6 Things You Didn't Know Your CELL PHONE Could Do

PC WORLD

MOTHERBOARD Ratings: Power at the Right Price

How to **SPEED UP** Your Hard Drive

NEW PC THREATS YOU CAN'T SEE Are They Targeting Your Data?

APRIL 2007 ◆ TECHNOLOGY ADVICE YOU CAN TRUST® ◆ WWW.PCWORLD.COM

WINDOWS TIPS FOR EVERYONE

40 BEST WAYS TO GET MORE OUT OF VISTA AND XP

User Accounts
Change account type
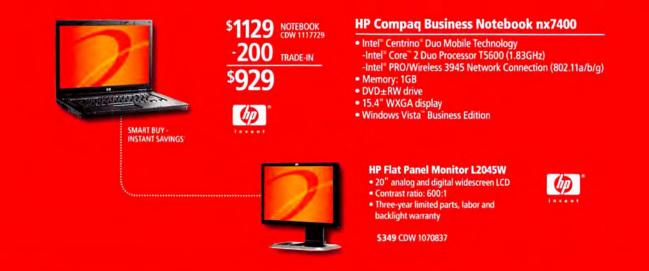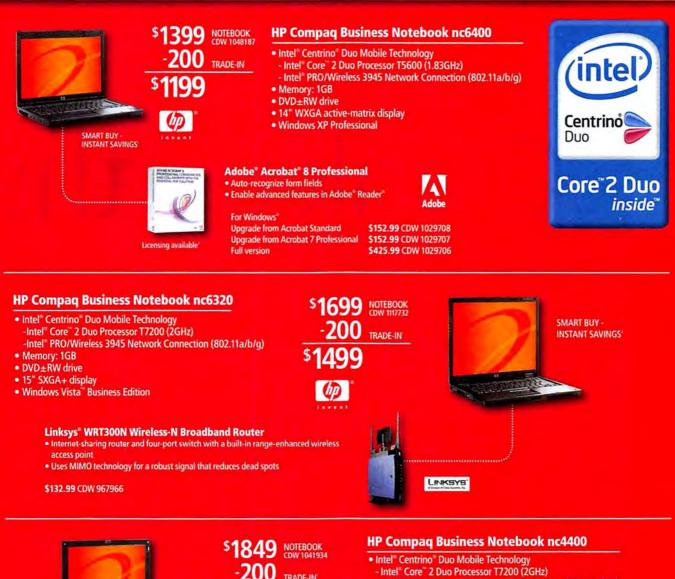
PRINTED IN USA ◆ $6.99

Old systems and productivity don't exactly go together. Think an upgrade might help?

With the benefits of today's improved technology, there's never been a better time to upgrade your systems. At CDW, we're there with a dedicated personal account manager who has all the notebook knowledge you need to help you become more efficient in the office. And with best-of-breed products from the top names in the industry, you not only get what you need, you get it whenever you need it. So call CDW today and get the technology you need to make the most of your day.

$1129 NOTEBOOK CDW 1117729
-200 TRADE-IN
$929

SMART BUY - INSTANT SAVINGS

HP Compaq Business Notebook nx7400

- Intel® Centrino® Duo Mobile Technology
  -Intel® Core™ 2 Duo Processor T5600 (1.83GHz)
  -Intel® PRO/Wireless 3945 Network Connection (802.11a/b/g)
- Memory: 1GB
- DVD±RW drive
- 15.4" WXGA display
- Windows Vista™ Business Edition

HP Flat Panel Monitor L2045W

- 20" analog and digital widescreen LCD
- Contrast ratio: 600:1
- Three-year limited parts, labor and backlight warranty

$349 CDW 1070837

Crank up the

AMD ⏶
Smarter Choice

A powerful combination.

It's all here—stunning visuals, exceptional performance, and a rich, intuitive experience. And that's just the beginning with Windows Vista and AMD.

Windows® Media Center.* ·

Get ready to kick back and watch some PC. With Windows Media Center in Windows Vista, you can record TV, watch movies, and enjoy your favorite videos and music all in one place—in HD and surround sound.

AMD LIVE! PCs.

Get more out of your digital entertainment with an AMD LIVE! PC. AMD dual-core processors are designed to easily handle multiple applications, and the ATI Radeon® graphics let you enjoy the full impact of the razor-sharp visuals of Windows Vista.

Microsoft

ONE TOUCH

The Xerox DocuMate® 152 scans at 30 images per minute
and creates searchable PDFs with the touch of a button.
Put information you need right at your finger tips for under $600.
There's a new way to look at it.

High standards. Remarkable performance. The Xerox DocuMate 152 scanner, winner of PC Magazine's Editors' Choice Award is the ultimate office productivity tool. Convert documents into PDF, TIF, JPG, BMP or most other major file formats with One Touch. Drop in an original. Push a button. It's that easy! The DocuMate 152 also features One Touch scanning that allows you to scan-to print, -to- e-mail, or -to-storage, and then share documents while offering the highest level of image quality and OCR accuracy. The scanner offers nearly $400 in bundled software including ScanSoft PaperPort, OmniPage Pro, business card scanning software, and X1 Desktop Search. Control of your paper documents is one button away!

88

ON THE COVER

126 — 56
110 — 119
43 —
— 88

Cover design by Greg Silva.

119

The most fuel-efficient auto company in America.*

EnviroNMeNToLogy
Honda thinking in action.

Meet Small Oil. Honda has always been committed to developing environmentally responsible technology. And with cars like the all-new Fit along with the legendary Civic, Honda will continue as the leader in fuel efficiency.† Through innovation and hard work, Small Oil can make a world of difference. That's our Environmentology.™

HONDA
The Power of Dreams

FIND-IT URLs

TO ACCESS INFORMATION about any item in PC World with an accompanying Find-It URL, enter find.pcworld.com/*xxxxx* (where *xxxxx* is the appropriate five-digit number) into your browser's location field. You'll jump to a Web page containing the information you want.

COMING UP IN MAY

Best Freebies Ever: Feast on the coolest sites, services, and downloads without spending a dime.
Real-World Networking: We offer help on everything from setup and security to streaming media.

Blu-ray and HD DVD Primer: Our guide explains the new formats and looks at the latest products.
Online Storage Tips: For easy, inexpensive backups, nothing can beat online storage services.

better with 1&1!

center offers you more power, more security, more value!

	1&1 BUSINESS	Yahoo! STANDARD	Go Daddy PREMIUM
Included Domains	3	1	$1.99/year with purchase
Web Space	250 GB	10 GB	200 GB
Monthly Transfer Volume	2,500 GB	400 GB	2,000 GB
E-mail Accounts	2,500 IMAP or POP3	500 POP3	2,000 POP3
Mailbox Size	2 GB	2 GB	10 MB
Search Engine Submission	✓	✓	Extra charge applies
Website Builder	18 Pages	✓	Freeware
Flash Site Builder	18 Pages	—	—
Photo Gallery	✓	✓	✓
RSS Feed Creator	✓	—	$4.99/month
Ad-free Blog	✓	✓	Freeware
Map & Driving Directions	✓	✓	—
Dynamic Web Content	✓	✓	—
Web Statistics	✓	✓	✓
E-mail Newsletter Tool	✓	$10/month	$3.99/month
In2site Live Dialogue	✓	—	—
Chat Channels	✓	—	✓
Form Builder	✓	✓	—
Premium Software Suite	✓	—	—
90-Day Money Back Guarantee	✓	—	—
Support	24/7 Toll-free Phone, E-mail	24/7 Toll-free Phone, E-mail	24/7 Phone, E-mail
Price Per Month	$9.99	$19.95	$14.99

We offer a variety of hosting packages to fit your needs and budget.

