs from my home office into my living room-what an eyesore. Sling Media sells optional powerline adapters for networking the device through the existing wiring in your home, but at \$100 they're expensive. I wish wireless networking had been built into the device.

PC PLAYER

ONCE THE SLINGBOX is connected to your network, you must install the SlingPlayer application on any PC you'll use to watch your TV. The installation is simple; within minutes the application was up and running on my computer, and had located the Slingbox on my network. With just a few clicks, I was connected to my TV. If you access your Slingbox from a computer that's not on your network, the process takes slightly longer, but is still easy: You enter the code for your Slingbox, and the software locates it for you.

The SlingPlayer app's setup guides you through the process of optimizing the video performance. The latest version of the software (1.4) offers video quality that the company says is improved by 300 percent. I can't say whether this is true, but even so I was not always impressed with the video quality. In the video I noticed pixelation and blockinessespecially when I used a computer that was not on my home network.

With this latest release. Slingbox adds support for mobile devices via the new SlingPlayer Mobile software, which lets you connect to your Slingbox from many Windows Mobile-based devices. You will need a high-speed Internet connection, though, and you will have to pay \$30 for the mobile version of the app-a disappointment considering you've already shelled out \$180 for the Slingbox.

Overall, I enjoyed the Slingbox AV, though I would have preferred to see some of the extras, like wireless networking and the mobile software, included in its price tag. But if you can't stand to be separated from your TV, the Slingbox is certainly worth a look.

-Liane Cassavoy

Slingbox AV

Sling Media

PCW Rating 83 Very Good

TV junkies will love this device, but too many of its features are sold as pricey extras.

List: \$180

find.pcworld.com/55600



THE SLINGPLAYER APP shows a replica of your TV's remote control.

HD DVD Notebooks Hit the Top of the Chart

TEST TWO LAPTOPS WITH Center HD DVD drives land in the desktop-replacement portion of this month's chart: HP's Pavilion dv9000t earns the Best Buy, and Toshiba's Qosmio G35-AV660 takes the second spot. Both fullfeatured notebooks delivered strong performance in our WorldBench 5 tests, and both units provide a slew of features and ports-including HDMI-to satisfy even the most demanding users. Another newcomer, the Alienware Area-51m 5750, turned in the best WorldBench 5



IDEAL FOR MULTIMEDIA: Toshiba's Qosmio G35-AV660.

score to date from a notebook.

Among the all-purpose models, Dell's Inspiron E1505 nabs the Best Buy. This wellrounded unit hits all the right notes, with fine WorldBench 5 performance, solid battery life, a great design, and a comfy keyboard. For a reasonable \$1186, it's a great deal.

-Kalpana Ettenson

ONLINE

FOR MORE INFORMATION on the laptops reviewed in this month's chart, including testing details, go to find.pcworld.com/55638.

	DESKTOP REPLACEMENT	PCW Rating Performance	Features and specifications				
1	HP Pavilion dv9000t Best \$2530 NEW BUY find.pcworld.com/55603	WorldBench 5 score: 117 Superior Overall design: Very Good Tested battery life: 2:36	2-GHz Core 2 Duo T7200 17.0-inch wide screen 8.0 pounds				
	III ana cano seo i a da a i dan	very Good lested battery life. 2:36	HD DVD-ROM/DVD±R DL/DVD±RW/-RAN				
\dashv	Bottom line. The dyboodt is a power		-2300 3 - 4500 23100 2				
	Toshiba Qosmio G35-AV660	• WorldBench 5 score: 109 Very Good	2-GHz Core 2 Duo T7200 17.0-inch wide screen				
2	\$3500 NEW	Overall design: Superior	• 10.3 pounds				
-	find.pcworld.com/55610	Very Good • Tested battery life: 3:00	. HD DVD-ROM/DVD±R DL/DVD±RW/-RAM				
	Bottom line: This model can't be beat for the ultimate notebook multimedia experience. It's big and heavy, but includes tons of extras.						
	Alienware Area-51m 5750	• WorldBench 5 score: 125 Superior	• 2.33-GHz Core 2 Duo T7600				
	\$3269 NEW	Overall design: Very Good	• 17.0-inch wide screen				
3	find.pcworld.com/55601	- Tooled battery Classes	8.8 pounds				
	inio.penoria.com/ 33001	Very Good - lested battery life: 1:52	DVD±R DL/DVD±RW				
	Bottom line: The 5750 is a fast gamer machine with superb sound. It lacks a TV-tuner option, however, as do many comparable systems.						
	Gateway M685-E	WorldBench 5 score:	• 2.16-GHz Core 2 Duo T7400				
	\$2044	109 Very Good	• 17.0-inch wide screen				
4	find.pcworld.com/55179	• Overall design: Good Very Good • Tested battery life: 3:41	• 8.3 pounds				
1	armon ogistron, ogunna		DVD+R DL/DVD±RW				
	Bottom line: This big small-office/home-office notebook isn't flashy, but it does include a nice high-resolution screen.						
	HP Compag nx9420	WorldBench 5 score:	• 2.16-GHz Core Duo T2600				
_	\$1899	101 Very Good	• 17.0-inch wide screen				
5	find.pcworld.com/52718	• Overall design: Good • Tested battery life: 3:34	• 7.4 pounds				
			DVD±R DL/DVD±RW				
	➤ Bottom line: Top performance and better-than-average battery life recommend this mobile workstation. ALL-PURPOSE LAPTOP						
	TELL ON OUR EN TO	• WorldBench 5 score:	• 2-GHz Core 2 Duo T7200				
	Dell Inspiron E1505	102 Very Good	• 15.4-inch wide screen				
1	Best \$1186 NEW	Overall design: Very Good	• 6.9 pounds				
•	BUY find.pcworld.com/55612	Very Good • Tested battery life: 5:32	DVD+R DL/DVD±RW				
	Bottom line: With "instant office apps" capability and fast performance, the E1505 is a good all-around notebook for getting work done.						
	HP Pavilion dv5000t	• WorldBench 5 score:	• 2-GHz Core Duo T2500				
	\$1274	98 Very Good	• 15.4-inch wide screen				
2	find.pcworld.com/53606	• Overall design: Very Good • Tested battery life: 7:07	• 7.35 pounds				
1	III Doorden (marrier a ma		DVD+R DL/DVD±RW				
	Bottom line: A great screen and long battery life make this speedy notebook a good desktop replacement.						
	Lenovo ThinkPad R60E	WorldBench 5 score:	• 2-GHz Core Duo T2500				
	\$1319	98 Very Good	• 15.0-inch screen				
3	find.pcworld.com/55117	• Overall design: Good Very Good • Tested battery life: 6:02	• 6.8 pounds				
	Portion line: A solid choice for mainstream users on a budget, the R60 has impressive battery life but a staid design.						
	7-1-20132000		• 1.73-GHz Pentium M 740				
	Lenovo 3000 C100	• WorldBench 5 score: 77 Fair	• 15.0-inch screen				
4	\$873	Overall design: Good Tested battery life 4:56	• 6.3 pounds				
	find.pcworld.com/52768	Very Good - Tested battery life: 4:56	• DVD±RW				
	Bottom line: The 3000 C100 has a basic design, but it supplies lengthy battery life and fairly robust features at an affordable price.						
	HP Pavilion dv2000t	- WorldRanch S score: 110 Superior	• 2.16-GHz Core Duo T2600				
	\$1789	WorldBench 5 score: 110 Superior Overall design: Very Good	- 14.1-inch wide screen				
5	find.pcworld.com/55175	• Tested hattery life: 7:08	• 6.1 pounds				
	and to the state of the state o	Good	DVD+R DL/DVD±RW				
		nd great battery life, the dv2000t is an excellent home a					

PDA/Phones From Nokia, T-Mobile Impress

PDA/PHONES

TEST MOVE OVER, TREO center and BlackBerry, New handsets are giving people who want phones with full keyboards and robust features more appealing alternatives than ever. In my tests, both a shipping Nokia E62 and a preproduction T-Mobile Dash proved quite capable at handling e-mail management, Web browsing, instant messaging, and more-at relatively moderate prices.

FULL-FEATURED PHONES

BOTH DEVICES ARE reminiscent in design of BlackBerry models with full keyboards; they are wider, but skinnier, than Treos. Both are quadband GSM phones that can roam worldwide (with the appropriate plan) and that also support GPRS and EDGE networks. Both have nicely domed keys that make typing as pleasurable as it gets on a thumb keyboard. And in PC World Test Center battery tests, each ran 10 hours (the maximum time we test for). In other respects, however, the two devices differ significantly from each other.

The Nokia E62 (\$200 with a two-year Cingular contract) delivers a lot of bang for your PDA buck. Based on the Symbian operating system, it comes bundled with an impressive collection of applications for e-mail (including out-of-the-box support for Microsoft Exchange and Lotus Notes), productivity tasks (spreadsheet, word processing, and presentation software), instant messaging

(AIM, MSN, and Yahoo), and playing MP3s and viewing images. However. the add-on software options are limited (compared with options for Windows Mobile- or Palm OS-based devices). because not all providers create applications that are compatible with the Symbian OS; in addi-

tion, you must make sure that any Symbian software you obtain can run on the E62, as not all Symbian software will operate on all Symbian devices.

The E62's browser did a first-rate job of rendering Web pages meant for larger screens, though load times weren't that impressive on Cingular's EDGE network (the E62 offers no support for the carrier's broadband-like HSDPA network). Navigation was intuitive, though the

unit lacks a dedicated key for accessing the main menu.

The silvery gray E62 boasts 60MB of user-available memory plus a miniSD Card slot for up to 2GB of additional storage. The device is less than three-quarters of an inch thick and weighs only a tad ware: The Windows Mobilebased device does not include any Microsoft Office-type productivity applications.

However, you get Outlookcompatible e-mail and calendar applications, as well as instant messaging software, Windows Media Player, and T-Mobile's MyFaves-a sort

> of icon-based speeddialer for up to five contacts to whom vou can make unlimited calls with the carrier's plans. Image quality in my test photos was only mediocre, and navigation in the Windows Mobile OS remains confusing.

When you're connected to a Wi-Fi network, browsing the Web is quite pleas-

ant, but when you're connected to T-Mobile's EDGE network, browsing is poky-and on either network, pages can be hard to read in Internet Explorer Mobile. The Dash comes with only 23MB of user-available storage, but its microSD Card slot offers additional storage options.

The Nokia E62's outstanding software bundle and topnotch keyboard make it an obvious winner for anyone who wants a handheld capable of PC-like productivity tasks-and who doesn't need applications from more popular handheld platforms. The Dash, despite its shortcomings, might appeal to styleconscious users seeking a multimedia-friendly Windows Mobile PDA/phone.

-Yardena Arar





THE T-MOBILE DASH (left) sports a svelte design but fewer apps, while the boxier Nokia E62 offers a better selection of productivity software.

over 5 ounces; its 2.8-inch, 320-by-240-pixel display is roomy by handheld standards. But the E62 looks positively boxy next to T-Mobile's superslim, snazzy black-and-silver Dash, which weighs in at a mere 4.2 ounces and is just half an inch thick.

E62

PCW Rating 84 Very Good

This affordable PDA/phone offers an outstanding keyboard and an excellent selection of software. Price: \$200 with a two-year Cingular contract

find.pcworld.com/55628

Dash

T-Mobile

PCW Rating 82 Very Good

This supersleek device will appeal to style-conscious users, but it lacks productivity apps. Price: \$250 with a two-year T-Mobile contract

find.pcworld.com/55629

GOOD LOOKS

IF ONLY THE Dash's other attributes lived up to its good looks. Though it includes an integrated 1.3-megapixel camera and Wi-Fi (both missing in the E62), the Dash (\$250 with a two-year T-Mobile contract) comes up short on soft-

Blu-ray Burner Boasts Solid Software Bundle

OPTICAL DRIVE

TEST THE PARADE OF enter rewritable Blu-ray Disc drives continues with the introduction of Plextor's PX-B900A. I looked at a shipping version of this drive, and it is impressive. At \$999, it costs more than competing models, but you get a well-rounded software bundle in the box.

The Plextor offering writes to most flavors of CD. DVD.

PX-8900A

Plextor

PCW Rating 88 Very Good

Internal Blu-ray burner offers an excellent software bundle, but its high price limits its appeal.

List: \$999

find.pcworld.com/55623

and Blu-ray Disc. The drive is rated at 2X speed for both single-layer 25GB and double-layer 50GB write-once BD-R and rewritable BD-RE. It also can handle 8X DVD±R. 8X DVD+RW, 6X DVD-RW, 5X DVD-RAM, 24X CD-R, and 16X CD-RW.

The InterVideo/Ulead software collection is one of the best bundles I've seen accompanying a Blu-ray Disc burner. You get WinDVD BD for watching Blu-ray movie discs, WinDVD for watching standard DVDs, Ulead Video-Studio 10SE for video editing and disc authoring, DVD MovieFactory 5SE for author-

PLEXTOR'S **DRIVE IS very**

> ing and burning video and photo discs, Burn. Now 1.5 for burning data discs, BD Disc-Recorder for burning highdefinition content directly

> from a disc, and Data-Add 2.0

for packet writing.

simple to install.

The drive's writeonce performance was in keeping with what we have seen from the other two Blu-ray Disc burners we've reviewed thus far. I-O Data's BRD-UM2/U and Pioneer's BDR-101A: The Plextor PX-B900A took 44 minutes. 35 seconds to master 22GB of data to BD-R, and 99 minutes to format a BD-RE and packet-write 22GB to disc-about the same as the other drives we've tested.

If you're eager for a Blu-ray Disc burner, the Plextor PX-B900A drive is a solid-albeit expensive-choice.

-Melissa I. Perenson

Virtualization App Makes Programs Portable

VIRTUALIZATION

WANT TO TAKE your favorite applications with you, wherever you go? MojoPac, a \$50 program you can use with Windows XP systems, allows you to create a PC of sorts from a portable USB 2.0 device, such as most iPod models or fast thumb drives.

I looked at a shipping version of MojoPac; setup took

just minutes. I first registered online and then downloaded the installer file directly to the 1GB USB thumb drive I had connected to my PC. I ran the setup file from there, logged in to MojoPac, and was up and running. MojoPac borrows the keyboard, monitor, and optical drives of the computer to which it's connected.

The MojoPac desktop ap-

pears in full screen and looks like your average Windows desktop. My first step was to customize it and install my favorite applications.

I then took my USB drive on the road. Once I hooked it up to a Windows XP PC. I received the option to view my MojoPac desktop just as I had on my computer back home.

All of the applications and data you use are saved to the MojoPac-equipped device, leaving no trace on the host PC. MojoPac's C: drive shows you the data on your portable device, as well as the basic Windows, Program Files, and Document and Settings folders. Though you can neither see nor access files stored on the host PC's hard disk, a wizard can help copy files over.

One potential sticking point

with MojoPac: The software requires administrator rights to the host PC. This could be a problem if you wanted to use it on a public computer for which you lack administrator rights. The company says this issue will be resolved in the next version of the software. which should be available by the time you read this.

MojoPac provides a handy solution for frequent travelers who miss using their musthave apps while on the road.

-Danny Allen

MojoPac 1.0.1

RingCube Technologies

PCW Rating 777 Good

Frequent travelers will like this clever program that allows you to create your own virtual PC.

List: \$50 per license

find.pcworld.com/55637



THE MOJOPAC DESKTOP looks like a typical Windows desktop.

GPS Devices Let the Music Play

G P S THE IDEAL DIGITAL travel companion would make sure that you're on the right track to your destination while also keeping you entertained, without weighing you down. Both Mio Technology's Digi-Walker H610 and Delphi's NAV200 qualify on all three counts. Of the two, I prefer the \$449 DigiWalker for its compactness and portability. even though the \$380 NAV200 is a top-notch GPS device at a relatively bargain price.

I evaluated a preproduction version of the DigiWalker and a shipping version of the NAV200. Both products come with maps of all 50 states and Canada preloaded, as well as points-of-interest databases containing millions of entries.

ASK OUR EXPERTS

Both devices also have an SD Card slot for loading audio, video, and image files.

SPOT-ON NAVIGATORS

THE FIRST TIME you use the DigiWalker's MioMap program to show your location or navigate to an address, the device establishes a GPS link in about 1 minute, and subsequently plots your position in just seconds. The NAV200 took slightly longer to grab onto its initial GPS signals, but it kept up with my driving very well afterward. The cradle included with each device for attaching it to the windshield of the car held each unit in place over some pretty rough roads.

Both products are small



BOTH GPS UNITS are compact enough to slip easily into your pocket, but the DigiWalker H610 (left) is smaller than the NAV200.

enough to fit comfortably in your pocket, but the NAV200 is noticeably larger than the DigiWalker: The former measures about 4.5 by 3.3 by 1.3 inches (with the retractable GPS antenna down); and the latter is only 3.5 by 2.3 by 0.8 inches (its GPS antenna is built in). The DigiWalker's 2.8-inch display is slightly smaller than the NAV200's 3.5-inch screen, but on both the driving directions are easy to spot (some of the other GPS information is too small to see at a glance, however).

BASIC MEDIA PLAYBACK

DESPITE OFFERING A convenient way for you to play MP3 and .wav audio files, and to view standard image and AVI video files, neither product provides the playback and management features of a stand-alone media player. For example, the DigiWalker has no external volume control, so you have to use the touchscreen controls in its Mio-Player Pro application to adjust the volume-though the unit ships with a pair of earbuds whose wire has volume controls and last-track/nexttrack buttons. The NAV200 requires that you plug in your own headphones. And while the external speakers on both devices are sufficient for spoken driving directions, they sound like vintage transistor radios when playing music.

The DigiWalker's small size makes it useful when you are navigating on foot. For many people, that one feature will be worth the \$69 premium. But if you're looking for an accurate and portable in-car GPS device, it'll be very tough to find a better bargain than the Delphi product.

-Dennis O'Reilly

External Laptop Storage

I WANT TO purchase some portable storage products strictly for use with a laptop. What would you recommend?

Tia Greene, via e-mail



Senior Associate Editor Narasu Rebbapragada responds: Look for a bus-powered USB 2.0 portable drive (based on a 2.5-inch disk size) in a capacity that matches or, better yet, exceeds the capacity of your note-

book's hard drive. That way, you'll have room to grow.