1&1

or visit us now **1and1.com**

PC WORLD

To protect your Windows Vista™, get behind the ball.

If you want the most "Wow" out of your new operating system, you need Windows Vista™ Certified protection from Trend Micro™ Internet Security 2007. Roam the internet, connect with others and make the most of your digital world, knowing you have comprehensive protection from viruses, spyware, hackers, identity theft and more. That's a big Wow!

TREND MICRO™

**Secure your digital world with Trend Micro™ Internet Security 2007.
Download a free trial at www.trendmicro.com.**

On Your Side: Where We Always Stand

Solutions to your irritating service and support woes are only a letter away.

MAYBE YOU'RE CAUGHT in an endless support loop with your PC vendor: Your problem, says the manufacturer, is software. No, counters the software tech support person, the fault clearly lies with your hardware. Or perhaps you've waited patiently for your rebate check to arrive, only to receive a letter stating that you're ineligible for the cash because you failed to (check all that apply): include the UPC sticker (and thereby void your warranty); copy the title page of the (nonexistent) user manual; sign in blue ink.

Many of you have found *PC World's On Your Side* column a useful place to vent frustration and seek help. Often *On Your Side*, aka our "end-of-your-rope" department, can resolve problems that seem hopelessly mired in bureaucracy.

A peek inside the onyourside@pcworld.com mailbox reveals that most of the 100 or so complaints we field each month center on tech support woes. ("The bums hung up on me!" "Why won't anyone there call me back?" "I had to wait for more than an hour on hold, and after all that they still couldn't help me.")

The next-most-frequent issues involve rebate hassles. ("They never sent a check!" "Now they tell me the rebate period has expired.")

Third, we receive mail from readers with faulty systems who feel like a hot potato being tossed among vendors anxious to disclaim responsibility for the bad performance.

Unraveling these snarls can take weeks. But we have a secret weapon in our effort: the tenacious author of *On Your Side*, Amber Bouman. On any given day, she's running down solutions to 15 exasperating service and support problems on your behalf. Though we have room in the magazine to print only one case each month, Amber resolves as many as she possibly can.

Armed with scads of documented specifics about who said what and when, Amber approaches the company's media relations office and relays all of the information. The vendor typically retraces the steps of the problem, comes up with a solution, and then tells Amber, in detail, how it will make things right for the customer.

> Call the vendor, not the rebate center, for assistance.

Amber's advice for avoiding snafus? "If you run into trouble, it's important to contact the company and write down the details of every conversation. What day and time did you call? Ask for both the first and last name of the person you talk to. If they transfer you, get the next person's full name. How long were you on the phone? Take notes on what they want from you, and what they say they'll do."

In many instances, Amber says, you should consider the fine print your friend. For rebates, note the program's expiration date. Follow all instructions to the letter, and include every requested document.

Make copies of all the paperwork you send in. It's the only transaction record you'll have if something goes wrong. And if the money doesn't arrive as promised, contact the company, and take notes on the details mentioned above. "You can resolve a lot of rebate problems more quickly by calling the vendor instead of the rebate center," she reports.

In some cases, though, the effort may not be worth the hassle. Do a little arithmetic before you decide to chase down the money, Amber says. If an item costs $50 without a rebate, and a competing product costs $60 with a $20 rebate, buy the $50 item and skip the headaches.

It's unfortunate that a customer done wrong has to turn to a national technology publication and Web site for help, but that's part of why we're here. For going on 25 years, *PC World* has been an advocate for technology consumers, and we aren't about to stop. (For more on rebates, see *Consumer Watch*, page 35.) ∎

Kimberly Brinson is managing editor of PC World. The e-mail address for On Your Side *is onyourside@pcworld.com.*

ON YOUR SIDE author Amber Bouman.

PHOTOGRAPH: ROBERT CARDIN

NEWS & TRENDS

Phone Bill Woes

CELL PHONE CUSTOMERS ARE INCREASINGLY COMPLAINING—AND SUING—OVER MYSTERIOUS, HARD-TO-CANCEL CHARGES ON THEIR MONTHLY BILLS. BY TOM SPRING

CELL PHONE CARRIERS and third-party vendors, eager to pry more money from subscribers' wallets, are marketing extra services such as ring tones, games, music, and more. But an increasingly angry chorus of cell phone customers complain that they are seeing mysterious charges on their bills for monthly services they never intended to sign up for, and that then take months to cancel.

Customers are also upset about paying for spam text messages to their phones. And many users and consumer advocates are turning to lawsuits and new legislation for help.

Perhaps the most frustrating of the problems are the mysterious charges for extra services. Take the case of real estate agent Dorothea Cole, of Davenport, Iowa. Last spring she discovered a monthly $34 charge she didn't recognize on one of her firm's Sprint wireless phone bills. The carrier said that the charge was from a third-party service, not Sprint. But the support reps said they were unable to identify the charge. The phone had been used by a former employee who was no longer reachable, so it was up to Cole to figure out how to stop this recurring charge.

When she asked Sprint to stop the billing, it refused and told her to contact the company herself. But since Sprint had said it couldn't name the company, Cole was stuck. She says her bill indicated only that the charge was for a "Premium Services Non-Telecom Purchase."

Cole turned off the phone's voice and data service, but the account remained active, and charges reappeared. For seven months Cole asked Sprint—to no avail—for information on

DOROTHEA COLE, OF Davenport, Iowa, discovered a monthly $34 charge she didn't recognize on one of her company's Sprint wireless phone bills.

who was billing her each month and how to stop the charge. In December, Sprint finally told Cole the charge came from a company called Blinko. Blinko, an American subsidiary of Italy's Buongiorno entertainment conglomerate, offers ring tones, games, SMS jokes, and wallpapers to cellular customers.

When Cole called Blinko, the company initially declined to issue a refund, explaining that while she paid the bill, she wasn't the one who signed up for the service. She told Blinko the phone had been deactivated for the past seven months. Blinko agreed in the end to refund her $70.

Blinko told *PC World* that it grants full refunds to customers who allege that somebody else had used their phone number to sign up for a Blinko service.

When we followed up with Cole, she said she had finally received a letter confirming cancellation of the service. Sprint had also agreed to refund her $151.75.

Sprint can't explain how this happened to Cole. It says it refunds disputed third-party charges, and that the billing party is supposed to be identified on account statements, especially after a recent update to Sprint's billing system. Company spokesperson Roni Singleton says the company is investigating Cole's case. "Something clearly went wrong here," Singleton says.

Glenn McDonald, a Rosedale, Maryland, software engineer who uses Verizon Wireless, had a similar problem. He says he spotted a $10 charge on his September bill

that he couldn't identify. He suspected it was something his teenage son may have signed up for when he tried to download a ring tone, though his son couldn't confirm that. In any case, what McDonald ended up with was weekly trivia questions sent via text messages to his phone.

Verizon initially told him it didn't know who was responsible for the charge, then later said it was Blinko. McDonald

> For seven months Cole asked Sprint who was charging her, to no avail.

called Blinko and, after multiple tries on its automated phone system, eventually got hold of a customer service rep who agreed to cancel the account. However, a similar charge showed up in December, he says, and Verizon told him the charge had all along been from MobileSidewalk, which also delivers games, videos, ring tones, and the like to cellular users. Verizon told him it would credit him $10 for the error. McDonald then called MobileSidewalk and canceled the account.

Verizon says that it does not discuss specific customer issues, citing its privacy policy.

BROAD PROBLEM

COLE AND MCDONALD are two of many cellular customers that shared with *PC World* near-identical stories of recurring mystery fees on their bills, along with similar hassles in stopping the charges. The Better Business Bureau

and multiple state attorneys general have received thousands of complaints about Blinko, many alleging similar mysterious charges and difficulty getting rid of them.

For example, Blinko is facing a class action lawsuit in Michigan over sending Verizon Wireless customers in that state "unwanted text messages and monthly charges." The Florida attorney general is investigating similar claims against Blinko, according to public records. Mobile game and ringtone provider M-Qube, a subsidiary of telecommunications and security services company VeriSign, faces a similar class action suit in Massachusetts. VeriSign declined to comment.
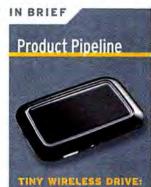
Verizon Wireless and AT&T (formerly Cingular) are also contending with customer lawsuits. The suits allege that customers were billed monthly without consent for a "Roadside Assistance" program for over two years (for more on these suits, read "Why We Love to Hate Our Cell Phone Company," find. pcworld.com/56494).

Merger mania has done much to improve wireless reliability, says Serge Matta, an analyst with ComScore Networks—but, he adds, it has made companies' billing systems worse. Merged companies have to cobble together the billing systems of the entities that are involved in the merger. The end result, Matta contends, is bungled bills.

Even companies that aren't dealing with a merger may have problems, since many systems are antiquated and weren't designed to cope ▶

with the many new products and services you can now purchase via a cell phone, says Elisabeth Rainge, director of telecom software research for IDC. The Cellular Telecommunications Industry Association, a trade group, acknowledges that "there is work to be done" when it comes to billing for third-party services.

The CTIA is developing a system to monitor third-party services and root out the bad apples, says Joe Farren, a spokesperson for the association; but Farren could give no time frame for the completion of this monitoring system.

TIPS

AGGRAVATION WATCH

OTHER CHARGES THAT have consumers fuming are the fees related to unwanted text messages, or SMS (Short Message Service) messages. The problem has quickly come to a head for consumers as advertisers test the limits of mobile marketing with unsolicited messages users are charged for. Depending on the cell plan, users pay either a set fee for each message sent or received, or a flat rate for a set number of messages. Worse, you typically can't avoid unsolicited text messages unless you configure your service to block all SMS messages, according to the Federal Trade Commission.

Florida-based C & C Global Enterprises got hit with a lawsuit by Illinois Attorney General Lisa Madigan after it allegedly sent millions of unsolicited text messages to Illinois wireless phones last November. Madigan says its Consumer Protection Division has 256 complaints from consumers saying they received these unsolicited text messages from C & C Global, which was advertising interest in the sale or rental of time

shares. The Illinois lawsuit alleges that these messages violate the federal Telephone Consumer Protection Act (TCPA) and the state Consumer Fraud and Deceptive Business Practices Act.

C & C did not reply to e-mail sent to an address listed under the company's domain name registration, and did not answer its phones.

An Arizona court ruled in 2005 that the TCPA, which prohibits unsolicited phone calls to cell phones, also applies to SMS, or text messaging. The defendant in the case, a mortgage firm by the name of Acacia, tried to appeal to the U.S. Supreme Court, but the appeal was rejected this year, so the Arizona ruling stands. It applies, however, only to mass e-mailings delivered to cell phones as SMS messages; customers remain unprotected if an individual uses a cell phone to send spammy text messages, say sources at the FTC familiar with the case.

The Mobile Marketing Association, an industry trade group, has recently developed guidelines for strictly policing text messaging ads, such as a double opt-in requirement where you must confirm your subscription. Marketers must now agree to abide by these MMA guidelines to gain access to carriers' customers. (See "Is That a Sales Pitch in Your Pocket?" *Consumer Watch*, January, for more.)

Meanwhile, consumer groups want to push through legislation that will clarify consumer protections for cell phone users and set up guidelines for truth in billing. So far, though, no new laws to these ends have been passed.

DUMP YOUR CELL PHONE COMPANY

UNHAPPY WITH YOUR wireless provider? You don't always have to pay hefty fees to break free from your contract. For a nominal one-time charge ranging from $15 to $20, some sites offer you a service that lets you jettison your unwanted contract or swap it with another user for a service you prefer.

Two such sites, CelltradeUSA.com and Resellular.com, have been around for about a year; newcomer Cellswapper.com launched in January. These sites create an online venue through which people who want to buy, sell, or swap a cell phone contract can meet and negotiate. If you want to transfer your account, however, you must call your carrier and make the request to transfer your phone and contract to someone else. Carriers go along because, although they lose one customer, they get another, and the contract is ultimately honored. "We look at it as an opportunity to win over a new customer," says Roni Singleton, a Sprint spokesperson.

Cellswapper.com cofounder Adam Korbl says that there are about 260 wireless contracts for sale on an average day at his site, and that about 100 contracts are purchased each week. Users who want to make their sale quickly tend to sweeten the deal by throwing in the old phone or by offering a cash incen-

tive. If the seller doesn't include the old phone in the exchange, buyers must purchase their own to match the new service, with no carrier subsidy. Still, sellers and swappers tend to come out ahead since their final costs are often far below the termination fees, which can be as high as $250.

If you're looking for another escape route, pay close attention to the fine print in any contract updates your carrier sends you. For example, in January Verizon offered some of its customers an opportunity to quit their cell plans and pay no termination fees because it raised the rates on its text message service, thereby changing the terms of the contract.

It's Blu-ray. It's HD DVD.
It's one machine.

MODEL BH100

SUPER MULTI BLUE PLAYER

Introducing the LG Super Blu™. The first machine that plays both Blu-ray disc™ and HD DVD*.

Now there's no need to choose sides in the format war. Experience the Full HD picture quality and digital sound from both Blu-Ray and HD DVD content. For the ultimate experience, pair it up to one of LG's new Full HD plasma or LCD HDTVs, and see how natural color, clarity and contrast can live together in perfect harmony. Go to www.LGusa.com/SuperBlu for more information.

Versatile as... Entertaining as... Innovative as LG.