If you're using a laptop with low-power ports (likely USB 1.1 ports that do not support the 5V/500mA power spec), you'll probably need to use the drive with a Y-shaped cable that plugs into two USB ports (one for data and another for power). Western Digital's Passport comes in 60GB to 160GB sizes with encryption software and a neoprene case, and fits most of these needs. See "The Wide World of External Drives" on page 60 for more on the Passport and other models.

Need information or advice about a buying decision? Drop us a line at askourexperts@pcworld.com.

DigiWalker H610

Mio Technology

PCW Rating 84 Very Good

This diminutive GPS unit is worth the extra dough in cases where out-of-car navigation is important. Street: \$449

find.pcworld.com/55614

NAV200 Delphi

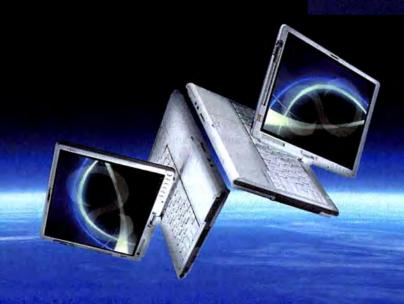
PCW Rating 83 Very Good

The NAV200 is easy to carry, and its features compare to those of devices costing \$100 more.

Street: \$380

find.pcworld.com/55615

Fujitsu recommends Windows® XP Tablet PC Edition.



Taking Tablet PC reliability to the ends of the earth. And beyond.

The LifeBook® T4200 Tablet PC takes reliability and convertibility farther than ever before.

The Fujitsu LifeBook T4200 Tablet PC with Intel® Centrino® Duo Mobile Technology proves just how far Fujitsu will go to deliver the most reliable products. It's manufactured in-house so we can maintain the highest quality standards. The Fujitsu LifeBook T4200 Tablet PC also features the industry's first bi-directional LCD hinge and a brilliant, 12.1" XGA display with wide viewing angles, so it's impressive any way you look at it. And whether you use its keyboard or powerful inking capabilities and pen-driven navigation, you get the best of both worlds. Go to **us.fujitsu.com/computers/reliability** for more information.

SUPERIOR CONNECTIVITY Wi-Fi, Gloabit Ethernet,

modern and optional Bluetooth 2.0

DUAL-FUNCTIONALITY

it's a notebook and a Taplet PC

BUILT-IN MODULAR BAY add a weight-saver, media drive or 2nd battery





THE POSSIBILITIES ARE INFINITI



AOL's OpenRide Software Hits a Few Bumps

BROWSER AOL TRIES TO keep things simple with OpenRide, a free, all-in-one app that encompasses a Web browser, an e-mail client, an instant messenger, and a media center. The product's features work as advertised, but they all contain too many hooks back to AOL's products and services.

OpenRide's components occupy four framed windows; each of these quadrants resiz-

OpenRide

AOL

PCW Rating 68 Fair

AOL's software features an innovative interface, but lacks key features like a spam filter.

Free

find.pcworld.com/55624

es dynamically as you access that particular application.

The AOL Explorer browser, which sits at the lower left, doesn't let you change the start page from AOL.com, but it does offer impressive builtin antiphishing utilities and optional parental controls.

The IM window-called the People Pane-uses the AOL Triton instant messaging client. Triton connects only to the AOL IM network, so users of competing IM networks will have to rely on third-party chat software. The Media Center window includes a media player and a menu of shortcuts to AOL's online video and streaming music services.

MailPane, the e-mail client, is the biggest disappointment:



OPENRIDE HAS A unique interface, but it isn't very customizable.

Though AOL accounts take advantage of AOL's excellent spam-blocking tools, Open-Ride offers no spam filter for POP3 e-mail accounts.

AOL deserves praise for

OpenRide's innovative interface. Unfortunately, it is more geared to pushing AOL products than it is to creating a smooth Internet experience.

-Tom Spring

Hard-Drive Backups Take the Express Lane

BACKUP SOFTWARE

WITH SO MANY users backing up to hard drives, it's a wonder EMC didn't start selling its supereasy-to-use Retrospect Express HD 2.0 backup program sooner. Previously available only when bundled with Maxtor's OneTouch hard drives, Retrospect Express HD has been redesigned and released on its own.

I tested a shipping version of the \$50 application and found it as simple and intuitive to use as its full-blown Retrospect Professional cousin is complex and obtuse. Unlike the Professional version, Express HD is single-job software: It does one full backup, and then provides incremental backups of a single data set.

Express HD makes getting into a backup routine a quick process. You configure your backups via an attractive stepby-step wizard and manage them through a system tray menu. I found that the lack of a traditional, option-filled configuration dialog box took a bit of getting used to; but in the end, Retrospect Express HD's keep-it-simple, set-itand-forget-it philosophy rapidly won me over.

The program allows you to schedule backups up to once a day-a sufficient frequency for most users-as well as to manage backups in a timeline

as restore points. The version I tested reliably handled the backup chores I threw at it.

The biggest problem I had with Retrospect Express HD is its price: \$50 is awfully steep for a program without disaster recovery. But cost aside. I have no qualms about recommending Retrospect Express HD to all who want to back up their systems with a minimum amount of fuss.

-lon L. Jacobi



RETROSPECT CONFIGURES BACKUPS via a step-by-step wizard.

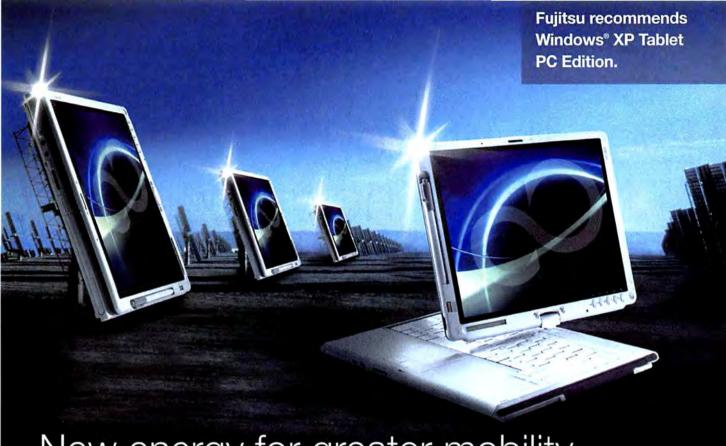
Retrospect Express HD 2.0

EMC

PCW Rating 87 Very Good

This reliable and extremely easyto-use backup program is more expensive than competing apps. List: \$50

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modern and optional Bluetooth 2.0

DUAL-FUNCTIONALITY

it's a notebook and a Tablet PC





THE POSSIBILITIES



media drive or 2nd battery



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Everything You Need to Know About WINDOWS

It's big, it's ambitious, and it's (finally) here.

We give you the bottom line on what Vista does better than XP, where it needs improvement—and how to perform the upgrade, step-by-step. BY PRESTON GRALLA

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HAS ANY OPERATING system been so maligned and so praised during a painfully long development cycle as Windows Vista? The march to Vista's launch has sometimes seemed longer than the Hundred Years War.

Now that Windows Vista is at hand, let the debating begin. Is it a look into the future of operating systems, or the last, dying gasp of an old way of computing? Should you upgrade your system to meet its considerable hardware needs? Is it anything other than Mac OS X Lite?

Some may complain that Vista isn't as revolutionary as it should be after five years of work. But you don't judge an OS by the amount of time developers have put into it. You judge it by how useful and how pleasurable it is to work with—and in these respects, Windows Vista is a clear winner. It's beautiful, sports much-improved security, offers superb networking capabilities...and maybe most of all, it's just plain fun to use.



Should I upgrade from XP to Vista?

IF YOUR hardware isn't up to Vista's demands, you may want to wait until you buy a new PC. But if your hardware can handle it, consider upgrading if an elegant interface is important to you, or if you're frustrated with XP's security or networking features.

That's not to say it's perfect-far from it. Some may view the new interface as little more than fluff or be turned off by the intrusive User Account Control feature. Expect a long-running discourse between Vista lovers and Vista haters. On which side will you fall? There's only one way to find out-by taking a tour of the operating system.

The Look

THE MOMENT WINDOWS Vista starts, some of its biggest changes are in plain view: It is distinctive and eye-catching. Colors are subtler and the overall look less cartoonish than Windows XP's.

Dare I say it's Mac-like? In fact, it is. Microsoft has always stolen from the best. Key to a lot of what's new in Vista is the much-anticipated Aero interface-but to use it, you'll need adequate hardware and one of the pricier versions of the OS. (For details on these editions, see "How Much Will Your Vista Upgrade Cost?" on page 89.)

Within Aero, windows maximize and minimize with a kind of visual "swoosh." The <Alt>-<Tab> command for switching between open windows now invokes Windows Flip, which displays thumbnails of open windows. Flip 3D (<Windows>-<Tab>) ups the ante, stacking windows so that you can flip through them like playing cards.

Some may say this is mere eye candy that won't affect your real productivity. Maybe so. But it makes life at the keyboard fun again. And for my money, that's right up there with productivity.

Two other notable new interface elements are the Sidebar and Live Thumbnails. Hover your mouse over a minimized window on the taskbar. and a thumbnail pops up with its contents, plus the program and document name or Web site.

I'm particularly fond of the Sidebar gadgets, interactive applets that display information-RSS feeds, stock tickers, clocks, weather, and so on. Vista ships with about a dozen of them; there are more online. While similar to Google Desktop Gadgets or Yahoo Widgets, they're actually more like the Mac's Gadgets in that they're built directly into the operating system and so may use its underlying architecture. For example, one gadget displays RSS news feeds you've subscribed to using Internet Explorer 7's RSS Reader.



The Start menu is more compact and useful; and Control Panel is more logically organized than in XP-it has several new "Centers," such as the Network and Sharing Center and the Sync Center (which handles functions of ActiveSync desktop software you previously had to install for Windows Mobile devices).

But for some odd reason several differently named links bring you to the exact

same location. For example, in Control Panel. Network and Internet, if you click 'Network and Sharing Center' or 'View network status and tasks' or 'Set up file sharing', each of these choices will take you to...the Network and Sharing Center. This can make using Control Panel feel like getting directions from a dotty old aunt.

Security

FOLLOWING YEARS OF justifiable criticism about Windows security, Microsoft had promised that Vista would be the most secure Windows ever. This goal largely appears to have been met, though at some cost to the user: The OS's nagging User Account Control feature has been roundly lam-



WINDOWS FLIP 3D stacks your windows in three dimensions and lets you flip through them like cards.

basted as the Mother of All Windows Annoyances. Other security improvements are less irritating.

XP's version of the Windows Firewall protected you only against inbound threats: If malware infected your PC and attempted an outbound connection, Windows Firewall could do nothing about it.

Vista's firewall includes outbound filtering, though that's not readily apparent by looking at the Windows Firewall Settings tab. To configure outbound connections, you must launch the Windows Firewall with Advanced Security screen by typing wf.msc at a command prompt. We didn't test the firewall's effectiveness in our near-final prerelease copy of Vista, but the presence of outbound filtering could eliminate the need for a third-party firewall for at least some users.

Which version of Vista should I get?

LET'S START with the one you shouldn't get: Home Basic, which lacks the Aero interface and other features that make Vista exciting. Home Premium (\$159 upgrade, \$239 full) will do for most people who don't need to connect to corporate Windows servers. Those using their PC mostly for business will be fine with the Business edition (\$199/\$299). However if you want to connect to your company's servers during the day and record TV shows at night, you'll need to pony up for the top-ofthe-line Ultimate (\$259/\$399). (See find.pcworld.com/ 55744 for more of our

VISTA VERSIONS

How Much Will Your Vista Upgrade Cost?

HERE'S THE LOWDOWN on the unprecedented array of flavors Microsoft's new OS comes in.

WINDOWS VISTA EDITION	Home Basic¹	Home Premium ²	Business ³	Ultimate 4
Features				
Windows Defender and Firewall	•	•	•	•
Aero and Windows Flip 3D		•		•
Windows Mobility and Tablet PC Support		•	•	•
Windows Meeting Space		•	•	•
Windows Media Center		•		•
Business Backup and Networking, Remote Desktop			•	•
BitLocker Drive Encryption				•
Price	TO BUS			
Suggested full price:	\$199	\$239	\$299	\$399
Suggested upgrade price:	\$100	\$159	\$199	\$259

FOOTNOTES: 1 Allows in-place upgrades from XP Home. 2 Allows in-place upgrades from XP Home Media Center. 3 Allows in-place upgrades from XP Home, Media Center, and Professional. Allows in-place upgrades from XP Home, Media Center, Pro, and Tablet PC.

Vista FAQ.)

Should I wait for PCs with Vista preinstalled or just buy a Vista-capable PC with an upgrade coupon?

WAIT, if you can. While upgrading a Vista-capable machine shouldn't present any hardware problems, there may be other pitfalls. The coupon (which some manufacturers will charge you for) may not cover the version of Vista you're interested in. To get the best upgrade experience (see the Q&A on page 91), you'll want to back up your data and wipe applications off your hard drive, and then reinstall them. And upgrading Windows is just never fun. For more on Microsoft's coupon program, plus a lively discussion, go to find.pcworld. com/55651.

Vista's Security Center is not much different from XP's, with a similar confused interface. Clicking the green button next to the firewall, the automatic updating, and so on does absolutely nothing-just as in XP. But links on the screen's upper left side let you configure security settings.

Windows Defender, Vista's bundled antispyware software, was impressive when PC World tested it under its former name. Windows Anti-Spyware. Its Software Explorer, for example, shows you programs that run at startup and ones currently running, plus details including whether an app is classified as malware. If so, you can take actions such as disabling or removing it. Like other antispyware apps, it provides real-time protection and performs daily system scans at a time you choose.

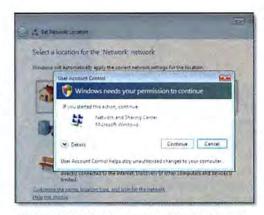
New, less visible features include Network Access Protection, which lets network administrators set requirements a PC must meet to connect to the network (current antivirus signatures, for example). BitLocker Drive Encryption, available only in Vista Enterprise and Ultimate, enables hardware-based lockdowns of a PC and its data.

Because so many attacks on Windows exploited security holes in Internet Explorer, Microsoft has beefed up Internet Explorer 7's defenses. Like other IE 7 features in Vista, most of these security improvements-including phishing site filters and address bars in pop-ups-duplicate those in the Windows XP version of the updated browser (see our review at find.pcworld.com/55741). One big difference: In Vista, IE 7 runs by default in the new Protected Mode, which keeps it from changing system files or settings.

But User Account Control (UAC) has riled more Windows Vista testers than all other features combined. UAC prompts you to type in a password or click OK before taking certain actions-for example, turning the Windows Firewall on or off, adding or removing user accounts, or even running some applications. You sometimes get a warning: A small shield appears next to links or options that will summon the UAC prompt if clicked.

What's the point of this annoying virtual nanny? First, it protects against malware running unchecked. If your PC gets infected and the malware attempts to perform a dangerous action such as turning off your antivirus program or the firewall, UAC will stop it cold. Second, UAC can protect you against yourself, keeping you from making changes that could harm your computer.

That's all well and good, but Microsoft has gone



BEFORE YOU CAN do something potentially harmful, User Account Control asks for confirmation. This helps protect against malware, but can also be a giant pain.

overboard with this protection. Why should you get a UAC prompt when you try to change Windows' font size, or your PC's name? Because of UAC, using Vista can at times become a herky-jerky kind of experience, with so many annoying pop-ups coming at you that you want to scream "Stop!"

In fact, you can stop the prompts by turning off UAC entirely. Go to Control Panel - User Accounts and Family Safety. User Accounts, click the Turn User Account Control on or off link, and you'll send that nanny into the virtual ether.

Of course, if you do turn off UAC, then you have no one but yourself to blame if a piece of malware does get in and take over your system.

AT A GLANCE

Five Things We Love

AERO: Transparent windows, tasteful animation, elegant design: Sure, it looks like a Mac, but why not steal from the best?

SEARCH: Fast, smart, and you can create virtual search folders to revisit your searches with a single click.

NETWORK MAP: Finally, Microsoft gets networking right; it's a great way to get an overview of your network and its devices.

WIRELESS NETWORKING: Connecting to multiple wireless networks and hotspots is a simple affair.

SECURITY: You get a firewall with outbound filtering, a better browser, and a lot under the hood offering better protection.

Finding Files

WINDOWS EXPLORER HAS a new thumbnail preview pane, as well as a details pane that shows a file's name, size, user-defined tags, and other info.

Like Internet Explorer 7, Windows Explorer has a toolbar instead of a menu (though you can get the menu back by pressing the Alt button). That toolbar can be disconcerting, however, because its contents vary depending on the folder. Image editing tools appear in a folder full of photos, and document-sharing tools appear in a folder with Word documents. If a folder contains multiple file types, Vista takes its best guess, and it's not always on target. To change the folder type and toolbar, right-click the folder, choose *Properties*, click the *Customize* tab, and then choose a type.

Search is built into every level of Vista. It's on the Start menu and the upper right-hand side of Windows Explorer. Vista uses indexing: It begins searching the index as you type keywords, so results appear instantly and narrow as you type.

Vista's Search finds documents, e-mail, applications, and even Web sites you've visited. An advanced search tool lets you filter results by date, file size, author, tags, and location. Vista accepts Boolean searching. You can even search other PCs

AT A GLANCE

Five Things We Hate

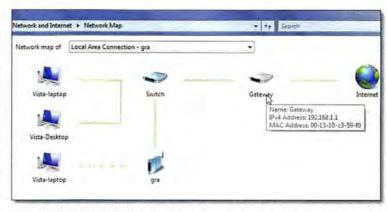
1 USER ACCOUNT CONTROL: Who needs a virtual nagging nanny?

2 BACKUP: How could Microsoft have built such a brain-dead application?

3 WINDOWS MEETING SPACE: With worthless chat and no telephony, this isn't a virtual meeting I'd want to attend.

4 pared to spend a bundle for hardware upgrades-or a new computer.

5 PRICE: \$399 new, or \$299 for the upgrade to Windows Ultimate? No operating system should cost that much. And the cheapest version, Basic (\$199 full, \$100 upgrade), isn't worth the trouble.



VISTA'S NETWORK MAP displays all of your devices and provides information about them, such as the MAC (a unique hardware ID) and IP addresses for gateways.

on your network, if you have read permission. And you can save your searches so that you can perform them again with a single mouse click.

But Search works differently in different places: You get different results with the Start search box than with the Windows Explorer search box. Worse yet, by default Search will index and search only a small portion of your hard disk—mainly your \Users\username folder. If you want Search to look for files elsewhere, you must click the 'Include non-indexed, hidden and system files (might be slow)' box in the advanced search options. As advertised, this can be painfully slow.

What to do? Go to Control Panel System and Maintenance Indexing Options and hand-pick folders to put into the index.

Other problems include a Search pane in Windows Explorer that seems to vanish and appear again for no apparent reason. There is, in fact, some logic involved, but it's as convoluted as the DaVinci Code. Suffice it to say that you won't be using this Search pane anytime soon.

Networking

UP TO NOW, Microsoft had never done a stellar job of integrating networking capabilities into Windows. Just try synchronizing Offline Folders in Windows XP, for example—I dare you.

Windows Vista, however, presents your network as a natural extension of your PC. The OS helps you configure a network, share files, manage multiple networks, and more—all with a minimum of fuss. Vista supports all the usual network technologies, including ethernet, Wi-Fi, and Bluetooth.

The new Network and Sharing Center puts network tools and information right at hand. Click View Full Map, for example, and you'll see a diagram showing all PCs and devices on your network, including printers, switches, and gate-

Should I do a clean install or just upgrade my Windows XP machine?

IN OUR experience, clean installs of Vista-in which you first back up all your data, and then wipe your hard drive or partition-are faster and less troublesome. Although you'll have to restore your data and reinstall all of your applications after you finish, it's worth it to avoid the hassles that can crop up with upgrade installations.

Will my existing antivirus software work on Windows Vista?

MOST LIKELY not. Vista is sufficiently different from previous versions of Windows that antivirus software written for the older versions won't work on it. Major antivirus software vendors such as Symantec have announced plans for Vista-compatible versions.

ways. Click or hover over a device icon to get more details, such as IP and MAC addresses.

Vista handles wireless network connections deftly: Simply click the network icon in the system tray, click Connect or disconnect, and you'll see a list of nearby wireless networks. Hover your cursor over any one to see details such as Wi-Fi type (802.11b or g, say) and security protocol, if any.

Vista saves settings for networks you use frequently so you can automatically connect to them when you're in range. You can even specify which take precedence if more than one is available.

Not all networking features are hunky-dory. Windows Meeting Space is supposed to let you hold virtual meetings over an ad-hoc networkbut has a well-nigh worthless chat module, no voice capabilities, and no whiteboard tools. Doesn't sound like any virtual meeting I want to attend.

The Sync Center, designed to help you sync files and folders between networked PCs and devices,

is a bit of a mess as well. If you want to do anything other than perform basic syncs, you may throw up your hands and walk away.

Multimedia

WINDOWS VISTA'S MULTIMEDIA capabilities are only moderately more advanced than Windows XP's. Windows Media Center is no longer a separate edition; its features are built into Vista Home Premium and Ultimate. Windows Movie Maker sports a much-improved interface.

The new Windows DVD Maker makes creating self-playing DVDs with movies and pictures exceedingly easy. But if you're serious about burning DVDs, you'll still want a third-party program. For example, DVD Maker can't import QuickTime files, something most third-party apps do.

Similarly, the new Windows Photo Gallery offers easy-to-use tools for organizing, printing, e-mail-



ing, burning, or making a movie from pictures and photos. Simple tools for adjusting color and exposure, fixing red-eye, and the like won't replace your favorite photo editing program; but as a free add-in, the Photo Gallery is good enough.

Built-In Tools

WINDOWS VISTA INCLUDES a decidedly mixed bag of built-in apps and utilities. The new Backup tool, for example, may be one of the worst applications ever packed into an operating system. It doesn't let you choose to back up individual files or file types-you have to back up every file in a generic group of files, such as "Documents" or "Pictures." This can make for much larger backups than you might have intended. In contrast, the Time Machine backup feature in the coming Mac OS 10.5 (Leopard) will do incremental backups.

Not all built-in applications and system tools are this disappointing. Windows Calendar, for example, goes well beyond the basics: You can create group calendars for family members who use your PC, and publish your calendar on the Web. The utility is compatible with the iCalendar standard for syncing appointments with Outlook and other iCalendar-compliant calendars.

Windows Mail, the e-mail program previously known as Outlook Express, has received a face-lift that makes it easier to use. Windows Contactsthe new Address Book-integrates well with Windows Mail and the Windows Calendar.

Additionally, Vista offers support for several new hardware technologies, including some that depend on Vista-aware devices. Windows Rally, for example, is a set of technologies designed to make networkable devices easier to set up and connect. Windows SideShow will allow manufacturers to include a secondary display-an LCD in the lid of a laptop, say, that can display information such as recent e-mail, phone numbers, and so on-even if the laptop is off or in sleep mode. These auxiliary displays can also be built into keyboards, remote controls, PDAs, and cell phones.

Vista also includes technologies intended to enhance performance. The two that sound most intriguing are SuperFetch and ReadyBoost.

SuperFetch builds on the prefetch capability in Windows XP, which preloads frequently used apps into memory to speed up launch times. Microsoft says SuperFetch not only knows which applications you use most frequently, but which ones

you're most likely to use on different days of the week and at different times of day.

ReadyBoost lets you use a USB 2.0 flash drive to augment system RAM; it improves performance by working in concert with SuperFetch. Instead of having to search your relatively slow hard drive for programs and files, Vista can keep them close at hand on your speedy flash drive. This also frees up RAM Vista would otherwise use to prefetch data.

ReadyBoost works only with USB 2.0 flash drives that support certain data read and write speeds: we'll be testing this feature with shipping code.

The Bottom Line

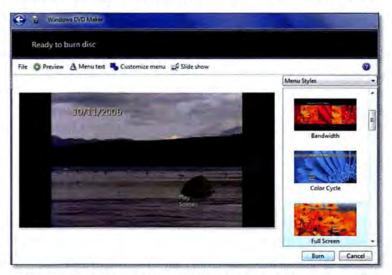
ALL IN ALL, Windows Vista is a great leap forward for the operating system, with a much-improved, far more useful (and pleasurable) interface; faster, better search; beefed-up security that's a big improvement over Windows XP with SP2; and far, far better networking. There are some clunkers in there, though, such as the annoying UAC feature.

But the pluses make you forget the minuses. I've been using Windows Vista alongside Windows XP for months, and every time I have to switch back to a Windows XP-based PC, I feel like I've moved from a modern automobile back to a Model T. Sure, the old model will eventually get you where you're going-but the ride won't be as much fun.

Preston Gralla is the author of more than 35 books, including Windows Vista in a Nutshell and Windows Vista Pocket Reference (O'Reilly Media).

I've heard all kinds of horror stories about the Windows Vista license forcing me to buy another copy if I later upgrade my PC. Is this true?

NO. IT'S NOT. Initially, Microsoft placed some pretty severe restrictions on Windows Vista usage if you upgraded your computer, but the company backed off after an outcry. Windows Vista licensing is now exactly the same as the licensing for Windows XP: You can transfer your license to a new or rebuilt PC as often as you like as long as you uninstall the OS on your old one.



WINDOWS DVD MAKER, new to Windows Vista, makes it easy for anyone to create self-playing DVDs, but don't expect many fancy features-they're not there.

VISTA: THEUPGRADE

Ready to make the switch to Windows Vista?

We'll show you what kind of system you'll need, which edition you should choose, and how to install Mlcrosoft's latest OS.

BY SCOTT SPANBAUER

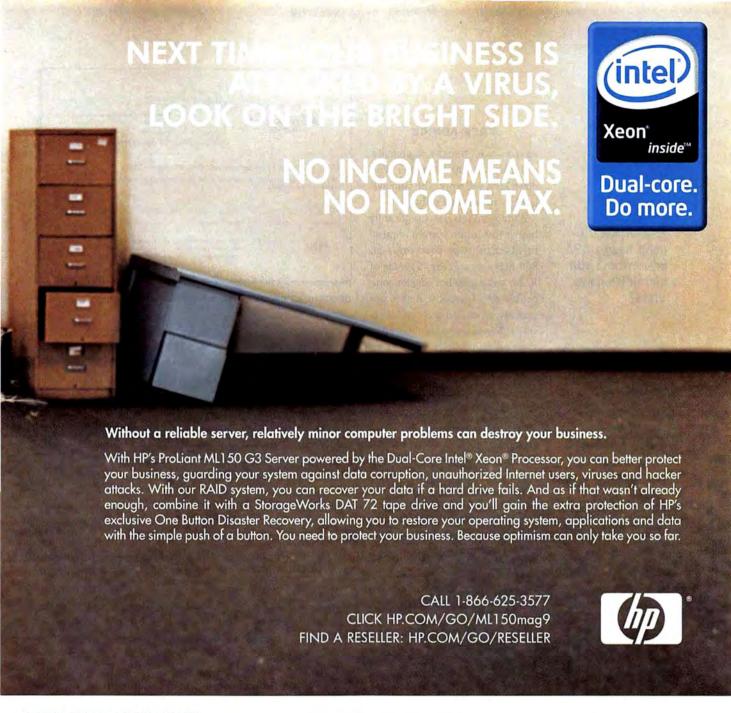
versions of Windows in many ways (see "Everything You Need to Know About Windows Vista" on page 86 for more on its features). If your hardware is fairly new, but you're not satisfied with Windows XP, upgrading will

definitely make sense-eventually.

I installed Release Candidate 2 of Windows Vista Ultimate Edition, the latest prerelease version as we went to press, on several PCs ranging from a brand-new machine powered by a dual-core Athlon 64 X2 processor, down to a three-year-old 1.4-GHz Pentium M notebook. Many of



went bad, they went really bad. The final version of Vista will likely provide a smoother transition, but I'd still recommend waiting a few weeks after Vista's announced January 30th general release before you make the move. Check user forums to see what problems other people have faced, give your device manufacturers time to release new drivers, and generally allow things to settle down a bit.



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What if I don't have a DVD drive? Can I still install Windows Vista?

YES, but you'll have to request replacement installation media from Microsoft. As we went to press, the company had not yet determined the price or method of requesting installation CDs. (See our full FAQ at find.pcworld.com/ 55744.)

FREE ADVICE

BEFORE YOU DECIDE to upgrade, you'll want to know whether Windows Vista will work with your system's hardware and software.

Windows Vista has significantly higher minimum system requirements than its predecessors—an 800-MHz processor, 512MB of RAM, and a graphics adapter compatible with DirectX 9. Before you upgrade, download and run Micro-

soft's Windows Vista Upgrade Advisor (find. pcworld.com/54172), which scans your system and prepares a report listing the components and software Vista will like, and those it won't.

Upgrade Advisor then presents you with a list of problems—such as insufficient memory or disk space, or incompatible software—and a list of tasks you need to do before and after upgrading. On one system I tested—a Toshiba Satellite M35 notebook—it suggested I free up 11GB of disk space and uninstall a couple of Toshiba utilities. It also suggested that I check Windows Update for new drivers for my wireless adapter after installation, and warned that most of the remaining Toshiba utilities, plus Symantec's Partition Magic, Apple's QuickTime, and Zone Labs' ZoneAlarm firewall, might not work as expected in Vista.

If a critical component or peripheral is going to give you trouble, you may want to hold off on upgrading or invest in a Vista-ready alternative.



WINDOWS EASY TRANSFER can help migrate files and settings from an old PC.



UPGRADE ADVISOR CAN help smooth the installation process.

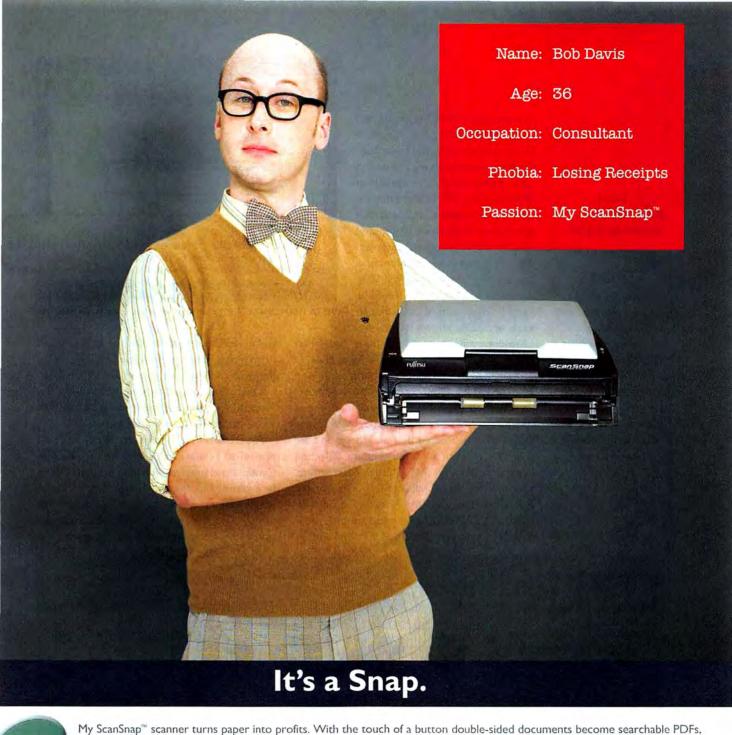
START INSTALLING

YOUR FIRST TOUGH decision: Which version to get. See the chart "How Much Will Your Vista Upgrade Cost?" on page 89 for a breakdown of what comes with which version. Depending on whether you qualify for an upgrade and on which upgrade path you take, your new Windows version could cost anywhere from \$100 to \$400.

Assuming you have a 64-bit PC, you'll also have to choose whether to install the 32-bit or 64-bit version of your chosen Vista flavor. In my informal tests, the 64- and 32-bit installations were hard to tell apart in normal use. Still, many users may want to stick with the 32-bit Vista for the time being. The performance benefits of 64-bit computing are hard to see unless you perform certain data-intensive tasks like CAD or video and image editing. And while some hardware makers, notably nVidia, have been great about providing both 64-bit and 32-bit drivers for their devices, historically 64-bit drivers have been harder to come by. The traditionally more plentiful 32-bit drivers run only under the 32-bit version, and 64-bit Vista won't let you install unsigned drivers that haven't been through Microsoft's quality assurance process, further diluting the pool of available drivers.

Whether you're upgrading your existing Windows installation—which should leave applications and files in place—or opting for a clean installation, there's always a chance that your files could vanish in the process. Back up your data before you begin, using Windows Easy Transfer. A link to this utility appears when you insert your Windows Vista installation disc in a Windows 2000 or XP machine. You can also use Easy Transfer to migrate your data and settings directly from your old machine to a new Vista computer.

The simplest way to achieve a clean install is



business cards become contacts. It's easy to install, comes loaded with the software you'll need and fits perfectly where my inbox used to be. Instead of managing paper, I'm managing my business. \$50 rebate available for a limited time. Plus, enhance your ScanSnap experience with Rack2-Filer, the revolutionary e-filing tool from Fujitsu. For more information about Rack2-Filer, ScanSnap scanners and our full line of scanner products, call 800-831-8094 ext. 83A5 or visit Fujitsu at http://us.fujitsu.com/scanners/83A5.

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THE POSSIBILITIES ARE INFINITE



back out of installing Vista?

IF YOUR in-place upgrade fails (as several of ours did) Windows Vista will restore your previous Windows version automatically. But once Windows Vista is successfully installed, there is no easy way to return to your previous operating system.

to boot your PC with the install disc; you'll be able to choose where to install your new OS, and from there the process moves along at a decent pace. I performed clean installs of Windows Vista RC2 three different times on two systems, and each time the process lasted about 30 minutes, requiring only occasional intervention on my part to select a time zone, create a user account, and tell Windows whether the system would be part of a home network, a work network, or a public environment.

Windows will adjust your security settings based on the type of network you'll use. Vista disables just about every kind of file and printer sharing when you identify your network as a public one. So when you hop on to the Wi-Fi connection at your local coffee shop, you won't be able to browse to any other networked PCs, and they won't see your PC as part of a local workgroup. Selecting home or work networks enables this last setting, which Microsoft now calls network discovery, but leaves other file and printer settings unchanged.

Once you have Vista up and running, you'll probably want to tweak many of the same settings



VISTA TIGHTENS SECURITY settings when you use a public network.

that made Windows XP or 2000 fit you like a glove. Be prepared to look around for a while-most of the same configuration options are still available, but many have moved or been renamed. Display Properties, for example, used to be accessible with a simple right-click of your desktop.

Vista replaces the Display Properties link with one called Personalize. Clicking it opens a new Control Panel interface with links to familiar interface settings dialogs, including Screen Saver, Mouse Pointers, Theme, and good old Display Settings. A new link at the top of the screen lets you control the window color and transparency set-

HARDWARE UPDATE

The Easiest Upgrade of All: Buying a Vista PC

NAVIGATING THE MINEFIELD of a Windows upgrade can be arduous. So arduous, in fact, that lots of smart people time their PC purchases around the release of a new Windows version: They simply buy a PC with the updated OS preinstalled and copy files over.

According to several major PC manufacturers we spoke with, including Alienware, Dell, Gateway, and Sys Technologies, you'll be able to purchase

a PC with Windows Vista preinstalled on the same day that the software hits the shelves, which Microsoft says will be in late January 2007. All four vendors report that they'll make the switch immediately across their retail product lines.

If you can't wait that long, you can still have your new PC for



BUYING A PC before Vista? Look for an Express Upgrade logo.

the holidays and Windows Vista too. Many PC vendors, including Alienware, Gateway, and Sys, are offering upgrade coupons with systems sold this fall that entitle you to a free Vista upgrade in the new year. But watch out: If you opt for an Alienware PC with Windows XP Home Edition, for example, you'll be in line for an upgrade to Windows Vista Home Basic, which lacks the Aero interface. At press time, HP said its up-

grades would be free, and Dell plans to offer free or low-cost upgrades from XP Home to Vista Basic (upgrades of XP Professional and Media Center Edition-to Business and Home Premium, respectively-will be free). So read the fine print. And remember: Any OS upgrade has the potential for pitfalls.

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QC2 headphones (left) New QC3 headphones (right).

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Say I choose the Home Premium version of Vista. Can I upgrade to Ultimate Edition later?

YES, If you're using the 64-bit version of the OS, you won't be able to switch to 32-bit (or viceversa) as part of the upgrade, but Microsoft plans to add a Control Panel applet that will allow you to upgrade to a more feature-rich edition of Windows Vista, presumably using a credit card. Pricing and other details were still undecided as we went to press.

tings for the Aero interface.