Life's Good

LG

www.LGusa.com

ONLINE FRAUD

Phishing Sites Explode on the Web

ONLINE CRIMINALS ARE THRIVING EVEN IN THE FACE OF NEW AUTOMATED DEFENSES.

THINK THE NEW built-in phishing filters in Internet Explorer 7 and Firefox 2 will protect your private data? Think again. The number of sites devoted to phishing skyrocketed last year, and the number of Americans taken in by phishing schemes has nearly doubled. In November 2006—the last month for which data is available—the Anti-Phishing Working Group reported 37,439 new sites, up an astounding 709 percent from the 4630 new sites in November of 2005.

Last October, both Mozilla and Microsoft released new versions of their browsers that use blacklists to block access to known phishing sites. In response, resourceful phishers are flooding new fake Web sites onto the Internet too quickly for them all to be shut down or blacklisted.

The alarming ease with which the fraudsters changed course, plus other new phishing tactics, makes some security experts say that phishers have the upper hand in the war against online fraud.

"Ultimately," warns Zulfikar Ramzan, who is a senior principal researcher with Symantec's Security Response Group, "technologies that rely heavily on blacklists are going to be useless."

EASY PHISHING

ACCORDING TO RSA, a security vendor, hackers in January started selling a phishing kit that lets criminals set up very convincing fake Web sites with little effort. The fake site pulls images and layouts from the real site, usually a bank or other financial institution, and passes the user's information back to the real site to mimic a regular log-in—while keeping a copy of the account data for the criminals.
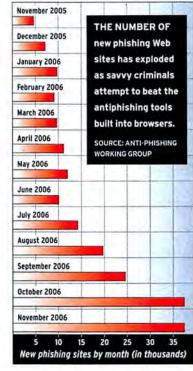
The draw, of course, is ever-increasing profits. Research firm Gartner estimates that 3.5 million Americans gave up sensitive information to phishers in 2006, an 84 percent jump from the previous year—for a total loss of $2.8 billion. One single phishing gang, known as Rock Phish, is estimated to have taken in more than $100 million.

According to security experts, Rock Phish pioneered many of the techniques that have contributed to the dramatic increase in phishing sites in recent months. And the image spam that hides its pitch from filters by embedding it in a picture was a Rock Phish invention, these experts say. On some days this single group, which specializes in spoofing U.S. and European financial institutions, may account for as many as one-half of all the phishing sites in operation, according to researchers.

Heuristic scanning may help combat the scourge. Instead of depending on a blacklist of known phishing sites, it analyzes a site's behavior, watching for techniques that phishers commonly employ. IE 7 uses heuristics, as does the free SiteAdvisor browser add-on for IE and Firefox.

An emerging standard for a new type of site certification—called Extended Validation Secure Sockets Layer (EV SSL)—may also prove useful. To get this certificate, sites will have to be checked out by a third party like VeriSign or Entrust to make sure that they at least appear to be legitimate. On approved sites, the browser address bar will turn green.

Microsoft supports EV SSL in its IE 7 browser, and major online-commerce sites such as PayPal have now started to come on board as well.

But if the current surge in phishing sites demonstrates anything, it's that phishers can and do get around automated tools and procedures to protect their sizable profits. Recently they have been developing new technologies that could very well thwart protection measures like EV SSL, according to Avivah Litan, a Gartner analyst.

Litan, who doubts EV SSL certificates will have much impact on phishing, believes that security technology firms deserve some of the blame for the growing phishing threat.

"The security industry has been a little arrogant," she explains. "I don't think that people realize how sophisticated these [online] criminals are."

BEST DEFENSE

ALTHOUGH NO MAGIC bullet may exist now (or ever) to safeguard us all, there is one simple way to protect yourself from the majority of phishing attempts: Never click a link in an e-mail message or on a third-party site to go to any of your financial accounts. If, instead, you always type in the address or use your own bookmark, even when you're 100 percent certain that the e-mail is legitimate, you should be safe.

Free, automated tools like Password Safe (find.pcworld.com/56483) and PwdHash (find.pcworld.com/56482) can still provide valuable help. But to effectively combat ever-adapting phishers, your best protection remains...you.

—Robert McMillan

THE NUMBER OF new phishing Web sites has exploded as savvy criminals attempt to beat the antiphishing tools built into browsers.

SOURCE: ANTI-PHISHING WORKING GROUP

November 2005
December 2005
January 2006
February 2006
March 2006
April 2006
May 2006
June 2006
July 2006
August 2006
September 2006
October 2006
November 2006

5   10   15   20   25   30   35

New phishing sites by month (in thousands)

you could if you wanted to

Featured here is our popular Fit System® Console in a state that can only be described as "fully loaded." We show it to demonstrate a point: Anthro's built-in modularity lets you do things with furniture that you never thought possible.

ANTHRO
Technology Furniture®
– Fast and Friendly!

So for a workstation that fits you and your work exactly, contact our friendly and knowledgeable folks at **800.325.3841** or **anthro.com/pcw**. We'll help configure something just for you!

Elevate™ Single Surface, Electric Lift Table

Adjustable Laptop Cart

Fit System® Standard Unit and Keyboard Table

MOBILE MEDIA

Music and Video Players Add Wi-Fi Access

DEVICES FROM AOL, IRIVER, AND SANDISK WILL LET YOU ACQUIRE TUNES WITHOUT A PC.

BUILT-IN WI-FI access hasn't done much to sell Microsoft's Zune or the less-well-known Music Gremlin. But Wi-Fi-equipped digital audio players are here to stay, and a new generation of devices from companies like AOL, Archos, iRiver, and Sandisk should expand the capabilities of these connected music players.

The Zune makes only limited use of its networking capability. Zune owners can share songs with each other, but the recipient can play the tracks just three times over a maximum of three days.

That left critics asking lots of questions: Why isn't there an online store that you could access without a PC? Where's the wireless syncing? And what about Internet radio? In coming months, connected audio players should have all of those features and capabilities, and more. As a result, Microsoft may well be forced to play a little bit of catch-up. Here, then, is a rundown of the forthcoming devices.

CONNECT IN MARCH

ANYONE WHO IS eager for a Zune alternative but who isn't too concerned about limited storage capacity should check out Sandisk's $250 Sansa Connect device. Arriving at the end of March, this 4GB player will work with a service called Zing (www.zing. net) to enable users to share playlists, stream Internet ra-

dio stations, and download tracks directly to the Sandisk portable as long as they have a Wi-Fi connection.

In addition to packing 4GB of flash memory, the Sansa Connect includes a microSD

SANDISK'S SANSA CONNECT ups the ante on Microsoft's Zune with streaming Internet radio.

card slot for adding storage, and it supports PlaysForSure downloads and subscription services. Sandisk's player also permits you to view photos, though not video, on its 2.2-inch color screen.

Rhapsody is working with iRiver on a Wi-Fi-equipped player as well, one with a few interesting tricks up its sleeve. The as-yet-unnamed device sports a 3-inch touch-screen display with a Flash-based interface. iRiver says it plans to make the player available in

both 2GB and 4GB capacities sometime this summer, and it claims the device will go 25 hours on one battery charge.