The perennially useful Device Manager now gets its own link in the Classic View of the new Control Panel. Device Manager is still the quickest way to fix any driver problems you encounter: Just fire it up, double-click the offending gadget, select the Driver tab in the resulting dialog box, and click the Update Driver button to search for a new driver on the computer or via the Internet. There was

nothing terribly wrong with the way this procedure worked in Windows XP, and happily, it remains mostly unchanged in Windows Vista.

View Sort By Refresh Paste Paste Shortcut New Personalize

A NEW 'PERSONALIZE' customization option replaces Windows XP's familiar Display Properties link.

MIXED RESULTS

THOUGH PC WORLD'S sample of three PCs was small, it yielded a surprising variety of installation experiences. I performed a clean install of both the 32-bit and 64-bit versions on an AMD 64 X2 machine, and found the two installations nearly identical. While formal testing will have to wait until final versions of Windows Vista are available, I was pleasantly surprised by the OS's snappiness. I opened, closed, minimized, maximized, resized, and dragged windows all over the screen with no visible jerkiness or hesitation. Internet Explorer served up YouTube videos over a cable modem connection without a hiccup, and Media Center played a Led Zeppelin DVD flawlessly.

The only major glitch I ran into related to hardware support: Both the 32-bit and 64-bit versions failed to identify the PC's Asus PCI wireless network adapter. A quick look on the Asus Web site revealed no Windows Vista driver for the card; until the company writes one, users of this card will have to settle for a wired ethernet network connection.

A clean install of the 32-bit Windows Vista RC2 on the Athlon XP 3200+ system was nearly as uneventful—almost everything worked just fine with the exception of the

motherboard's on-board audio system. As with the other desktop PC, the machine's performance felt at least as crisp running Windows Vista as it did running Windows XP. It appears that fears of Vista's Aero interface being a dog are groundless, at least for day-to-day computing tasks.

But I ran into serious trouble attempting an inplace upgrade on the Toshiba Satellite M35 laptop. After a good 20 minutes of looking at the system, the installer declared that I must first uninstall Roxio's Easy CD Creator 6.1—and it then aborted. I removed the offending software, and tried again. This time the installation cranked away for more than an hour, before hanging completely.

Fortunately, when I hit the reset button, the boot menu gave me the choice to roll back the incomplete installation, and within a few minutes, I was happily booting into Windows XP once again.

A clean install proceeded normally on the same system, and I found that Windows Vista again performed similarly to Windows XP.

CONCLUSION: BE PATIENT

days with a new OS, which is why you'd be wise to let the die-hard upgraders serve as guinea pigs when Vista lands on store shelves at the end of January. Windows Vista looks online for updates during the install process, which should allow Microsoft to smooth installation wrinkles for later adopters. The new locations for familiar commands will take some getting used to, but Vista's new tools, improved security, and eye-catching interface may just be worth the trouble.

Scott Spanbauer is a PC World contributing editor and the Internet Tips columnist.



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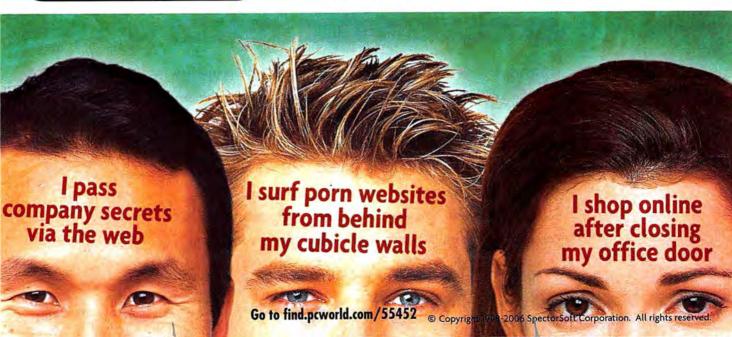
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The Best PC Deals

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RICHARD BAGULEY | TESTING BY WILLIAM WANG

THINK YOU HAVE to bust your budget for a peppy new Center desktop PC? Think again. Sure, you can mortgage the farm for a fancy \$4000 gaming rig; but if your needs are modest, you can buy a decent, stylish system for a whole lot less. For this review we started with two basic assumptions: Each system had to cost less than \$1000, and the price had to cover both the PC and a monitor.

Now let's be real. You won't get Corvette performance at a subcompact price. Similarly, you won't obtain tip-top computing

GOOD-BYE, BEIGE BOX: Not all low-cost PCs sacrifice style and performance for price. From left, sub-\$1000 systems from Lenovo, Dell, and Shuttle.







00





performance from a low-cost machine. But that doesn't mean that you have to settle for junk or that you can't prepare for the future: All but one of our cheap PCs is rated by its maker as Vista-capable (see "Can Cheap PCs Handle Microsoft's Windows Vista?" on page 107 for more).

PUT TO THE TEST

OUR TESTS SHOW that most of these low-end machines provide acceptable performance-they're fine for business or

home, so long as you keep your expectations reasonable. Most earned a PCW Rating of Good or better, because in our rating system, performance is just one of four major factors that affect the overall rating (the others are price, features, and design).

That said, a clear winner emerged in our roundup: The Micro Express Micro-Flex 66B (\$999) delivered performance scores we expect from much costlier systems. Our number two pick, Dell's attractive and uncommonly narrow Dimension C521, turned in relatively modest performance scores and for that reason is far more typical of the systems in this price

range than the powerful MicroFlex 66Bbut it also costs a whopping \$270 less.

The PC World Test Center evaluated each system on our WorldBench 5 test suite, which times how long various common tasks in popular applications take. The results plotted a dramatic arc, ranging from the laggardly score of 66 for the Ajump Prive 336 (\$499) to the Micro Express MicroFlex 66B's stunning 148.

We also ran an informal multitasking test to see how these PCs behaved when asked to go beyond single-tasking basics. The multitasking test consisted of playing back a DVD movie while encoding an MP3 file in the background-a twopronged operation that can stress systems costing far more than \$1000. To our surprise and delight, only three machines choked on this test, all of them models that were equipped with slower, singlecore processors: the Dell Dimension E521 (\$489), which carries a 1.8-GHz AMD Sempron 3400+ processor; the Shuttle XPC X100 (\$749), which packs a 1.6-GHz Intel Celeron; and the Ajump, another 1.6-GHz Intel Celeron unit. These three PCs were unable to play the test



DELL'S DIMENSION E520 and E521 look identical but perform differently.

DVD movie smoothly while encoding the music file. (The Ajump system couldn't perform this test at all because its MP3encoding software crashed repeatedly.)

STICKING TO A BUDGET

ALL OF THE PCs we reviewed are configured not to exceed a budget of \$1000not including mail-in rebates, but including any point-of-sale instant savings that were available at the time of our review.

At this price ceiling, you'll usually get a machine equipped with a medium or low-end processor from Intel or AMD. Such CPUs run slower and have smaller caches than their higher-end cousins do. A typical sub-\$1000 computer doesn't provide much memory, either: Six of the systems we tested came with just 512MB of memory, an amount that results in a noticeable performance hit when you run more than one program at once.

How much difference can a faster processor and increased memory make in performance? A lot, in our experience.

Take the Shuttle XPC X100: We tested this model in two configurations that were identical except as regards its CPU

and memory. The \$749, 1.6-GHz Celeron M 420based system equipped with 512MB of memory earned a WorldBench 5 score of 79; the \$1323, 1.6-GHz Core Duo 2050based model with 1GB of memory posted a 92over 16 percent higher.

Inexpensive desktops usually offer modest-size hard drives. Most of the units we tested had 80GB or 160GB drives, which can fill up quickly when required to store digital images, video, or music files. But four of our models had 250GB drives: the CyberPower Gamer Ultra 7500SE (\$999), the Dell Dimension E520 (\$989), the top-ranked Micro Ex-

press, and the Shuttle G2 2200 (\$999).

The graphics capabilities of cheap PCs tend to be elementary, too: Nine of the systems we reviewed employ integrated graphics. Though such graphics continue to improve, their deficiencies will be exposed by a moderately demanding 3D game or by most installations of the new Windows Vista OS. Only two systemsthe Micro Express machine and the Cyber-Power computer—handily maneuvered through our graphics tests that run the games Doom 3 and Far Cry, scoring well above average for the cheap PCs we tested. A third, Dell's Dimension C521, barely scraped through the tests at a playable level. The other systems produced results we rated as unplayable and unsatisfactory for serious or even casual gaming.

Naturally, there are exceptions to these general rules. The HP Media Center TV m7690y-which just squeaks past our price filter at \$1000-is the only system we tested that came equipped with an integrated TV tuner; it was also the only machine in the group to provide a DVD burner with LightScribe disc labeling.

Two systems-the Dell Dimension E520 and the CyberPower Gamer Ultra 7500SE-had dual optical drives (a duallayer DVD burner and a DVD-ROM drive). The Micro Express model was the only value system to include 2GB of memory.

The rudimentary configurations offered

by some of our low-cost PCs clearly compromised their performance. Notably, the Ajump Prive 336 (\$499), the Dell Dimension E521 (\$489), and the eMachines T5048 (\$600) struggled to complete some benchmark tests. Such systems may suffice for surfing the Web, editing uncomplicated documents, sending e-mail, or running educational software. But for

FEATURES COMPARISON

CHEAP PCs ACE SOME TASKS, STRUGGLE WITH GAMES

SHEER, RAW PERFORMANCE power propelled the impressively configured Micro Express MicroFlex 66B to the top of our chart.

	VALUE DESKTOP PC	PCW Rating	Performance	Features and specifications	Bottom line
1	Micro Express MicroFlex 66B Best \$999 Find.pcworld.com/55657	83 Very Good	WorldBench 5 score: 148 WorldBench 5 rating: Superior Overall design: Good Graphics: Fair	2.4-GHz Core 2 Duo E6600 250GB drive capacity 17-inch ViewSonic VP720b LCD 256MB ATI Radeon X1600	System outperformed our other value models by a wide margin; it's a great choice for media editing or gaming.
2	Dell Dimension C521 \$729 Find.pcworld.com/55658	74 Good	WorldBench 5 score: 95 WorldBench 5 rating: Fair Overall design: Good Graphics: Poor	2-GHz Athlon 64 X2 3800+ 160GB drive capacity 17-inch Dell E177FP LCD 128MB ATI Radeon X1300	The inexpensive C521 is a solid performer; its compact design makes it a great fit for tight spaces.
3	Dell Dimension E520 5989 find.pcworld.com/55659	73	WorldBench 5 score: 106 WorldBench 5 rating: Good Overall design: Good Graphics: Poor	1.86-GHz Core 2 Duo E6300 250GB drive capacity 17-inch Dell E177FP LCD 256MB nVidia GeForce 7300LE	Midpriced Windows Media Center PC has strong performance and solid features for the price.
4	CyberPower Gamer Ultra 7500SE \$999 Find.pcworld.com/54566	73 Good	WorldBench 5 score; 98 WorldBench 5 rating: Fair Overall design: Good Graphics: Fair	2-GHz Athlon 64 X2 3800+ 250GB drive capacity 19-inch Optiquest O9b LCD 256MB EVGA e-GeForce 7600GS	Gaming system for buyers on a budget provides fairly good performance at a very attractive price.
5	HP Media Center TV m7690y \$1000 find.pcworld.com/55660	73	WorldBench 5 score: 108 WorldBench 5 rating: Good Overall design: Good Graphics: Poor	1.86-GHz Core 2 Duo E6300 160GB drive capacity 19-inch vs19 LCD 64MB nVidia GeForce 7300LE	Media-centric system performed very well for a value PC; with its TV tuner, it could replace your living-room DVR.
6	Dell Dimension E521 \$489 find.pcworld.com/55661	72 Good	WorldBench 5 score: 80 WorldBench 5 rating: Poor Overall design: Good Graphics: Poor	1.8-GHz Sempron 3400+ 80GB drive capacity 17-inch Dell E177FP LCD nVidia GeForce 6150 LE	Cheap PC came bundled with a good 17- inch LCD monitor, but its low performance matches its low price.
7	Lenovo ThinkCentre A60 D3U \$949 find.pcworld.com/55662	71	WorldBench 5 score: 95 WorldBench 5 rating: Fair Overall design: Good Graphics: Poor	2.2-GHz Athlon 64 X2 4200+ 160GB drive capacity 19-inch Lenovo L192 Wide LCD nVidia GeForce 6100	Solid business system includes innovative features such as a data encryption chip and remote management.
8	eMachines T5048 \$600 find.pcworld.com/55663	70 Good	WorldBench 5 score: 77 WorldBench 5 rating: Poor Overall design: Good Graphics: Poor	3.06-GHz Pentium 4 524 160GB drive capacity 17-inch eMachines eView 17F3 CRT ATI Radeon Xpress 200	Inexpensive system contains low-end components that delivered lackluster performance.
9	Shuttle XPC G2 2200 \$999 find.pcworld.com/55664	70 Good	WorldBench 5 score: 95 WorldBench 5 rating: Fair Overall design: Good Graphics: Poor	• 2.4-GHz Athlon 64 3800+ • 250GB drive capacity • 17-inch Shuttle XP17 LCD • YIA Chrome9 IGP	PC offers reasonable performance and some expansion options in a package ideal for small spaces.
10	eMachines T5212 \$870 find.pcworld.com/55665	69 Fair	WorldBench 5 score: 79 WorldBench 5 rating: Poor Overall design: Good Graphics: Poor	2.66-GHz Pentium D 805 200GB drive capacity 19-inch eMachines E19T5W LCD ATI Radeon Xpress 200	Nicely priced system was a mediocre performer; its 19-inch wide-screen LCD offered disappointing image quality.

CHART NOTES: Prices and ratings are as of 11/6/06. For our latest value-PC rankings, see find.pcworld.com/55754.



THE EMACHINES T5048 and T5212 discreetly hide front-mounted ports under a flip-up door.

demanding tasks like playing challenging 3D games, you'll want to purchase a betterperforming (albeit more-expensive) PC.

THE ART OF THE DEAL

YOU'LL SEE PLENTY of ads touting all sorts of PC deals. But as we discovered, a deal isn't a bargain if the resulting ultracheap system doesn't deliver the goods. A superlow price, such as the \$359 listed for Dell's Dimension C521 (find.pcworld. com/55648), usually reflects a bare-bones configuration. Such a PC may lack a monitor, use a very slow processor, or pack as little as 256MB of memory (below our minimum for inclusion in this story). For example, when we added a monitor and a few basic upgrades to the Dell Dimension C521, its price climbed to \$729.

Sometimes the advertised price reflects a mail-in rebate or two. eMachines and HP, for instance, offer mail-in rebates of \$50 to \$100 on the systems we reviewed here. Because we declined to deduct mailin rebates from the bottom-line price, we often encountered price creep from the computer's lowest advertised price.

Savvy shoppers should keep an eye on deals, as bundles and special promotions change daily. One trend we've noticed: When one rebate or instant-savings program ends, another invariably pops up to take its place. To stay on top of the latest deals, visit sites like DealCatcher.com and TechBargains.com, which aggregate sales and coupon codes for PCs (and more).

Some manufacturers offer preconfigured PCs online with few options-or retail configurations with no optionsfor less money than the customized versions command. Whether you take this route or you buy a custom-configured system, we advise against skimping on core components such as memory, the hard drive, graphics, or even the DVD burner, with the intention of upgrading those components later. Instead, buy the components you want from the get-go, since they usually cost no more as part of a configuration than if purchased independently. Another benefit: The PC manufacturer will install them for you-and cover them under the system's warranty.

Our tests show that you don't have to spend a fortune to get a pretty good PC. Less than \$1000 will fetch a system that can comfortably handle a wide range of tasks. Gamers and video enthusiasts may

still prefer to lay out the extra cash for a higher-end machine; but for most purposes, a system like our Best Buy, the Micro Express MicroFlex 66B, or even our number two model, the Dell Dimension C521, is all the PC you need.

Micro Express Micro Flex 66B

Best THE FASTEST OF the cheap PCs we reviewed, the \$999 MicroFlex 66B is a great value. It managed an impressive WorldBench 5 score of 148. The MicroFlex 66B carries a speedy 2.4-GHz Core 2 Duo E6600 processor and 2GB of memory-the only system in our roundup to do so. It also came configured with an ATI Radeon X1600 graphics card. This machine produced the best graphics performance of any cheap PC on our gaming tests, making it a good choice as a versatile, low-cost gaming desktop.

Our only major complaint involves the system's paltry 380-watt power supply, which could become overloaded if you add several hard drives or optical drives.

Dell Dimension C521

THE \$729 DIMENSION C521 is skinnier than a typical midsize tower PC. Set up vertically, the well-designed case has a width of just 4.5 inches. Even so, it retains a modicum of expansion room, including three open expansion-card slots (for halfheight cards only). Our system included a five-in-one memory card reader.

The C521 configuration that we tested had a 2-GHz Athlon 64 X2 3800+ dualcore processor, 1GB of memory, and an ATI Radeon X1300 graphics card loaded with 256MB of video memory. That combination powered the C521 to a creditable WorldBench 5 score of 95-more than adequate for tasks like word processing, Web browsing, and even video and image editing-and to fair (and playable-quality) results on our gaming graphics tests.

Dell Dimension E520

THE DIMENSION E520 may look like its cousin the E521 on the outside, but inside it's a very different beast. It has a faster processor, more memory, a bigger hard drive, and a dedicated graphics card that makes it a more desirable proposition for a wider range of activities. But it's also more expensive at \$989 versus \$489.

The system contains a 1.86-GHz Intel Core 2 Duo E6300 processor and 1GB of RAM, and it rolled to a respectable World-Bench 5 score of 106. Still, the E520 isn't for gamers. Its nVidia GeForce 7300LE graphics board generated hit-or-miss performance on our graphics tests; and the games in our tests, while playable at 1024 by 768 resolution, were just barely so.

CyberPower Gamer Ultra 7500SE

PRICED AT \$999, CyberPower's Gamer Ultra 7500SE parlayed its Athlon 64 X2 3800+ processor and 1GB of RAM into a WorldBench 5 score of 98. The PC's gaming performance was even better. Sparked by an EVGA e-GeForce 7600GS graphics board with 256MB of RAM, it had a frame rate of 76 frames per second on our Doom 3 test, at 1280-by-1024-pixel resolution.