Rhapsody subscribers will be able to access the Rhapsody service using the device's Wi-Fi connection and thereby stream music without a PC. The player also includes VoIP support, although iRiver hasn't released details on which services that capability will be able to work with.

Archos got a head start on Wi-Fi integration last fall with its $450 604 Wi-Fi, a 30GB hard-drive player with a 4.3-inch, 480-by-272-pixel color screen. The 604 actually behaves more like a media-capable PDA—though it can record audio and video with various add-ons, its Wi-Fi connection is more focused on e-mail and Web access than on acquiring music. Later this year Archos will release an updated version of that player. Details are still sketchy, but the Archos 704 is reported to boast a DVD-friendly screen resolution of 800 by 480 pixels and an 80GB hard drive. And according to one report, the 704 should be able to stream video directly from your PC.

THE WIRELESS WAIT

BEYOND THESE devices, you will have to wait a little longer for the next crop of Wi-Fi MP3 players, but there could be a few winners in the bunch. Polaroid expects to launch its own slate of media players

this fall, including a 30GB model that will have a 2.8-inch screen and a 40GB model with a 4.3-inch screen. Both will support video playback and will be able to connect to Polaroid's DEC1000 media server to wirelessly download media off your home network.

Finally, AOL has a unit set for midyear release. Its $250, 30GB player will include both Bluetooth and Wi-Fi to download and stream songs from any PlaysForSure-compatible music store, including Napster, Rhapsody, and Yahoo.

ZUNE UPDATES?

WITH SO MUCH competition headed its way, Microsoft's Zune could start looking very old, very quickly. But to hear Microsoft tell it, the current Zune player is just the beginning. Flash-based Zune players should arrive late this year, and the company claims that it hasn't finished tweaking the device's wireless capability.

Microsoft says that it hopes to add Zune filling stations to hot-spot-equipped retail locations, so owners can load up on tracks while they're on the go. And rumors abound that the company will further open up Zune's Wi-Fi sharing capability so that transferred songs don't expire so quickly.

While the Zune may have stumbled out of the starting gate, Microsoft appears committed to the race—which it had better be: As the year progresses, we are sure to see even more competition.

—*Eric Dahl*

now lets you talk and work simultaneously.

Take multitasking to the next level. Introducing the Palm® Treo™ 750 smart device. Only Cingular's broadband technology lets you talk and download data at the same time. Plus, send and receive data at broadband speeds with the familiar functionality of Windows Mobile.* Do business faster with now.

> Talk, browse the Web, and download data simultaneously on Cingular's 3G wireless network.

> Easy-to-use Palm innovations integrated with Windows Mobile® 5.0, such as picture dialing directly from the Today screen.

> Supports a suite of email applications including Microsoft Direct Push, Xpress Mail, and Good™ Mobile Messaging.

> Broadest global connectivity of any U.S. wireless provider with data access in more than 115 countries and voice roaming in more than 185.

Treo 750
Exclusively from Cingular
SAVE $100
after $100 in mail-in rebate debit cards with 2-year service agreement on unlimited data plan of $39.99/month or higher and eligible voice plan.

palm | Windows Mobile

x cingular is now
The new at&t

Call 1-866-4CWS-B2B   Click www.cingular.com/treo750   Visit your nearest Cingular store

DIGITAL MEDIA

Upgrade Your Home Entertainment

AHEAD: LARGER HDTV SETS, BETTER COLOR, MORE PLAYBACK AND RECORDING CHOICES.

SHARP HAS WIDENED the HDTV field with its demonstration of the world's largest LCD TV, which measures 108 inches diagonally.

TV AFICIONADOS HAVE a number of things to look forward to this year, as vendors are poised to upgrade everything from HDTVs to set-top boxes to recorders for both the living room and the PC. That means bigger screens, better color quality, and more choices in recording and viewing your favorite shows.

TVs are getting some of the more significant upgrades. To start with, Sharp's splashy demonstration of a whopping 108-inch prototype LCD set further cements the notion that LCD can compete with plasma at the largest screen sizes, says Eric Haruki, IDC research director for digital TVs. Sharp's new plant, which produced the megaunit, can also make cheaper 46-inch and 52-inch LCDs. The upgraded capacity drives down prices at those sizes, Haruki adds. When Sony and Samsung open their own next-generation LCD plants later this year, that downward price trend will continue.

Also look for HDTVs with 120-Hz refresh rates (60 Hz and 75 Hz are standard currently) and HDMI 1.3 connections. The higher refresh rate will offer better clarity; Philips, Samsung, and Sharp are readying such sets. HDMI 1.3 provides more through-put, which enables improved color fidelity (Panasonic, Samsung, Sharp, Sony, and other vendors have these new sets).

This spring and summer, you'll also start to see TVs and set-top boxes with CableCard slots. The Federal Communications Commission mandated that set-top boxes shipping after July 2007 come with the cards. The technology will let

> ## Total HD discs will pack both HD DVD and Blu-ray movies.

you choose a set-top box you like—with the storage and processing power you prefer—so you aren't bound to the device that your cable or satellite service provider gives you.

HIGH-DEF DVD SHAKEOUT

THE INCOMPATIBLE Blu-ray and HD DVD formats have left some consumers confused and others unwilling to commit to high-def DVD, for fear that their product could be a dead end in a few years. The debut of LG's $1199 dual-format player, the BH100 (out now), and a corresponding PC drive, the GGW-H10N (due in April), should help. Though it is more than twice as expensive as HD DVD players and costs $200 to $500 more than Blu-ray Disc players, the LG device ensures that no matter which format wins, users won't be left out in the cold.

Content makers are helping, too. Warner Home Video has announced a line of Total Hi Def movie discs that will contain both a Blu-ray and an HD DVD version, so users need not worry about buying the correct format. Total HD discs are due by year's end; Warner sibling studios HBO and New Line Entertainment plan to support the format.

So far, however, no dual-format recorders or burners exist. Blu-ray burners for PCs have seen an upgrade to 2X; the first is the $650 Lite-On Triple Writer LH-2B1S (available now). And Toshiba will offer the SD-H903A HD DVD write-once drive, the first HD DVD burner for a desktop PC (notebook drives were available late last year). Systems with the new Toshiba drive should be out in the spring.

RECORD TO PC

HIGH-DEF DVD RECORDERS for the living room are still slow to come (we don't expect any until the end of the year, at the earliest), but PC-based HD recording received an important boost with the introduction of ATI's TV Wonder Digital Cable Tuner. The unit, which comes as either an external box or a PCI add-in card, allows you for the first time to not only receive but also record premium HD content like shows from HBO. You cannot, however, record video-on-demand or pay-per-view offerings with the ATI card. And for now, you can get the card only as part of a bundle when you buy certain new Windows Vista systems from major vendors such as Dell, Gateway, and HP.

Replay TV, which got out of the hardware business in late 2005, has finally released a $100 software product that brings its user-friendly interface to your PC, which would make viewing and recording HD on your computer much more palatable. You can try it free for 30 days. Once you purchase it, you'll have to pay an annual $20 fee for the electronic show-guide service after the first year. So much for that goal of cutting down on TV viewing this year.