MEDIA-FRIENDLY PC: HP'S m7690v offers handy access to its ports, which include audio-visual inputs.

An array of blue LEDs illuminates the case's curved plastic front, but unfortunately the case looks and feels fragile and cheaply made. Other quibbles: The 19-inch View-Sonic Optiquest Q9b LCD monitor that came bundled with our system rendered our images and games in dark and dull colors; and the LCD had a VGA input, generating fuzzier video than a DVI connection (which the system supports) would have.

HP Media Center TV m7690y

THOUGH IT LANDS at the upper extremity of our cheap PCs price scale, the \$1000 m7690y justifies the difference in cost with an attractive feature set. The system runs Windows XP Media Center Edition and includes a TV tuner for recording

(1)

television shows. One of the m7690y's many design conveniences is its multitude of front-mounted ports, including a set of video and audio inputs. The system's integrated audio decoder supports up to 5.1 channels of surround sound and offers S/PDIF inputs and outputs for connecting the PC to a satellite or >

UPGRADES

CAN CHEAP PCs HANDLE MICROSOFT'S WINDOWS VISTA?

MICROSOFT'S LATEST OPERATING system, Windows Vista, carries a whole new set of system requirements.

> But how can you tell whether the cheap PC you're buying is capable of handling

> > either the basic or the premium flavor of Vista? (For more details on the different versions of Vista and on the various features that the new OS offers, see "Everything You Need to Know About Windows Vista," page 86.)

Systems that bear Microsoft's Vista Ready logo meet the company's minimum specifications for running Vista. The machines we reviewed for

this story came to us too early to have received the Vista Ready logo; nevertheless, all but the Ajump are designated by their vendors as Windows Vista-capable (indicating that the system can run simpler versions of Windows Vista, such as Windows Vista Home Basic, which excludes Vista's most attractive visual effects). The presence

of the Windows Vista Premium Ready logo means that the PC can handle enhanced versions of Vista (none of the systems reviewed here carried that indicator either, but Micro Express says that its computer will handle Vista Premium).

UPGRADE TIMETABLE

WE EXPECT TO see the first Vista-equipped units in January 2007. But that doesn't mean you have to wait until then to get Vista: If you bought a Vista Ready or Vista-capable system after October 26, 2006, your PC manufacturer should have an upgrade program available. Depending on the version of Windows that you have loaded on your system, you'll get Vista Basic (at least) or something better. The fees vary: Some vendors are offering upgrades for free-not including shipping and handling costs-or for a modest charge.

Keep in mind, though, that even if you buy a Vista Ready system, the logo alone doesn't promise an easy installation; nor does it guarantee how well the system will run Vista. See "Vista: The Upgrade" on page 94 for a discussion of what you can expect if you're upgrading to Vista from Windows XP, and for details on PC makers' coupon plans.

cable TV box. Also up front: a drive bay for HP's optional removable hard drive.

The m7690y earned a mark of 108 on our WorldBench 5 test suite, the secondbest score among models reviewed here. But subpar graphics performance makes this system a poor choice for gaming.

Dell Dimension E521

THE DIMENSION E521 (\$489) is the leastexpensive computer we tested for this roundup. However, its slow performance

and underwhelming specs severely limit its appeal. Configured with a single-core 1.8-GHz AMD Sempron 3400+ processor and 512MB of RAM, the E521 attained a modest World-Bench 5 score of 80adequate for basic tasks like Web browsing or word processing, but insufficient for running games. It also choked when we tried to play a DVD movie and convert an MP3 file simultaneously; the video simply became unwatchable.

The E521 that we reviewed for this roundup came equipped with a 17-inch LCD monitor,

Dell's E177FP. Though we welcomed the inclusion of a slim LCD at this extremely low price, we found the monitor to be just adequate, with undistinguished color.

Lenovo ThinkCentre A60 D3U

LENOVO'S \$949 A60 D3U lacks the frills of a consumer system, but it has features that an IT manager might find useful. A built-in data encryption chip safeguards data on your hard drive, software protects your passwords and encryption keys, and Lenovo's ThinkVantage management program allows you to configure and check the system remotely. The A60 D3U's WorldBench score of 95 is more than adequate for most general business tasks.

An unexpected bonus on the PC configuration we tested was the inclusion of Lenovo's first 19-inch wide-screen monitor, the L192 Wide. This cleanly designed display rendered sharp, bright images.

eMachines T5048

THE EMACHINES T5048 achieves its low price (\$600, or \$500 after subtracting the mail-in rebates available at the time of this review) by using entry-level components. The T5048 garnered a WorldBench 5 score

POWER ON THE CHEAP: Systems from Micro Express (left) and CyberPower.

of 77-slightly lower than the mark posted by the similarly priced Dell Dimension E521. Games were unplayable, as well.

At this price, eMachines bundles its 17inch eView 17F3 CRT monitor with the T5048. The monitor produced adequate image quality, but images and movies lacked sharpness and had dull colors.

The system came with a dual-layer DVD burner, a multiformat card reader, and a 160GB hard drive. One limitation: The audio output supports stereo speakers only.

Shuttle XPC G2 2200

JUST 7.2 INCHES high and 7.8 inches wide, the \$999 XPC G2 2200 saves space; but as you'd expect, it lacks room for expansion. The shoe-box-size case houses a 2.4-GHz AMD Athlon 64 3800+ CPU and 1GB of RAM, a combination that helped power this system to a creditable World-Bench 5 score of 95-fast enough to support some video and image editing.

Unfortunately, this system can't handle even casual gaming. The G2 2200 barely completed some of our graphics tests, and it failed two others. Our test model used an integrated VIA Chrome 9 IGP graphics chip; you can add a dedicated graphics card

> via the machine's single PCI Express x16 card slot. The system offers both coaxial and optical digital audio outputs (the PC supports up to 5.1 surround-sound audio). Shuttle's portable, 17inch XP17 LCD monitor produced strong colors and good shadow detail.

eMachines T5212

COMPARED WITH ITS bargain-basement cousin the T5048, the T5212 has better specs, a better feature set (a larger hard drive, for example), and a higher price. The T5212 costs \$870; in addition, \$50 mail-in rebates

are available for the monitor and the PC.

Although the T5212 delivers solid features for the money, it is constrained by disappointingly lethargic performance. It scored 17 percent lower on our World-Bench 5 tests than the Dell Dimension C521, which costs about \$140 less. With its dual-core 2.66-GHz Intel Pentium D processor (a CPU older than processors of the Core 2 Duo chip family) and 1GB of memory, the T5212 ambled to a sluggish WorldBench 5 score of 79-sufficient to handle tasks like e-mail and Web surfing, but not video or image editing.

Richard Baguley is a writer based in the San Francisco Bay Area.

Smart PC Shopping Lips

REGARDLESS OF YOUR BUDGET, GET THE MOST COMPUTER FOR YOUR BUCK.

SPRING FOR RAM. Plenty of memory means a faster, more flexible system, especially when you run more than one task at a time (say, recording a TV show while watching a DVD). You need a minimum of 1GB; upping the ante to 2GB will give you the oomph to run several programs at once without slowing your PC down.

BUY LOTS OF STORAGE. Hard drives are like kitchen cabinets: You need more space than you anticipate—and whatever space you do have, you'll fill. Accommodate your data and your growing collection of digital media (those 10-megapixel images add up-trust us!) with a large hard drive. We recommend 120GB as a bare minimum; 250GB for a PC with a TV tuner, since recorded TV shows take up a ton of space; and 500GB or more if you have a penchant for archiving multimedia.

GO DUAL CORE. Though you may pay a bit more for a dual-core system (typically a premium of \$20 to \$50), dual-core CPUs like the Intel Core Duo and the AMD Athlon X2 are faster and more flexible than their single-core cousins.

BUY A BIG LCD. Some vendors bundle cheap PCs with a low-cost CRT monitor, but don't fall into that trap. An LCD monitor causes less eye strain, and takes up less space on your desk. On the other hand, if your system comes bundled with a baseline 15- or 17-inch LCD, try to upgrade to a larger screen. A typical 19-inch display costs \$100 more than a 17-inch model. If you buy a PC with a DVI graphics port (as is common when you get a dedicated graphics card), be sure to select a monitor that has a DVI connection; you'll get a sharper image by going all-digital.

BE READY TO RUN MICROSOFT VISTA PREMIUM. At the least, buy a system that carries a Windows Vista Ready logo or that meets Vista's minimum specifications (find.pcworld.com/55590). But we recommend that

> you aim higher: A PC bearing the Windows Vista Premium Ready logo is configured to meet the demanding specs that Vista's top-end features (such

as its Aero interface) will require.

GO ONLINE TO PCWORLD.COM for the latest on desktop PCs, including our Top 10 Value Desktop PCs chart (find.pcworld.com/55712), our Top 10 Power Desktop PCs chart (find. pcworld.com/55713), and our desktop PC buying guide (find.pcworld.com/55619).

PC MAKEOVER

EASY UPGRADES

NOT READY TO buy a new PC? Give your existing PC a boost with these simple upgrades.

ADD MEMORY. Upgrade your system memory to 1GB (\$100 and up), and your PC will run noticeably faster.

Jump to 2GB, and it will sing.

ADD DISK STORAGE. A second hard drive (\$50 and up) will prolong the useful life of your computer-and give you more room to store digital media files. Internal drives are the thriftiest route; for more flexibility, purchase an external model or a network-attached drive. See find.pcworld.com/55591 for the latest hard-drive rankings.

IMPROVE GRAPHICS. Make games and graphics applications run faster by graduating from integrated graphics to a dedicated AGP or PCI Express 16X graphics card (\$60 and up). Check our latest rankings for value (find.pcworld.com/55596) and mainstream (find.pcworld. com/55594) graphics cards.

GO WIDE-SCREEN, Increase your screen's usable real estate with a new wide-screen monitor. It will give you more room for work and play, and will simplify DVD or television playback. See our Top 5 chart of 20-inch wide-screen LCDs (find.pcworld.com/55597).

AMP UP YOUR SOUND. Most inexpensive PCs rely on cheap integrated audio that supports stereo audio only. Add a PCI sound card (from \$30) to achieve multichannel audio for DVDs or games.



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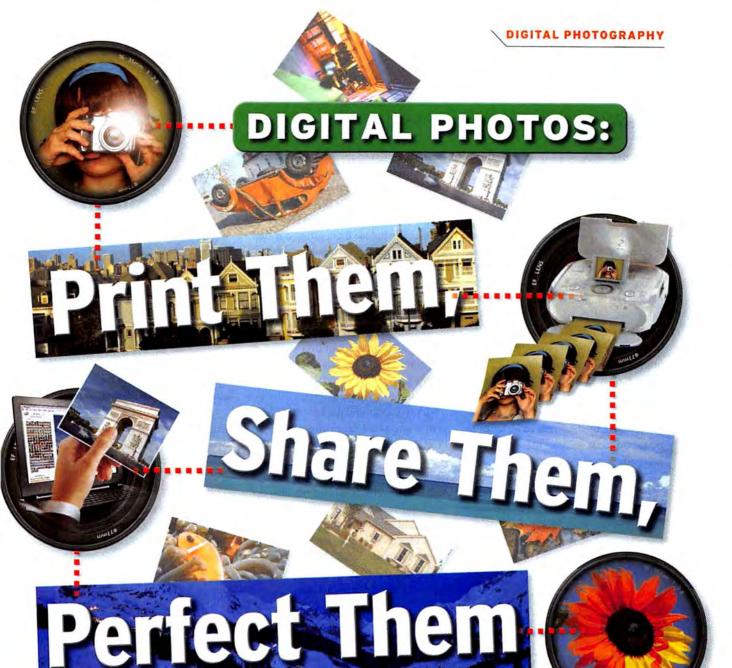


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You have more pictures than ever. These **snapshot printers**, **photo sites**, and free **editing tools** will help you make the most of your images.

SNAPPING A SHOT is just the first step—afterward you want to edit it, make prints of it, and of course show it off. Find out which portable snapshot printer is tops for picture-printing portability, and which

of the most popular online photo sharing sites has the best features and the best-looking prints. Lastly, take your pick of the finest free photo editing programs for organizing and touching up shots.

BY PAUL JASPER . TESTING BY TONY K. LEUNG

Snapshot Printers: Portable Convenience

FOR IMMEDIATE RESULTS, nothing beats the convenience of having your own photo printer. Small and lightweight snapshot printers hook up easily to your camera, or read from your media card, to print 4-by-6-inch photographs on the spot, no PC required. All of the models we evaluated-the Canon Pixma Mini260 (\$200), Epson PictureMate Snap PM240 (\$200), HP Photosmart A616 (\$180), Kodak EasyShare Photo Printer 500 (\$150). Lexmark P350 (\$130), and Sony Picture Station DPP-FP55 (\$150)-are good for bringing along on short trips.

The Canon Pixma Mini260 earned the top spot because it's easy to use and prints quickly. The most affordable printer we tested, the Lexmark P350, failed to make the chart because of its mediocre print quality and slow performance.

SO-SO PRINT QUALITY

NONE OF THE printers we tested wowed us with their picture quality on our four test photos, particularly when we judged them alongside prints we ordered from online services. The Canon Mini260 was



the only printer of the group to attain a score of Good for our color shots, while only the HP A616 and Sony DPP-FP55 rated a Good mark for black-and-white images. The Canon's colors were generally accurate but too light, giving our shot of a colorful mountain meadow a washedout appearance. Prints from the HP unit were a little grainy and varied in color quality; in particular, skin tones seemed overly bronzed. Areas of continuous tone, as in skin and sky, looked good in the Sony model's prints, but they exhibited dull colors and some hazy details-the meadow scene appeared as if we were seeing it through dirty glasses.

Narrow banding on the Epson PM240's prints detracted from the otherwise bright, natural colors in our meadow scene. The Kodak EasyShare 500's print quality was inconsistent, with smooth tones and sharp details in our race car print but reddish-pink skin tones and blown-out highlights in portraits. Also, the Kodak is limited to pictures no larger than 3.5MB, which isn't hard to surpass if you use the high-quality setting on many of today's digital cameras.

YOUR COST PER PRINT

THE COSTS OF printing at home have become more competitive with the prices of prints ordered online. When we calculated per-print costs based on the prices of ink-and-paper bundles from the printer vendors (generally your cheapest option), Epson's bundle proved most economical with 25-cent prints from a \$38 pack containing 150 sheets. HP's package runs 29 cents per print with a \$35, 120sheet bundle, while Canon's prints cost 30 cents each from a \$30, 100-sheet pack.

You might end up with some leftover ink from the bundles made for inkjet printers, but dye-sublimation printers always use the same amount of ribbon.

THE EPSON PICTUREMATE SNAP PM240 has a well-planned, easy-to-use design and the least expensive per-print cost.



THE CANON PIXMA Mini260's smooth, iPod-like controls, fast print speed, and good-looking prints made it our Best Buy.

Both Kodak's \$47, 160-sheet ribbon-andpaper bundle and Sony's \$35, 120-sheet pack end up costing 29 cents per print.

FROM CAMERA TO PRINTER

THESE PRINTERS OFFER you a range of options for getting pics off your camera. They all support PictBridge, which allows you to connect your camera with a cable and select pictures to print using the camera's LCD and buttons. They also have media slots for reading images straight from your camera's media card, but you'll need to make sure a given printer supports your card format.

All the models can read SD Card and Memory Stick, but the Sony DPP-FP55 can't read anything else, and the Canon Mini260 needs a third-party adapter to read xD-Picture Card. Most of the printers need an adapter for smaller card types such as Memory Stick Duo and miniSD. For our speed and quality tests, we printed images from an SD Card.

Except for the Canon, all can print images stored on a USB thumb drive. The Kodak EasyShare 500 has a slot for an optional \$100 Wi-Fi card, letting you print from a wireless-enabled camera or notebook PC; the Wi-Fi card supports only the slower 802.11b protocol, but that should add just a few seconds to the time for turning out your photos. The Kodak also has built-in Bluetooth for sending photos from a camera phone or Bluetooth device, while the Canon has a built-in IrDA port that lets you beam images from infrared-enabled camera phones and PDAs. For the Canon, Epson, and HP units, you can purchase optional Bluetooth adapters, which cost \$30 to \$80.

PRINT WITH EASE

MOST OF THE printers are a snap to operate, thanks to their color LCD screens, easy-to-follow menus, and sensibly arranged buttons. The Kodak Easy-Share 500 has a large, 3.5-inch LCD, but its display quality wasn't as good as that of the others. The Sony DPP-FP55 has just a 2-inch screen, while the others are all 2.4 or 2.5 inches wide. The Sony's tiny text and smaller screen had us squinting at times, and several miniature buttons make its control panel somewhat fiddly.

The Canon Mini260 and Epson PM240 each have two buttons in front of the screen whose use changes depending on the prompts at the bottom of the display. The Canon's easy-to-use scroll wheel is reminiscent of an iPod. The other models each have a cell-phone-like four-way controller with an OK button at its center.

All the printers allow you to do some basic in-printer photo editing, but the Epson shines here. You can easily rotate and crop images, automatically fix the color balance, remove red-eye, and apply black-and-white and sepia effects. You can also add border designs, including a



FEATURES COMPARISON

Close Competition for Portable Printing

The Canon Pixma Mini260 narrowly edged out the worthwhile Epson PictureMate.

	SNAPSHOT PRINTER	PCW Rating	Performance'	Features and specifications ²			
1	Canon Pixma Mini260 Best \$200 BUY find.pcworld.com/55343	77 Good	Color photo quality: Good Grayscale photo quality: Fair Tested speed (ppm): 1.0	Media types: CompactFlash, Memory Stick, SD Card, SmartMedia Cost per print: \$0.30			
	Bottom line: Excellent controls m	ake it easy to use	, but prints could use more color sal	turation.			
2	Epson PictureMate Snap PM240 \$200 find.pcworld.com/55325	77	Color photo quality: Fair Grayscale photo quality: Fair Tested speed (ppm): 1.1	Media types: CompactFlash, Memory Stick, SD Card, xD- Picture Card Cost per print: \$0.25			
	► Bottom line: Though the unit is we	ell designed and s	imple to use, narrow banding mars o	otherwise decent prints.			
3	HP Photosmart A616 \$180 find.pcworld.com/55342	75 Good	Color photo quality: Fair Grayscale photo quality: Good Tested speed (ppm): 0.5	Media types: CompactFlash, Memory Stick, SD Card, Smart- Media, xD-Picture Card Cost per print: \$0.29			
	► Bottom line: Easy to tote and use. It's slow to print and delivers so-so color accuracy, especially for skin tones.						
4	Sony Picture Station DPP-FP55 \$150 find.pcworld.com/55523	73 Good	Color photo quality: Fair Grayscale photo quality: Good Tested speed (ppm): 0.9	Media types: Memory Stick, SD Card Cost per print: \$0.29			
	➤ Bottom line: Compact and inexper	sive, but its corr	espondingly small screen and contro	ols can make it difficult to operate.			
5	Kodak EasyShare Photo Printer 500 \$150 find.pcworld.com/55347	73 Good	Color photo quality: Fair Grayscale photo quality: Fair Tested speed (ppm): 0.7	Media types: CompactFlash, Memory Stick, SD Card, xD- Picture Card Cost per print: \$0.29			

CHART NOTES: Prices and ratings as of 11/3/06. Ranking based on more-detailed PCW Ratings measured out to one decimal point; the final ratings shown here are rounded off. FOOTNOTES: ¹Tested speed is at default print setting. ² Media directly supported, without requiring an adapter. Cost per print based on cost of ink-and-paper bundles.

variety of Disney character themes. The HP A616 offers border designs as well.

For easy mobility, the Canon, Epson, and HP have built-in carrying handles. The Kodak and Sony are the lightest, but their detachable paper trays make them a little more cumbersome. You can buy rechargeable batteries that slot inside the Canon (price not set at time of writing), Epson (\$50), and HP (\$80); for its A616,

HP also offers a \$40 car power converter. For the Kodak and Sony printers, you'll need to take along their external power converters.

In addition to the 4-by-6-inch prints you get from all the printers, the HP can deliver 5-by-7-inch prints

THE LIGHT AND small HP Photosmart A616 delivers good black-and-white prints but didn't do well with skin tones. and 4-by-12-inch panoramas, and the Canon can print 4-by-8-inch photos (which means cropping the picture on the LCD if you print from the camera or card). All of the units let you print multiple images on a single sheet that you can cut into wallet and passport-size photos.

The Kodak and Sony printers use a dyesublimation process, which employs heat to transfer varying amounts of ink from a 4-by-6-inch ribbon onto the paper. They take four passes to deposit yellow, magenta, and cyan inks, and then a clear protective layer. Dye-sub paper has perforated tabs at each end that leave an annoying rough edge when you snap them off.

The rest are inkjet printers. Unlike fullsize photo printers, these portable models' cartridges don't have room for six or more ink colors, which usually give better color reproduction. The HP has cyan, magenta, and yellow inks; to those three colors, the Canon and Epson add a black ink to improve contrast.

Print speeds varied greatly in our lab tests. At an average of 54 seconds per print, the Epson printer won the race, but not by much-the Canon and Sony units were close behind. At 109 seconds, the HP took twice as long in our tests.

RESISTING MOISTURE

SOME INDEPENDENT LABS test for photo-print longevity, but unfortunately no such test results yet exist for most of these portable printers. However, since sticky fingers and accidental spills present more immediate threats to snapshot prints, we ran informal tests to check out recent vendor claims of moisture resistance. First, we sprayed a week-old (and therefore completely dry) sample from each printer with water, wiped away the droplets, and left it overnight to dry. Only the Canon print showed any obvious discoloration, such as pink marks in continuous areas of sky. The Canon print also curled from the moisture.

Next, we immersed half of each photo in water for 30 seconds and briefly shook it dry. Again, the Canon sample suffered most from the test, with the paper crinkling and discoloring slightly. The Sony print swelled along the edges, but the other models' prints held up very well.

The printers all come with PC software



THE SONY PICTURE Station DPP-FP55 prints quickly but is a bit difficult to use.



THE KODAK EASYSHARE Photo Printer 500 has a large display but so-so print quality.

for editing your photos. HP and Kodak provide the most comprehensive packages, with hooks for sharing and printing images through their online photo sites;

since anyone can download these applications for free, we discuss them in our software section starting on page 118. The Epson model comes with Arcsoft PhotoImpression 5, a full organizing and editing program.

Sony's Picture Motion Browser and Canon's Easy-PhotoPrint are adequate for quickly printing from your PC, but you'd need more to match the utility of the Epson, HP, and Kodak tools.

As you can see from our chart, the Canon, HP, and Sony delivered the best print quality, but none clearly excelled. The Epson offers fun in-printer effects and borders, and it has optional battery power, as do the Canon and HP units. The Sony is tops for portability, while the Kodak gets points for its large display.

Print, Share, and Edit Photos Online

TODAY'S PHOTO SITES pack in a whole lot of extra features beyond just print ordering, including the now customary album-creation, sharing, and editing functions. We looked at the most popular photo sites as rated by ComScore/Media Metrix, an independent online-audiencemeasurement firm: AOL Pictures, Kodak EasyShare Gallery, Shutterfly, Snapfish, Smugmug, and Yahoo Photos. HP's Snapfish offered the best prints for the least money, and as a result earned our Best Bet award. But while Smugmug has excellent search, archiving, and other features for the technically minded photographer, its \$40 monthly fee and lagging print quality kept it off our chart.

ORDER PRINTS

WE ORDERED 4-BY-6-INCH glossy prints from each site. With the first-classmail delivery option, all the prints arrived within seven days. Including shipping fees (for a batch of 15) but without tax, Snapfish was the cheapest at 22 cents per print and Shutterfly was the most expensive at 32 cents (see the chart on page 116 for prices at the five sites discussed here).

Overall, the prints looked noticeably better than those from our tested snapshot printers. Snapfish's came out on top with vivid colors and sharp details; Kodak's good-looking prints came close behind. Yahoo had the best black-and-white print reproduction, with excellent contrast and shadow detail. Shutterfly delivered very natural-looking color prints, but our black-and-white sample suffered from posterization (sudden changes in tone) in what should have been a smooth sky. AOL's prints looked nice and sharp, but the colors were often too bright.

Kodak prints its photos on its own PerfectTouch paper. The others were all printed on Fujifilm Crystal Archivedespite Snapfish's advertising that it uses HP paper and AOL's claiming to print on Kodak. The Fujifilm prints emerged unscathed in the same type of informal moisture tests we did for the snapshot printers; the surface gloss of the Kodak prints suffered some minor blemishes.

UPLOAD PHOTOS

SOME OF THE sites offer free downloadable software that ties in to their services but also works in stand-alone use. We compare the software in our next section. and consider the site features here.

We liked how most of the sites let



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SNAPFISH'S RED-EYE-REDUCTION EDITING has a helpful before/ after button for you to see how well the removal did its job.



KODAK'S EASYSHARE GALLERY offers a useful final-adjustment feature, with zooming and cropping, when you order prints.

you drag and drop images from Windows Explorer, but we weren't big fans of having to browse for files with Snapfish's interface. Shutterfly speeds the process by starting an upload as soon as you select an image, allowing you to browse for more while it's working; the other services wait until you've chosen a batch of images and clicked a start button. All the sites also offer browser plug-ins for uploading multiple files at once.

Once your pics are stored, you can label them with captions, organize them into albums, and view them as slide shows.

We liked that AOL and Yahoo let you assign keywords for searching and viewing photos across albums. Kodak and Snapfish lack search capabilities entirely, which could be a problem as you build up a trove of pictures over the years. However, you can mark your favorites at all the sites, so they're easy to find again.

FEATURES COMPARISON

Showcase Your Digital Shots

SNAPFISH TOOK TOP HONORS with its low-cost, high-quality 4-by-6 prints.

	PHOTO WEB SITE	PCW Rating	Performance	Notable features
1	Snapfish Best Free Best snapfish.com	82 Very Good	Print quality: Superior Features: Good Ease of use: Good	Cost per 4-by-6-inch print: \$0.22 Full-size image download: Yes (\$0.49 Keyword searching: No
-	► Bottom line: Snapfish delivers to	ne best-quality pi	Tints at the lowest price, though	it lacks some advanced reatures.
2	Kodak EasyShare Gallery Free; \$25 annually (Premium) kodakgallery.com	80 Very Good	Print quality: Very Good Features: Good Ease of use: Very Good	Cost per 4-by-6-inch print: \$0.27 Full-size image download: No Keyword searching: No
	► Bottom line: This easy-to-use si	te omits a few ad	vanced features, but delivers n	ice prints at a fair price.
3	Yahoo Photos Free photos.yahoo.com	78 Good	Print quality: Very Good Features: Good Ease of use: Good	Cost per 4-by-6-inch print: \$0.28 Full-size image download: Yes (free) Keyword searching: Yes
	► Bottom line: The new Yahoo site	offers many feat	tures and good prints, but some	glitches detract from its usability.
4	AOL Pictures Free pictures.aol.com	76 Good	Print quality: Very Good Features: Very Good Ease of use: Fair	Cost per 4-by-6-inch print: \$0.29 Full-size image download: Yes (free) Keyword searching: Yes
	► Bottom line: Full-size download	are a plus, but r	ot enough to overcome costly	prints and a so-so interface.
5	Shutterfly Free; \$30 annually (Premium) shutterfly.com	75 Good	Print quality: Very Good Features: Good Ease of use: Good	Cost per 4-by-6-inch print: \$0.32 Full-size image download: No Keyword searching: No
	► Bottom line: Prints are relative		the attractively designed but I	imited Shutterfly site.

CHART NOTES: Prices and ratings as of 11/3/06. FOOTNOTE: 'Cost per print includes shipping, based on 15 prints.

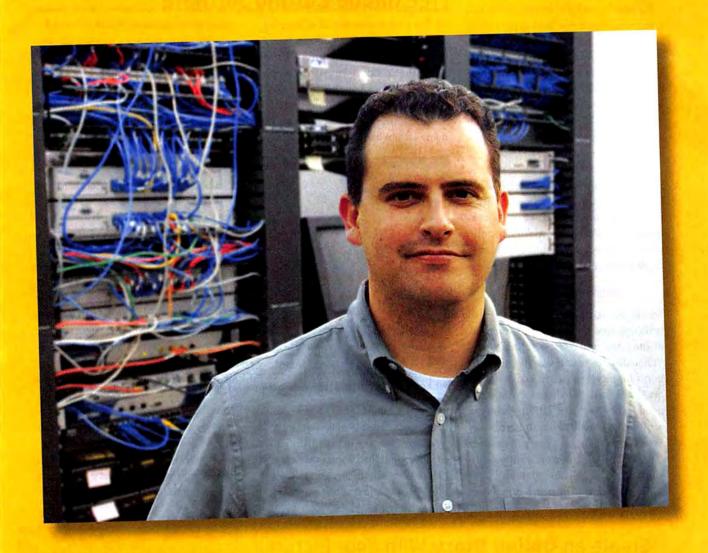
RETRIEVE FULL-SIZE PICS

UNTIL RECENTLY YOU couldn't freely download a full-size image once it was on a site. Both AOL and Yahoo now allow you to pull down the full image, essentially turning both sites into free online photo storage and backup. You can pay for full-size downloads with Snapfish and get them with Kodak's premium service, but if you want them from Shutterfly, you must order an archive CD. In addition, AOL, Kodak, and Snapfish each provide a browser plug-in that outputs the full images directly to a home printer without downloading the original photo.

AOL, Shutterfly, and Yahoo keep your pics indefinitely, but you'll need to order at least one item a year from Kodak and Snapfish or they'll delete your collection.

Two sites make limited use of the EXIF information that digital cameras embed into their images to record when and how you took them. Shutterfly uses the date in its initial caption, and you can search for photos taken in a given date range. Yahoo shows you the camera make and model, and some of the settings used, but tends to screw up the date: Sometimes it's

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a particular day in 1969, for instance.

For editing, each site lets you rotate and crop, remove red-eve, and apply effects such as black-and-white or sepia. Shutterfly is the only one without an online auto-fix tool for balancing contrast and color. You can apply decorative borders to your images with all except AOL; however, AOL does display a full-size image to make editing easier, and its one-click redeve removal worked well.

You'll need to direct Shutterfly to the right part of the picture to fix red-eye, but it helps by enlarging the area you initially select for more-precise work. Kodak, Snapfish, and Yahoo are trickier, because you must select the area to correct on a small, unzoomed copy of the image.

SHOW THE WORLD

TO SHARE YOUR shots, you can e-mail invites to view certain albums from any of the sites, and AOL, Shutterfly, and Yahoo also let you designate public albums for everyone to see. Kodak no longer forces invitees to log in, but you will need to deselect the option when you send invite e-mail. With Shutterfly and Snapfish you can make free personalized URLs along the lines of "smithfamily. shutterfly.com." Kodak offers the same feature, but only in its premium service.

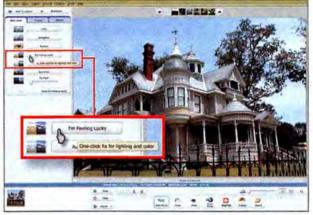
Free Image Editing Software

TO EDIT AND organize all of the photos on your PC, you can choose from many free downloadable programs. We tested six of them: Corel Snapfire, Google's Picasa, HP Photosmart Essential, Kodak EasyShare Software, Shutterfly Studio, and Snapfish Photoshow Express. With many easy-to-use features, Picasa earned

many sites, including Kodak, Shutterfly, and Snapfish. However, you can use any software's editing and organizing features, regardless of which service you use. If you're accustomed to commercial editors, you might miss in these free tools advanced functions that correct individual parts of your photo. Other than for red-eve remov-

al, all the editors we tried work on the entire image.

In HP's Photosmart Essential, a free downloadable program from the HP Web site that also comes with the A616 printer we tested, you get good photo management and fast editing operations. Likewise, Kodak's



PICASA'S MANY EDITING tools make basic photo touch-up a snap.

top honors, but Snapfish's feature-limited free version failed to make our chart.

All save Picasa tie in to a particular Web site for easy upload; Picasa uploads to the Picasa Web Album site and to Google's Blogger.com, and it allows printing from

EasyShare software came with the Kodak snapshot printer we looked at, and can also be downloaded from the Kodak site.

Like the HP software, EasyShare can print to any printer, and has good editing options-but its image management

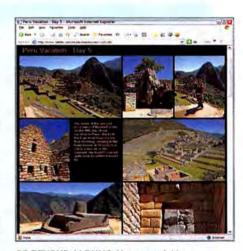
TELL A TALE

Create an Online Story With Your Pictures

WANT A CREATIVE way to showcase your photo talents? Try these free new sites.

Tell a visual story at Tabble (tabble, com) with a text commentary that accompanies the pictures you upload. It's perfect for documenting a wedding or vacation, for example, Choose a stylized template, upload your photos, drag them into position in the template, and enter captions. Share your finished Tabblo story with family and friends you invite by e-mail, or make it public for the world to see. We were impressed with how quickly we could put up a professionallooking chronicle of a trip to Peru.

Scrapblog (scrapblog.com) has a similar storytelling goal, with a more freeform approach and more page layout choices. Using a robust in-browser design tool, you drag images onto a canvas, rotate them to any angle, apply borders, and attach titles and captions. A set of editing tools helps you get your photos looking just right. The demo version we saw provides a variety of templates for your scrapblogs, but starting from scratch can also be fun. Scanned mementos, such as museum tickets, maps, and foreign coins, make a great background for vacation photos.



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skyp·ing (v.)

1. the act of making a free telephone call over the Internet using Skype". [e.g. Skyping with TRENDnet's Conference Phone Kit makes long distance collaboration with partners and co-workers simple



The distinctively designed Skype conference phone kit is the first product to enable hands free voice conferencing for small businesses anywhere in the office using a wireless Bluetouth connection. Bundled with Vapp's free High Speed Conferencing "service, small businesses can now create conference calls for free with up to 500 users using Skype" or regular landline phones. TRENDnet's complete line of Skype "specific products make expensive long distance phone bills a thing of the past.

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ClearLink VolP USB Phone (for Skype) TVP-SP3



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and search could be better. Shutterfly Studio provides top-notch organizing and editing in a well-designed package. Snapfire looks good, as well, but is lighter on searching and organizing.

We also tried The GIMP, a free image editor from gimp.org. Though it has plenty of advanced features, it isn't meant as a photo-organizing and easy-edit tool, so it wasn't suitable for our chart.

TRANSFER PHOTOS

ALL THE PROGRAMS in our chart help you transfer images from your digital camera. Most of the apps display image thumbnails and let you choose which to upload. Photosmart Essential, EasyShare, and Shutterfly Studio can rename the images in sequence as you import them, to something like SallyBday012.jpg. Picasa has to transfer all your images to a temporary location before you can choose the ones to import, which can take some time if you're moving many pictures.

Picasa can't rename the images during the transfer, but it can easily rename a batch of them once they're stored in its library. Snapfire lacks a preview for image transfers, but will transfer only your new shots.

All the utilities let you organize your images into albums, view them as slide shows, and label them with captions, generally more easily and quickly than you can online. To manage your photos, you'll appreciate being able to work with nested hierarchies of folders in HP Photosmart Essential, Picasa, Shutterfly Stu-

Shutterfly5TUDIO 3 b Get Pictures Cats (1) Keywords All Items (10539) Automatic (3) Cats (1) Crookshanks (1) Fero-2006-07-0117.38G 3-0v 5. 2006 - 5:110m

VIEW YOUR PHOTOS by chosen keywords, according to date taken, or in nested folders with downloadable Shutterfly Studio.

dio, and Snapfire. Picasa, Shutterfly, and the HP software also allow you to assign keyword tags for searching, and to view your shots by the date you took them regardless of which album they're in. By contrast, working with Kodak's single level of albums, once you import more than a few hundred shots, can be hard.

FEATURES COMPARISON

Manage Your Digital Photo Collection

PICASA TOOK THE TOP spot with its smooth interface and plentiful features.