—Anush Yegyazarian

NOD32. Swift. Nimble. Relentless.

Can you describe your antivirus software with the same certainty?

NOD32
antivirus system

Just set it and forget it. That's the beauty and the power of NOD32's ThreatSense® technology. NOD32 proactively protects against viruses, spyware, rootkits and other malware. And, its high-performance engine won't slow your system down. Take a free NOD32 30-day test drive. Call 866.503-ESET or download at ESET.com.

PLUGGED IN

ERIC DAHL

Fast, Cool Intel Chips Ahead

PLUS: SPAMMERS GO TO JAIL, AND LAPTOPS GET LED BACKLIGHTS.

INTEL'S 45NM STEP

The Buzz: While AMD prepares its next set of processors—a multicore design code-named Barcelona and due this summer—Intel has already demonstrated samples of its more-advanced Penryn chip. It's manufactured in a 45nm process that uses hafnium-based high-k dielectric and metal gates to decrease current leakage—and yield faster, more energy-efficient chips. The new materials help combat problems that manufacturers start to run into as chips shrink. Intel's 45nm manufacturing process should be the first to mass-produce CPUs using these innovations. Penryn slightly refreshes the Core 2 Duo design with additional cache memory and new SSE4 instructions, and should ship in the second half of the year. AMD and IBM plan to introduce a similar manufacturing process when they transition to 45nm chips next year.

Bottom Line: Intel has built a nice performance lead over AMD with its Core 2 Duo chips. With Penryn waiting in the wings and AMD's Athlon CPUs stuck for a while on a 65nm process, Barcelona had better be one heck of a chip.

SUING SPAMMERS

The Buzz: While your inbox continues to overflow with phishing attempts and Viagra offers, you can take solace in the fact that some spammers finally have to face the music—and possible jail time. Jeffrey Goodin, a phisher who targeted AOL users, was the first to be convicted under the CAN-SPAM Act and faces up to 101 years in prison. And online heavyweight MySpace is embarking on its own antispam battle. It is suing Scott Richter, a once-notorious spammer who settled a high-profile suit with Microsoft and New York state in 2004. MySpace claims that Richter sent millions of unsolicited bulletins to its users.

Bottom Line: If only this progress led to an actual reduction in spam. Unfortunately, sending spam (and running the phishing sites that profit from it—see page 22) is still a low-cost business with the potential for great rewards. Until people find a way to change that, you'd best sharpen your spam filters.

LED IN YOUR LAPTOP

The Buzz: Yet another reason to be excited about this summer's crop of notebooks: New high-end and thin-and-light models should begin to include displays with LED backlights, a technology we've been tracking for a while now. Compared with traditional CCFL backlights, LEDs are thinner, reproduce more of the color spectrum, and use less power, leading to better-looking laptops with more battery life. Sony already puts LED backlights in its VAIO SZ series; rumor has it, Apple and HP will jump on the bandwagon this summer.

Bottom Line: The first LED-backlit models will carry a price premium, though nothing like a $4000 LED-backlit unit that we tested a couple of years ago. We're talking closer to $100 here. Not bad. ■

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.

FUTURE TECH

SUPER CAMERA SENSOR

IF YOU'VE BEEN to a concert recently, you've probably noticed how the glow of camera phones has replaced that of held-aloft lighters. Not that any of those low-light pictures end up looking halfway decent. Well, Planet82, a Korean firm, aims to change that, with an image sensor that's capable of taking clear photos in dim light without a flash. Unlike the CCD or CMOS sensor that you find in most cameras, Planet82's Single-Carrier Modulation Photo Detector (SMPD) sensor can react to much lower light levels. A black-and-white sensor for cars and security cameras is set for this year; a full-color model should debut in 2008.

ILLUSTRATION: GORDON STUDER

Integrated Webcam. Vista Certified.
No Duct Tape Required.

Elevate your PC experience with an integrated 1.3 megapixel webcam. Once again, ViewSonic® redefines the display making videoconferencing in the office and at home simple, easy and crystal clear. The new VX55 Series high-performance HD displays include ultra-fast response for exquisite video and gaming. Analog and digital inputs, an elegant glossy design with state-of-the-art ergonomic features provide the ultimate in style and productivity. Just another breakthrough for you from the display experts.

BUILT-IN WEBCAM

Available in April at a dealer near you.

20" VX2055wmb
22" VX2255wmb

For details on the VX Series and to find a dealer visit ViewSonic.com/VX55

ViewSonic®
See the difference®

Go to find.pcworld.com/56407

JUST CANCEL THE ACCOUNT!

IN THE ARTICLE "Just Cancel the @#%$* Account" [February], your listing of BlueMountain.com as one of the worst offenders in canceling is right on target. I am a retiree who took a temporary job at American Greetings, the parent company of Blue Mountain. As call-center employees, we were trained to do exactly what you discuss—that is, make it difficult to cancel subscriptions. I was released from employment with the statement that my performance in attempting to retain customers was below acceptable standards. I told them that I felt I could not accept

their tactics, and if someone wanted to cancel, I thought it was best to let them.

Dean Seigneur, Northfield Center, Ohio

IT SEEMS THAT in all too many cases nowadays, only negative publicity gets action. If all companies would follow the Golden Rule, it would make it so much easier to take care of problems.

Wayne Carpenter, Omak, Washington

SEEING AOL AT the top of the "Big Hassle" list has made my three-year subscription to *PC World* worthwhile. I would love to see a monthly feature that exposes similar business practices.

Arland Miller, Lawrenceville, Georgia

DOWNLOADING PROGRAMS

REGARDING THE ARTICLE "Say So Long to Shrink-Wrapped Software" [*Consumer Watch*, February]: I used to run Norton Internet Security, which I had downloaded from Symantec's Web site. After a

reinstall, I went to the Web site and had to pay $7 for a new download. Other sites may require such fees, or may even make you pay full price for a reinstall.

Mike Parsley, Milford, Michigan

I'VE BEEN DOWNLOADING most of my programs for years. When I started, however, I made a crucial decision: I would always save the download to my external hard drive, and also back up that drive. This practice protects the files in case of drive failure—as has happened to me.

Another benefit: I've kept every version of each program with each upgrade or update. Several times I've preferred the older version and was able to restore it.

Phyllis Jaffee
Westborough, Massachusetts

TYPING ON SMART PHONES

I STARTING READING your article "Smart Phones Get Smarter" [February], but stopped at your requirement that the cell phones "had to come with a full QWERTY keyboard." I bought a BlackBerry with SureType and realized in about a nanosecond how much faster I could type without QWERTY. Going back to QWERTY would be like using a T-1 connection and going back to dial-up.

LoriAnn Maas, Charlotte, North Carolina

OFFICE 2007: MORE GLITZ?

AFTER SPENDING HOURS killing off obstructive and useless features of Office 2003, I have no appetite for doing so again with Office 2007 ["Microsoft Office 2007: A Worthy Upgrade," *Reviews and Rankings*, February]. Word 2003 is so bad, I have been trying to figure out how to reinstall Word 2000. It sounds like Office 2007 once again adds glitz while leaving real usability problems unaddressed.