FREE PHOTO SOFTWARE	PCW Rating	Performance	Notable features
Picasa 2.5 Best Free Sall picasa.google.com	86 Very Good	Features: Superior Design and usability: Very Good Editing quality: Very Good	Tagged searches: Yes Burn to CD: Yes Before/after edit views: No
Bottom line: Excellent Searchine	g, well-integrated	editing commanos, and easy uploads to	o several photo printing sites.
Shutterfly Studio 1.5 Free shutterfly.com/studio	83 Very Good	Features: Very Good Design and usability: Very Good Editing quality: Very Good	Tagged searches: Yes Burn to CD: No Before/after edit views: Yes
► Bottom line: Thoughtfully design	ned with good se	arching and overall good editing tools, t	but red-eye removal is imprecise.
Kodak EasyShare Software 6.0.1.20 Free find.pcworld.com/55645	78 Good	Features: Good Design and usability: Good Editing quality: Very Good	Tagged searches: No Burn to CD: Yes Before/after edit views: Yes
	ut you can browse	e images easily by date. Red-eye remov	al is last and effective.
Essential 1.12 Free find.pcworld.com/55646	77 Good	Features: Very Good Design and usability: Good Editing quality: Good	Tagged searches: Yes Burn to CD: With free plug-in Before/after edit views: No
► Bottom line; HP's free version h	as good searchin	g and fast editing operations but could	use better organizing features.
Corel Snapfire 1.0 Free find.pcworld.com/55647	76 Good	Features: Good Design and usability: Good Editing quality: Good	Tagged searches: No Burn to CD: No Before/after edit views: Only some edits Tagged searches: No
	Picasa 2.5 Free picasa.google.com Bottom line: Excellent searching Shutterfly Studio 1.5 Free shutterfly.com/studio Bottom line: Thoughtfully design Kodak EasyShare Software 6.0.1.20 Free find.pcworld.com/55645 Bottom line: Lacks searching, but HP Photosmart Essential 1.12 Free find.pcworld.com/55646 Bottom line: HP's free version in Corel Snapfire 1.0 Free	Picasa 2.5 Bost Free Bost Pree Bost	Picasa 2.5 Bost Free Design and usability: Very Good Editing quality: Very Good Editing quality: Very Good Bottom line: Excellent searching, well-integrated editing commands, and easy uploads to the Shutterfly Studio 1.5 Free Shutterfly Studio 1.5 Free Shutterfly.com/studio Editing quality: Very Good Editing quality: Good Editing operations but could Design and usability: Good Editing operations but could Design and usability: Good Editing quality: Good Editing operations but could Design and usability: Good Design and Usability: Good Design and Usability: Good Design and Usability: Good Design and

CHART NOTES: Prices and ratings as of 11/3/06. FOOTNOTE: Cost per print includes shipping, based on 15 prints.

EDIT YOUR PICS

TO TWEAK YOUR images to perfection, each program offers rotate, crop, red-eye removal, and auto-fix editing features. We liked Picasa's and Shutterfly Studio's easy-to-use tools the most, with their advanced operations like sharpening and straightening. Shutterfly also displays a useful before-and-after view of your image to show the effects of your editing, as does the EasyShare Software.

EasyShare's red-eye removal was fast and effective, but the others delivered mixed results: Shutterfly Studio was prone to removing color from any reddish skin tone around the eyes, while HP Photosmart Essential and Snapfire often left red halos around the irises.

Once you've gotten your photos just right, you can print them using any of the programs, no matter what type of printer you have. Kodak EasyShare and Picasa are also notable for their built-in CDburning capability for archiving images. HP Photosmart can do the same once you download a free plug-in.

Paul Jasper is a technology consultant and freelance writer based in San Francisco.



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WINDOWS TIPS

SCOTT DUNN

Keep Your Windows XP System Young and Vibrant

EVERYBODY IS TALKING about Vista. but many Windows users feel no need to invest in a new operating system. A regular maintenance regimen-plus an occasional checkup-will help you keep XP rolling along for years to come.

Get off the upgrade bandwagon: If you constantly upgrade to the latest powerhouse versions of your favorite applications without also upgrading your hardware and Windows version, your PC will seem older and creakier than ever. Instead of embarking on endless upgrades, stick with application versions that you know work well with your machine.

In the same vein, consider turning off the auto-update features that so many apps have these days (with the exception of your firewall, antivirus, and antispyware tools). An example is Adobe Reader, which seems to phone home faster than you can open a file; to block automatic updates in Adobe Reader 7, click Edit-Preferences · Updates and select Do not automatically check for critical updates. Why should developers decide when and how you update your apps? If you're experiencing a specific problem with a program, or if you need a particular new feature, surf over to the vendor's Web site and download the upgrade manually.

Products monitor for upgrades in different ways, so you'll have to check each application's documentation. A free tool such as Startup Control Panel (find. pcworld.com/46260) helps you remove software that runs in the background and that checks constantly for updates (see FIGURE 1). See last month's Answer Line column (find.pcworld.com/55344) for more on managing auto-start apps.

Swap when you need to: Windows designates a portion of hard-disk space as virtual memory (also called the swapfile or pagefile) to supplement RAM. The OS assigns some virtual-memory space to all processes, and the virtual memory itself gets used even if some RAM is still available. Accessing a hard disk is always slower than using RAM, so if your PC has oodles of memory, you may improve performance slightly by telling Windows not to use the pagefile for some of its own code until it has used up available RAM. How much memory is in an oodle? That depends on the number and types of applications you typically run on your PCbut don't make this adjustment unless your system has at least 1GB of RAM.

To make Windows use virtual memory only as a last resort, you have to edit the Windows Registry. And before tinkering with that part of your OS, you must back it up; see "Care and Feeding of the Windows Registry" (find.pcworld.com/51280). Be aware that Microsoft recommends against eliminating your pagefile entirely.

WINDOWS TIPS

Postpone your Vista upgrade by keeping XP fresh with these performance and maintenance tweaks.

INTERNET TIPS

Simple ways to transform your blog into a full-blown, modern Web site; make money with Google's AdSense.

128 HARDWARE TIPS

Shield your notebook PC from heat, cold, rain, and other elements; keep your earphone cords untangled.

ANSWER LINE

Your one-stop guide to file encryption; add shortcuts to Office dialogs; Microsoft's free update manager.

132 DVD BURNING TIPS

Avoid the five most common burning mistakes to ensure that your custom CDs and DVDs play as expected.



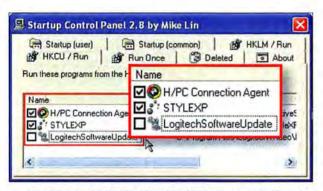


FIGURE 1: PREVENT ENDLESS UPDATES of your applications by deactivating startup applets that constantly phone home.

With your Registry backup in place, choose Start. Run, type regedit, and press **Enter>.** In the tree pane on the left side, navigate to and select HKEY_LOCAL_ MACHINE\SYSTEM\CurrentControlSet\ Control\Session Manager\Memory Management. Double-click the DisablePaging-Executive icon in the right pane. Change the '0' in the Value data box to 1, click OK, and restart your PC.

For more virtual-memory tweaks, consult "Eight Fast, Simple Ways to Give a PC More Pep" (find.pcworld.com/55345). Go with the NTFS flow: If you've been hanging onto your old FAT32 hard-disk format, it's high time you switched to NTFS. Besides being faster and more secure, NTFS also lets you access encryption, folder and disk compression, and other superior features. About the only reason to stick with FAT or FAT32 is if you need to be able to access your disk from DOS or Windows 98 (puh-leaze!)

Don't worry; you can switch to NTFS without reformatting your hard disk and restoring your apps and data from a backup. Choose Start-Run, type cmd.exe, and then press (Enter) to open a Command Prompt. Now type convert followed by a

space, the drive letter, a colon, another space, and /fs:ntfs. For example, to convert your C: drive to NTFS, enter convert c: /fs:ntfs.

Check your System Restore priorities: System Restore has saved my bacon many times, so I reserve as much disk space as possible for its restore points. (Answer Line colum-

nist Lincoln Spector begs to differ, however. Browse to find.pcworld.com/55349 for his System Restore alternative.)

To adjust the amount of disk space System Restore claims, right-click My Computer in Explorer or on the desktop and choose Properties. Choose the System Restore tab and select a drive whose storage settings you want to change. Click Settings, drag the slider to the desired level, and click OK twice. Refer to "Windows Hacks: Registry Remedies" (find. pcworld.com/55350) for more on tweaking your System Restore settings.

Relocate system stuff: System Restore points and certain other files must be

stored on your Windows drive. But if you have multiple hard disks or partitions, you can free up space on your Windows drive by moving other system files elsewhere. See my strategies for doing so in my column, "Five Steps to a Leaner, Cleaner Windows" (find. pcworld.com/55351).

Sacrifice hibernation: Any time that you use Windows'

hibernation feature to start up faster, the OS puts everything in RAM in a single hidden file named 'hiberfil.sys' on your hard disk. The file is roughly the same size as your RAM-for example, 512MB for a machine with 512MB of RAM. Like System Restore points, your hibernation file must be on the same drive as Windows. If you're running out of space on your Windows drive and you don't use the hibernation feature (or don't find it terribly useful), you can save a huge chunk of disk space by turning the feature off, and thereby deleting the hiberfil. sys file. To do so, choose Start. Run, type powercfq.cpl, and press (Enter). Click the Hibernate tab. and uncheck Enable hibernation (see FIGURE 2). Click OK.

Cut the clutter: Give your disks a good scrubbing by using Windows' Disk Cleanup tool to create custom cleaners. This utility lets you discard the junk you don't want while keeping your Internet cache intact for optimum browsing performance, among other options. For details, see "Superscrub Your Drive Automatically" (find.pcworld.com/55352).

Clean a little deeper: Unfortunately, the Disk Cleanup tool misses certain temp files. Here's a little batch file to com-

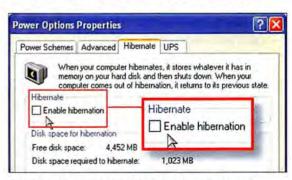


FIGURE 2: DON'T HIBERNATE MUCH? Save disk space by disabling this feature in the Power Options control panel.

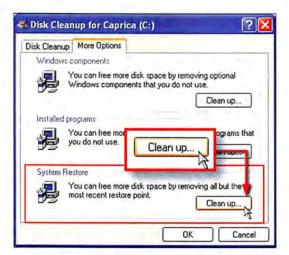


FIGURE 3: IF YOUR SYSTEM is running okay, clear disk space by having Windows delete your old restore points.

plete the task: Open Notepad or your favorite text editor and type del /s /q "C:\ Documents and Settings\Username\Local Settings\Temp*.*", replacing Username with the name of the user account and adjusting the drive letter as needed. Save the file with a name like deltemp.bat (be sure to use the .bat extension) and store it with your other batch files (if you don't have other batch files, your Desktop or any other easy-to-access folder will do). Add the file to your Startup folder (Start. All Programs. Startup) so that it deletes the files every time you log in to Windows.

Clean up the backup: Be sure to check out the Disk Cleanup tool's advanced options, available on the More Options tab. For example, click More Options, and then un-

der System Restore, choose Clean up to delete all but your most recent restore point (see FIGURE 3).

GET WINDOWS SWINGING

WHEN XP WAS released in late 2000, the iPod was just a glint in Steve Jobs's eye. The world has since developed a mania for portable music players, digital photography, and wireless gizmos. You probably spend a lot more of your computing time than you used to viewing digital photos and videos, and listening to MP3s and other digital music.

Here are some ways to enhance XP's media capabilities.

Avoid musical duplicates: If after ripping CDs in the Windows Media Audio (WMA) format, you decide to go with a tool like iTunes to link with your portable music player, be aware that importing songs into iTunes means converting them to the Advanced Audio Coding (AAC) format, resulting in duplicate music files that will hog your hard disk. To save space, stick to one music player, or at least to one format (such as MP3)

that multiple players can handle. Windows Media Player 10 and 11 can rip music in MP3 format without any additional software. To select the format for ripping music from CDs to hard drives in Windows Media Player, choose Tools. Options and click the Rip Music tab. Choose your desired option from the Format dropdown list and click OK (see FIGURE 4).

More music-management magic: Many people who have learned the joys of using their PC as a jukebox soon discover that they have scads of music files downloaded from the Web or ripped from their CDs. To get your music collection under control, check out my article "Six Quick Tips Help Tame Oversize Files and Folders" (find.pcworld.com/55353).

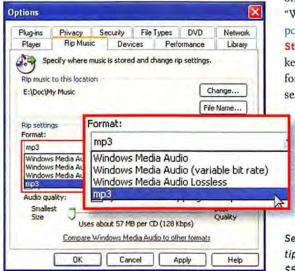


FIGURE 4: AVOID DUPLICATE FILES by ripping in a format that's compatible with all of your players and audio tools.

WINDOWS TOOLBOX

Check Directory Sizes at a Glance With Folder Size

THE SIZE COLUMN in Windows Explorer's Details view shows the space consumed by individual files, but it provides no information on the size of folders and directories. The free Folder Size utility (find.pcworld.com/55360) adds this feature to Windows Explorer. Once vou've installed Folder Size, choose View. Choose Columns, and check the box for Folder Size. You may also want to uncheck the Size box, since that column is now superfluous. Click OK. The new Folder Size column shows the size of folders and individual files. Calculating the size of large folders can take a while, but using this approach is better than opening a Properties dialog box for each folder, one at a time.

Make your system multimedia-friendly: As with music files, you may be struggling to get a handle on the photographs you've transferred from your digital camera. If so, check out "A Better Way to Manage Sound and Image Files" (find.pcworld. com/55354) for ways to improve Windows Explorer's photo-management capabilities. (The article includes tips on previewing music and video files, too.) For more on previewing image files in a jiffy, see "Windows' Hidden Image Viewer" (find. pcworld.com/55355).

Store pics online: Of course you want to keep your important photos close by, but for little or no money (depending on the service), you may also be able to store and

> access your images online, where it's much easier to share them with Uncle Bert and Aunt Ernie. Major players include Flickr (www.flickr. com), Google's Picasa Web Albums (picasaweb.google.com), and Yahoo Photos (photos.yahoo.com).

Send your Windows-related questions and tips to scott_dunn@pcworld.com. We pay \$50 for published items. Visit find.pcworld. com/31607 for more Windows Tips. Scott Dunn is a contributing editor for PC World.



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INTERNET TIPS

SCOTT SPANBAUER

New Tools Help Take Your Blog to the Next Level

IF YOU'RE A new blogger, Google's free Blogger service (www.blogger.com) will meet your needs. But if you're a born-toblog pundit like me, you want additional features, personalization, and control.

BLOG-O-MATIC

TOP-FLIGHT BLOGGERS ARE increasingly moving to WordPress (wordpress. org), Automattic Productions' no-cost.

open-source blogging software. Unlike the basic blogging tools found in Blogger, Microsoft's Windows Live Spaces (spaces. live.com), and Yahoo 360 (360. yahoo.com), WordPress offers tons of plug-ins and widgets for customizing your blog. One of my favorite WordPress features is its spam filter, which weeds out spam posted as comments. You can also make your blog private, allowing only the people you specify to read and comment on your postings.

But WordPress gives you more than a simple chronological Weblog: The program's pages feature makes it a fullblown content-management system supporting complex Web sites. For example, WordPress templates let you keep your bio, contact info, or other static content easy for your blog visitors to access.

WordPress's PHP script files require the MvSOL database and PHP software running on the host server. After editing one of the scripts to include your MySQL and PHP user names and passwords, you upload the scripts to the server-and just like that, you have a blog.

If this seems like programming voodoo

scottspanbauer.com, for example) and don't mind an occasional text ad among your postings, you can create a free account on Automattic's WordPress.com, a blog-hosting service much like Google's BlogSpot. At the time of writing, free WordPress.com blogs were limited to 25MB of images, PDFs, and other files. The amount of text that you and your readers can post is unlimited, however. (Automattic plans to add commercial account options that increase storage.)

If you choose WordPress.com as your host, setup is a breeze. When you log in, a toolbar of configuration options appears at the top for creating posts and pages, changing themes, moderating comments, and adding links to a page's sidebar (see FIGURE 1). You can receive e-mail support from WordPress's creators, too.

For collaboration, create additional author and moderator accounts and set the blog to be invisible until it's ready.

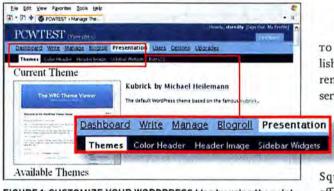


FIGURE 1: CUSTOMIZE YOUR WORDPRESS blog by using the pointand-click options that are available on the service's toolbar.

to you, relax. WordPress and most of its hosting partners provide point-and-click tools that have you blogging in minutes.

If you're happy using a subdomain (such as scottspanbauer.wordpress.com) rather than your own domain (www.

TRY THE HOSTS WITH THE MOST

TO USE WORDPRESS to publish a blog or site on your current Web host, your hosting service must support PHP and

> MySQL. Independent services such as Blue Host (www.bluehost. com) and Laughing

Squid (laughingsquid.net) offer WordPress support and charge as little as \$7 a month; go to wordpress.org/hosting

to see a list of such services. A personal note: I adore my local mom-and-pop ISP for its high levels of customer service, technical savvy, and stability, but when I broached the subject of supporting Word-Press blogging, the company wasn't prepared. If I were to create a WordPress blog using my own domain name, I would probably select one of WordPress's recommended host services.

Send your questions and tips to nettips@ spanbauer.com. We pay \$50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. Scott Spanbauer is a contributing editor for PC World.

BLOGGING FOR DOLLARS: CASH IN WITH GOOGLE'S ADSENSE

IF YOUR BLOGGING consists of posting pictures of the kids for Great-Aunt Millie to see, or detailed accounts of your bunion surgery, don't expect to strike it rich as a pro blogger. But if what you say is interesting to even a modest audience, you could receive a check each month

by placing ads on your blog. One of the easiest ways to test the Web-ad waters is with Google's AdSense service, which context-matches Google text ads to your blog's content and optionally places a Google search box on your site. To apply, visit www.google.com/adsense.



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H610





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HARDWARE TIPS

KIRK STEERS

Keep Your Notebook PC Safe From the Elements

HEAT, COLD, MOISTURE, and sudden shocks can harm your laptop as much as any malicious virus or spyware program. One good jolt can destroy a hard drive. crack an LCD, or permanently damage a motherboard. People who work in extreme environments don't blink at spending \$3000 or more for a rugged portable such as General Dynamics's GoBook XR-1 (find.pcworld.com/ 55504) or Panasonic's Toughbook-29 (find.pcworld.com/55503). But you don't have to pay a premium to protect your notebook. These tips will help keep it out of the repair shop.