Dan Smith, Moraga, California ▶

HOT TOPICS IN FORUMS

Vista, Rebates, PDAs, and Antispyware

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.

VISTA: Essentially this is Microsoft's version of Apple's OS X. I'm not really impressed. —*redmatrix06*

Vista is out, and lo and behold, the prices soar. Sure, there's a version for $99—that no one will want. The version that everyone *will* want (Premium) is a whopping $159. —*Wayfinder*

REBATES: How about renouncing rebates altogether? I refuse to pur-

chase anything that requires me to fill out forms for a rebate. —*gurman*

BLACKBERRY VS. TREO: As a loyal BlackBerry user, I think the immediacy of receiving e-mail is a major advantage over the Treo. —*dtervo*

SPYWARE PROTECTION: It is always prudent to use multiple levels of security. Windows Defender is (for the time being) free. Lavasoft and others also distribute good products for free; and, unlike with antivirus software, multiple spyware detectors can coexist on the same machine. —*JamesEvens*

DON'T TRUST PAID BLOGS

REGARDING "THIS BLOG for Hire" [*News and Trends*, February]: Taking paid ads is fine; disguising paid ads as editorial comment is morally indefensible and forever ruins the credibility of the writer.

James Penrose, Los Angeles

CONNECTED TRAVELER

IN RECENT TRAVELS to really remote places, I got lightning-fast Internet hookups ["Trials of a Quasi-Connected Traveler," *Gadget Freak*, February]. On the island of Langkawi in Malaysia, the connections were incredible. Hong Kong, Kuala Lumpur, and Singapore were better than anything in the United States; all the hotels in Asia have wireless.

Robert D. Budman, Orange, California

PC World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com. And share your thoughts on any article by using the Comments area under each story on our site, or visit our Forums. ∎

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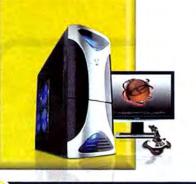
RATE THIS ISSUE by going to www. pcworld.com/pcwinput—you could win a $300 Amazon.com gift certificate. The site explains the official rules and offers an alternate method of entry into the prize drawing.

CORRECTIONS

IN "HIGH DEFINITION for Small Spaces" (*Reviews and Rankings*, March), we should have said that the Dell W3207C has no CableCard slot, and that its PCW Rating is 79 (Good).

In February's "Vista: Not Slow" (*News and Trends*), the HP Core 2 Duo PC's time on the multitasking test with Aero on was 348 seconds (versus 347 seconds with Aero off).

In February's "Gaming PCs Gain Quad-Core CPUs" (*Reviews and Rankings*), the price of the Dell XPS 710 should have been listed as $4174.

PC World regrets the errors.

Protect yourself from Web nasties.

ZoneAlarm® Internet Security Suite is the most complete Internet security solution. Now you can stop attacks before they reach your PC with award-winning software full of robust security features like these. and more!

Multi-layered Firewalls

Protection From Hackers

Antivirus & Anti-Spyware

Identity Theft Protection

ZoneAlarm
by Check Point®

Keep web nasties away from your PC.
Go to www.zonealarm.com/pcworld
and download your FREE 15-day trial.

Are Mail-In Rebates Headed for Extinction?

Though some sellers are abandoning rebates, these offers still have appeal.

DON'T YOU JUST hate mail-in rebates? It really galls me when a tech product's advertised price turns out to be based on a refund that I won't receive until several weeks after my purchase—and only if I mail in a properly completed form, a UPC code that I have to hack off of the product packaging, and my receipt. (In some states, advertising a post-rebate price is actually against the law.)

For those of you who despise rebates as much as I do, there's good news: Best Buy and OfficeMax have been on a crusade to eliminate mail-in rebates (and these huge chains have the clout to make most vendors heed their wishes).

If you use tax-preparation software, you may have noticed that last year Intuit got rid of the complicated rebate price structure for its popular Turbo-Tax software line; and this year H&R Block followed suit by eliminating mail-in rebates for TurboTax's principal competitor, TaxCut.

But don't break out the champagne and party hats just yet. Retailers such as Circuit City and Office Depot continue to use rebates as marketing tools; and in the highly competitive cell phone industry, rebates on handset purchases seem to be more popular than ever. The decline of rebates may save everyone a lot of hassle, but it may also mean that we'll be paying higher prices.

DEAL OR NO DEAL

STEPHEN BAKER, VICE president of industry analysis for market research firm NPD Group, even expresses skepticism about whether rebates are as unpopular with shoppers as I believe they are.

"I don't think it's clear at all that customers hate rebates. There's a dedicated group of customers who fill out their rebate forms and send them in," Baker says. "While we hear about the few people who don't get their rebates, the vast majority of people who fill out forms get their rebates back."

It's tempting to think that a $40 product carrying a $10 rebate should cost $30 if no rebate is offered. But the math doesn't really work out, since only a fraction of buyers go to the trouble of applying for a rebate. Nevertheless, the price ought to drop if the rebate disappears, right?

Not necessarily, says Baker. The money that a company previously earmarked for a rebate program may get redirected into additional advertising, say, or bonuses for sales representatives. In other words, "product prices don't go down as quickly as they otherwise might," Baker observes.
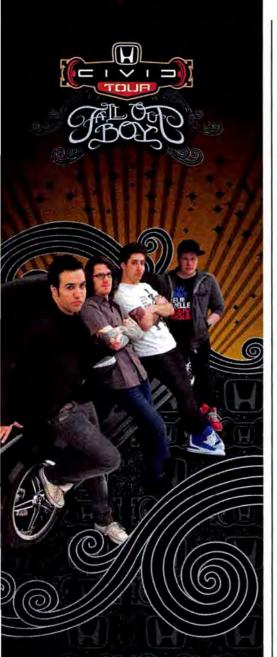
Case in point: When Intuit eliminated rebates for TurboTax, the company didn't lower the software's price. The Deluxe edition, for example, currently costs $40. I looked back at *PC World*'s tax software reviews from two years ago, when Intuit still played the rebate game. They showed that the Deluxe version cost as little as $25 after mail-in rebates.

TurboTax's FAQ acknowledges that with the elimination of mail-in rebates "some people will pay more." But the same FAQ says that the change was made for the benefit of customers, who "overwhelmingly told us they did not like rebates." (The FAQ doesn't say whether these customers hated rebates so much that they welcomed higher net prices.)

REBATE-FREE STORES

BEST BUY, SIMILARLY, is hoping to increase its market share by touting its two-year campaign to eliminate mail-in rebates as a response to customer gripes. The company says it expects to be rebate-free by the cover date of this issue—April 2007. Unlike Intuit, however, Best Buy acknowledges that its customers also like to save money. So in lieu of mail-in rebates, Best Buy promises "instant savings" on selected products, reductions that are credited at the cash register.