Stop spinning: The disc in your hard drive is more vulnerable to shock when it's rotating. If you can't turn the notebook off or put it into hibernation before you move it, shut the machine's lid and wait for it to enter standby mode before you pick it up. Hold on tight: To keep a better grip on

your notebook, place strips of 3M Safety Walk tape (find.pcworld.com/55505) along the edges of its case. This may not

SpeedFan 4.29 Readings | Clock | Info | S.M.A.R.T. Charts |

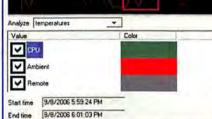


FIGURE 1: IN WARM SETTINGS, keep an eye on your PC's internal temperature with the SpeedFan utility.

Coded by Alfredo Milani Comparetti - 2000-2006 - alfredo@almico.com

UNTANGLE YOUR CORDS

DO YOU HATE untangling your cell phone or MP3 player earphones every time you want to use them? Wind any earphone or other narrow cord around the \$10 Zip Wraps Automatic Earphone Retractor from Digital Innovations (find.pcworld.com/55514) and you'll never struggle with knotted, unruly cords again. Pull the cords out of the spring-loaded housing when you're ready to listen, and push a button to retract when you're done.

look slick, but it's cheaper than repairing or replacing your laptop after a drop.

Mind where you place your notebook, whether it's inside a case or out (see the

next tip). In vehicles, avoid spots with constant vibrations, and visualize what will happen to your laptop during a sudden stop. When you're in cafés, airports, offices, or other public places, watch your power cord. Until all notebooks have magnetic plugs like Apple's Magsafe, tripping over a power cord will be a primary cause of serious notebook damage. Get a good case: A lightly padded layer of nylon or leather can protect your notebook from small bumps; but if it falls more than a short distance, only multiple layers of padding can absorb the shock. RoadWired's \$100 Skooba Satchel (find. pcworld.com/55506) protects your notebook with foam padding and air cells. Many of Targus's laptop cases use the

company's SafePort Air-Protection System to provide first-rate cushioning for your notebook (find.pcworld.com/55507); the bags cost from \$50 to \$130.

Wrap it up: If you carry your laptop in a nonpadded case or backpack, enclose it in a protective skin. Fellowes's \$25 Body Glove Neoprene Notebook Sleeve (find. pcworld.com/55508) and RoadWired's \$30 Skooba Skin (find.pcworld.com/ 55509) fit in a larger case. But to travel in colorful style, carry your notebook around in the \$65 Monster Laptop Sleeve from Barry's Farm (find.pcworld.com/55510). Monitor the temperature: For notebooks, cool isn't just a state of mind, it's a condition of survival. When the temperature

around you rises, so does the temperature inside your laptop. If you suspect your system is overheating. search the machine's documentation for its maximum internal operating temperature (usually 45 degrees Celsius, or about 113 degrees Fahrenheit). Then use Alfredo Milani Comparetti's SpeedFan (find.pcworld. com/50043; see FIGURE 1) to monitor your system's conditions. It places an icon in your system tray that continually reports the CPU and hard-drive temperatures. Though the program is free, the author accepts donations. Go with the flow: Most laptops dissipate a large amount of heat through the bottom of the case. Anything that obstructs airflow around that surface

can cause overheating. Avoid placing the notebook on blankets, upholstery, or other soft surfaces. Even keeping it on your lap for extended periods can cause overheating (your legs will probably know about it soon enough). A good notebook cooling pad can significantly lower operating temperatures; Antec's Notebook Cooler (find.pcworld.com/53082) is available online for less than \$35.

Go to find.pcworld.com/31511 for past Hardware Tips columns. Send your tips and guestions to kirk steers@pcworld.com. We pay \$50 for published items. Kirk Steers is a PC World contributing editor and the author of PC Upgrading and Troubleshooting Quick-Steps from McGraw-Hill/Osborne Press.







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XPLORER XS

- NVIDIA* nForce* 570 SLI Chipset MB with Dual 16X PCI Express
- GENUINE Windows* XP Media Center Edition 2005 with SP 2
- Corsair 2048MB PC6400 DDR2 800 Dual Channel Memory
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- (2) NVIDIA* GeForce* 7950 GT 256MB DDR3, 16X PCI Express
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- LG 16X DVD+-RW Drive & 16X DVD-ROM
- Intel[®] High Definition 7.1 Surround Sound
- 600Watt Subwofer Speaker System
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- Microsoft* USB Optical IntelliMouse
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 Intel[®] PRO Wireless 3945A/B/G Networking
- Intel* 945GM Chipsset
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Intel® Core™2 Duo Processor E6700 (4MB Cache, 2.67Ghz, 1066Mhz FSB)	\$ 2105
Intel [®] Core [™] 2 Duo Processor E6600 (4MB Cache, 2.40Ghz, 1066Mhz FSB)	\$ 1865
Intel® Core™2 Duo Processor E6400 (4MB Cache, 2.13Ghz, 1066Mhz FSB)	\$ 1759
Intel® Core™2 Duo Processor E6300 (4MB Cache, 1.86Ghz, 1066Mhz FSB)	\$ 1719

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١	Intel [®] Core [™] 2 Extreme Processor X6800 (4MB Cache, 2.93Ghz, 1066Mhz FSB)	s	1885
l	Intel* Core TM 2 Duo Processor E6700 (4MB Cache, 2.67Ghz, 1066Mhz FSB)	s	1399
l	Intel® Core™2 Duo Processor E6600 (4MB Cache, 2.40Ghz, 1066Mhz FSB)	s	1149
1	Intel® Core™2 Duo Processor E6400 (4MB Cache, 2.13Ghz, 1066Mhz FSB)	s	1045
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ANSWER LINE

LINCOLN SPECTOR

Keep Your Secrets: A Safe, Easy Way to Encrypt Files

HOW DO I encrypt files, and which ones should I encrypt?

Conrad Layne, Plain City, Ohio ANY SYSTEM THAT encrypts your entire hard drive is overkill for most PC users. I prefer encrypted safes, which are files that contain encrypted folders and files. To the outside world, a safe looks like a big

file filled with gobbledygook. Open a safe with its password, and you reveal a virtual drive holding your sensitive data. When you're done and you close the safe, the data reverts to gobbledygook.

Safes are easy to use, transportable from one PC to another, and a breeze to back up. I recommend the free open-source safe program TrueCrypt (find.pcworld.com/ 55516), which supports AES-256, Blowfish, Triple DES, and other

heavy-duty encryption algorithms. TrueCrypt hides your safe well-if you're in the belt-and-suspenders crowd, it can even place your safe inside another safe.

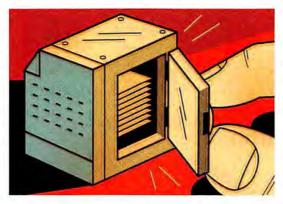
Remember: No encryption is secure with an easy-to-guess password. Safest is a string of 20 or more apparently random letters and numbers. But how do you remember such a password?

Make up an easy-to-remember but impossible-to-figure-out formula of family names, birthdays, and memorable words. For instance, use your kids' names spelled backward, with every third letter capitalized, followed by your birthday squared-be sure, though, not to use a formula that has been printed in PC World. Visit find.pcworld.com/55522 for more tips on crafting secure passwords.

Write the password or the formula on a

business card and carry it in your wallet. It's unlikely that someone will steal your wallet and your PC, and even less likely that they'll figure the card out.

What files should you put in the safe? Any that you don't want crooks, competitors, coworkers, or even your own children to see. One top priority is financial



information, especially if it involves credit card, bank, or Social Security numbers. Passwords to retail Web sites should also be stored in the safe. You might put some sensitive work-related files there as well (although your IS department likely has an encryption policy). Your résumé, family photos, private e-mail, and other files that you want to keep secure and confidential are candidates for the safe, too.

CUSTOMIZE OFFICE DIALOGS

CAN I CHANGE the shortcuts on the Places Bar in Microsoft Office File Open and Save dialog boxes? Karen Brown, Loudon, Tennessee

THE OFFICE PLACES BAR lets you put shortcuts to your favorite folders in the Open and Save dialog boxes in Office apps like Word and Excel. You'll find the Places Bar on the left side of File Open, File. Save, and other dialog boxes.

To add a shortcut to the Places Bar in Office 2002 and 2003, open any Office dialog box with a Places Bar, and navigate to and select (but don't open) the folder to which you want fast access. Now click Tools. Add to "My Places"; your folder will appear at the bottom of the Places Bar. If it's not visible, right-click the bar and select Small Icons, or resize the dialog box

by dragging its bottom edge.

Right-click any Places icon for options to relocate or remove it. Unfortunately, Office won't allow you to replace any of the default icons, but you can move them below your own preferences.

In Office 2007 (running on XP, not Vista), navigate to the folder you want to add to the Places Bar, right-click the bar, select Add, and then enter the folder's name. (To customize the Places Bar for non-

Office applications, including the Internet Explorer and Mozilla Firefox browsers, go to find.pcworld.com/55517.)

Send questions to answer@pcworld.com. Answer Line pays \$50 for published items. Visit find.pcworld.com/31577 for more Answer Line columns. You'll find Contributing Editor Lincoln Spector's humorous and other writings at www.thelinkinspector.com.

CHECK OUT THIS TOOL TO CHECK YOUR UPDATES

HAROLD PONT OF Clearfield, Utah, responded to my earlier tip on downloading and saving Windows updates (find. pcworld.com/55520) by recommending another option: Microsoft's Baseline Security Analyzer (find.pcworld.com/ 55521). The free program scans your PC,

says which security updates you lack, and then gives you the chance to download and save them-an easy way to see your update needs, fix them, and stow patches for later. One caveat: The app requires Microsoft's annoying and controversial Windows Genuine Advantage.



Please join Samsung's Four Seasons of Hope to help the children.

Now this is a team! When these great people work with Samsung to help our communities, everybody wins. We are delighted to work together with the Magic Johnson Foundation with Best Buy, Boomer Esiason Foundation with Sears, Joe Torre Safe At Home Foundation, Arnold Palmer Hospital for Children with CompUSA, Jon Bon Jovi's Philadelphia Charities, Rudy Giuliani for St. Vincent Catholic Medical Centers Foundation, Wayne Gretzky Foundation and Dan Marino Foundation with Circuit City. By teaming up with Magic, Boomer, Joe, Arnold, Bon Jovi, Rudy, Wayne and Dan, you're making a great investment and giving families new hope for the future. To find out how you can help, visit www.fourseasonsofhope.com. The Four Seasons of Hope. Because no one should ever go without.



















VD BURNING TIPS

JON L. JACOBI

How to Avoid the Top Five Disc-Burning Mistakes

CD/DVD RECORDERS AND media are pretty mature and stable products at this point. But if you aren't careful, a bad burn could still happen-and leave you with only a bicycle reflector for your effort. Here are the five most common discburning errors, and how to avoid them.

1. You didn't verify: If there's a golden rule for burning discs, it's "Thou shalt verify." Using your burning software's verify (or validate) function to compare what has been written with what was read is your best hedge against nasty surprises down the road (see FIGURE 1). The verify function won't increase your chances of burning a disc successfully, but it will let you know of a problem in time to burn another disc. Many a seemingly successful burn will bug out when you play it-not because the disc has gone bad, but because the burn was bad to begin with.

2. It's the wrong media: In a perfect world, choosing the right media wouldn't be an issue. But nothing is more frustrating or embarrassing than sitting down in front of Grandma's TV at the family reunion only to watch her DVD player choke miserably on the photo album you labored over so dutifully. The moral of the story? Select media that you know your player (or Grandma's) will support. In the case

of DVDs, that means choosing from DVD±R/RW or DVD-RAM.

If you buy bare, no-name blank media (CD or DVD), follow the golden rule above (verify!)-and prepare to run into the occasional bad disc. In my experience, DVD media tends to be a lot more reliable than CD media; but generally speaking, the lower a disc's cost, the better its chances of heading straight to the scrap heap.

3. You're going too fast: Nobody likes waiting around for a disc to burn. Unfortunately, going as fast as you can isn't always the best

strategy. While I've rarely had problems burning rewritable CDs and DVDs, their recordable counterparts are a different

story. Some CD-R and DVD-R discs burn at top speed correctly, but I've experienced blowouts with many others. Once you factor in the time you spend trying to determine what the problem is, you might be better off stepping your burn speed down a

notch (see FIGURE 2). And unless you're using a stopwatch, you'll never notice the difference between, say, 18X and 16X anyway.

4. The firmware's gone soft: With the intense pressure to get products out the door in a competitive market, your burner's firmware or software bundle may not have been exactly perfect when you bought it. Shocking, I know, but the point is that the firmware or software has almost certainly been updated (or soon will be), and if you're not happy with your burner's performance, you should avail yourself of those updates, which you'll find on the vendor's Web site. Still, there's a heap of truth to the old saying "If it ain't broke, don't fix it." Updates all too often cause problems of their own. If your discs are burning fine, let your burner be. (Even drive vendors will tell you that.) But if your drive habitually stutters when you switch to a new brand of disc, for example, a firmware or software update will likely help.

5. You're cruisin' for a bruisin': Today's PCs are more than fast enough to juggle other tasks while burning discs. But as I

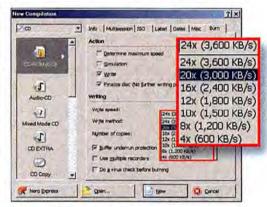


FIGURE 2: MOVE INTO THE SLOW LANE-use a setting below your burner's max to avoid wipeouts.

hinted above, programmers sometimes have bad days, and software does crashtaking your nearly completed burn with it. You'll increase your chances for success if you minimize the number of apps running while you burn your discs. I'm not saying that you should avoid multitasking or burning in the background altogether, but I am saying that you ought to be careful. If you're down to your last disc and you have time for only one go, shut down all your other apps, set the disc to burning, get a cup of your favorite beverage, contemplate the universe for a few minutes-and don't mess with your computer until the job is finished.

PC World contributor Jon L. Jacobi says he can give you a great deal on shiny coasters.



FIGURE 1: FIND OUT RIGHT AWAY whether your new CD or DVD burned successfully by verifying (or validating) the disc before you play it.

Toolbar Review

There has never been a better time to use a toolbar with your Internet browser. Toolbars can provide users with numerous features such as Pop-up Blocking, Driving Directions, Adult Content Filtering, Security Features, Spyware Detection, Games and more. Toolbars are a convenient and powerful addition to your browser, making it easier than ever to navigate the Internet.

The comparison chart below will help you decide which toolbar is right for you.

Toolbar Comparison Chart					
Toolbar Features:	Advanced Toolbar	Google	YAHOO!	msn ^v	
Search Engines	100+	1	1	1	
Search Tabs	V		i i		
Blocks Pop-Up Ads	1	✓	√	1	
Calendar Application	1				
RSS News Reader w/Ticker	1				
Auto Form Filler	1	√		1	
Adult Content Blocker	1				
Spyware Remover	V		1		
Homepage Protector	1				
Browser Tracks Eraser/Cleaner	V				
File Shredder	V				
Add Buttons for Software	1				
Add Buttons for Webpages	√	1	1		
Screensaver Launcher	1				
Games Links	70	0	10	10	
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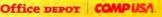
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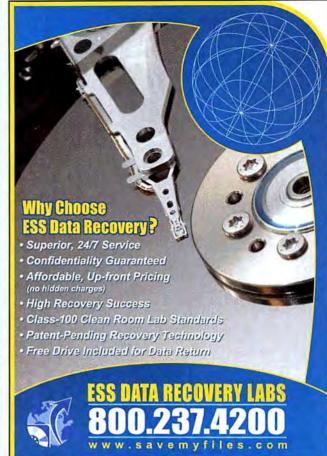
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"THIS IS THE easiest-to-use version of Windows yet, and will help bring the power of the PC to new users worldwide," Bill Gates announces. The press release goes on to claim that the operating system "dramatically improves the key areas that keep users waiting on their PC today,

including opening applications, accessing the Internet, and shutting down the PC. This enhanced performance, along with powerful new self-maintenance and update features, empowers users to spend more time enjoying their PCs and less time managing their

Windows Vista? No. Windows 98.

system."

"Today we unveil the future of computing," trumpets Bill Gates. He cites a reliability report from an independent laboratory: "According to the test, with constant and intense use" in 90 workdays the operating system "never failed."

Windows Vista? No. Windows 2000.

"We are entering an exciting new era of personal computing," declares Bill Gates. "This powerful new version of Windows offers so much to customers -it unlocks the full power of the PC and enables them to enjoy the best of what the digital world has to offer."

Windows honcho Jim Allchin adds that "customers will experience a much more enhanced yet simplified computing experience. Customers can do things they've never done before with a PC; likewise, business users can work smarter and faster with more productive tools to meet the demands of any size company."

Windows Vista? No. Windows XP.

Every Microsoft upgrade sets a new standard-in hype.

Beginning to see a pattern here? Microsoft introduces new operating system. Microsoft promises great benefits. New operating system doesn't deliver.

Less time "shutting down the PC"? To this day my XP machines often hang until I hold down the physical on/off switch awhile. A Windows that goes 90 days without a single crash? Yeah, right. Hey, XP won't go even a month without a forced reboot to install security fixes!

Apart from Microsoft hype, one thing never changes when the latest version of Windows arrives: the time you have to waste coping with the peccadilloes of the new regime. Will the upgrade really deliver productivity increases that let you get that time back? Not bloody likely.

When you switch to Windows Vista, you'll be figuring out how to cope with questions as little as why 'My Documents' turned into just 'Documents' and as big as where to get a new driver for your old printer-if you can get one at all. Your old security software won't work, so you

> will have to find, pay for, and install replacements. You'll be tearing your hair out every

> > time you encounter new features that work differently from the old famil-

iar ones for no apparent reason. And if you're a particularly early adopter, you'll probably be googling frantically in search of others who have run into problems similar to yours.

I'm not masochistic enough to test Microsoft's betas and release candidates. The final product is usually rough enough; and as I write, that's not yet available. But I've seen the demos and read the propaganda and first looks. Our review, by the way, is on page 86; as it details, Vista promises a lot of potentially useful new stuff. But for now I can think of only one reason to worry about the thing: It will come with your next PC.

Unless that machine is a Mac, in which case you'll be offered a new OS every year or two with a couple of modest features that pretend to change the world and claim to be worth \$130. But at least you'll waste less time in the upgrade process.

Contributing Editor Stephen Manes is cohost of PC World's Digital Duo (www.pcworld.com/ digitalduo) on public TV. Visit find.pcworld. com/31595 for more Full Disclosure columns.

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