Deciding whether to buy a product that comes with a mail-in rebate offer can involve a tricky calculus. If the rebate promises a significant reduction compared with prices everywhere else, pursuing it makes obvious sense. But if you're saving only $10 on a $200 item, is it really worth your time? And what do you do if one ▶

ILLUSTRATION: MICHAEL KLEIN

store charges more for a product, but promises a substantial mail-in rebate? You have to decide whether it's worth the risk that you will never see that rebate, either because the company doesn't follow through or because you simply forget to fill out the paperwork and send it in.

Nowhere are rebates more abundant lately than in the fiercely competitive cell phone business. Carriers view them as come-ons for customers and hope to recoup what they give up in revenue ▶

PRIVACY WATCH

Don't Let Bad Guys Pose as You

LIKE A CON artist who disguises himself as you so he can walk unmolested into your office building, a small but growing type of online threat takes advantage of Web site programming flaws to try to access your online accounts.

Google recently fixed such a flaw that malefactors could exploit to steal a Gmail user's full contact list. The threat used the arcane-sounding "cross-site request forgery" (CSRF) strategy. The ploy is similar to cross-site scripting (XSS) attacks, in which attackers booby-trap a trusted site by rigging it with links that take the visitor to malicious destinations. But whereas XSS attacks exploit the trust that a user has for a site, CSRF attacks exploit the trust a Web site has for a user, according to WhiteHat Security chief technology officer Jeremiah Grossman.

Once you are logged in to a Web site, it trusts all requests that come from your browser. So CSRF forgeries simply trick your browser into sending a request for, say, your contact list—or as happened with a recently repaired flaw on the Netflix site, a request to change your movie queue or account details. Conceivably, such attacks could also allow someone to transfer money from your bank account, though that kind of theft would be much more difficult to pull off because of the higher level of security used by most financial institutions.

In the case of the Gmail flaw, if you visited a rigged site while logged into your Gmail account, embedded JavaScript code on that site could dispatch an invisible request to Google asking it to send your contact list to the site. You wouldn't even need to have Gmail open in your browser: If you chose the convenient 'Remember me' log-in option, or if you used the Google Toolbar or some other browser plug-in, you would be logged in as far as your browser was concerned.
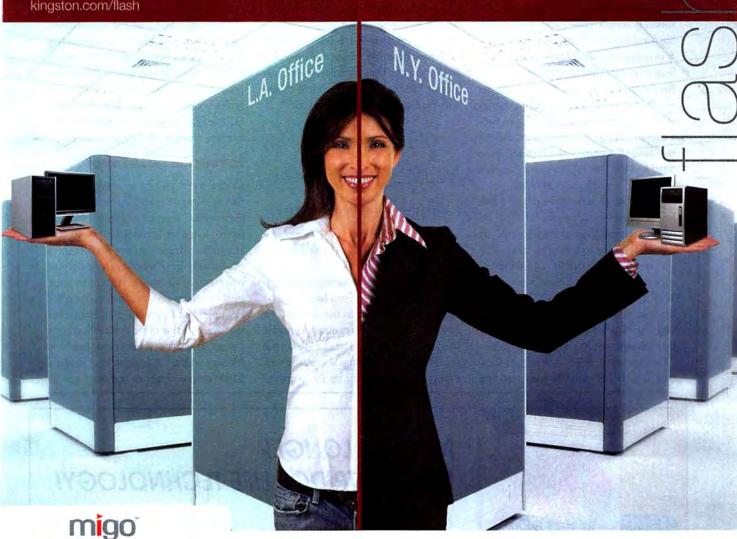
"The attack would be pretty much invisible," Grossman says. What's more, he notes, it's next to impossible to tell whether anyone actively exploited the hole during the relatively short interval between its public release and its fix.

Though the CSRF threat isn't trivial, you needn't completely distrust the Web yet. Banking and other financial sites will automatically log you out after a set period of inactivity. And attacks must be specially crafted for each site. An attack that worked on Google wouldn't work on Yahoo, for instance.

Another reason not to panic is that CSRF-type exploits are still in their very early stages, and Internet criminals have easier, more reliable ways to make a buck—such as by infecting computers with Trojan horses or creating botnets. But just as malware has grown much more sophisticated, CSRF threats undoubtedly will, too.

The NoScript Firefox add-on (available at find.pcworld.com/56230) can safeguard you against some CSRF threats by blocking JavaScript on unknown sites, but many attacks permutations will still work, unfortunately. Also, these forgeries don't depend on a particular browser, and will happily trick a vulnerable site by means of Firefox, Internet Explorer, or any other browser. In general, though, because the flaws exist in Web sites, the sites themselves will have to generate the fixes.

—Erik Larkin

ILLUSTRATION: MARK MATCHO

on handsets through their profit on your monthly service bill—hence the inevitable service-contract requirement (typically two years, sometimes one). Before you leap at such a deal, be sure to examine the fine print: Cingular, for example, demands that you commit to a $40-a-month all-you-can-eat data plan as well as a $40-a-month voice plan in order to get rebates that lower the price of the Treo 680 from $450 to $200 (see my review of the Treo 680 at find.pcworld.com/56485).

Often you'll see multiple rebate offers for a handset—such as an "instant" rebate that basically drops the price you pay online, followed by a mail-in rebate that requires service activation and the usual rigmarole of forms and proof of purchase. Why the different systems? "Sometimes the rebate is from [the handset maker], and sometimes it's from us," says Cingular spokesperson Ritch Blasi.

Carrier rebate offers can vary by location as well, because like most national companies, carriers have different sales territories whose executives are responsible only for their own results. "Rebates give them flexibility," Blasi explains. This is why you can't get a price quote for service or handsets on a carrier's Web site without first entering your zip code.

> Huge instant rebates indicate the value of a product has gone down.

Here's one way to make regional differences work for you: If you happen to be traveling when you're in the market for a new phone or wireless contract, consider checking the prices at a retail outlet in the area that you are visiting. My cousin back east is always astounding me with the bargains that he finds at local retailers.

While cell phones are rife with rebates, other product categories seem relatively bereft. Analyst Baker cites the TV industry as an example: Flat-screen TVs are hot products, and prices are tumbling, yet you rarely see a mail-in rebate offer for an LCD or plasma set. When vendors want to move more units, they offer sales.

ATTENTION SMART SHOPPERS

BAKER SAYS THERE is some evidence that rebates are losing favor. But where they persist, a smart shopper would be foolish to ignore them. Rebates also hint at what's going on in the market for a product category, which can be helpful when you're shopping. If you see huge instant rebates on a particular phone, for example, "that's probably an indication that the real value of the product has gone down," Baker says. (I notice that as of this January writing, Cingular is offering a $150 "online discount" on the Treo ▶

650, which is another way of saying that the product is nearing the end of its life.)

Mail-in rebates, in contrast, are more akin to sales and can come and go, depending on how well the product is moving. If you see one for an item you like, you can't assume that the rebate will be there in a month, so take note of the offer expiration dates (which usually appear somewhere on the rebate form).

Don't get me wrong—I still hate rebates. But not as much as I hate paying more for a product than I have to. ∎

Yardena Arar is a senior editor, Erik Larkin is an associate editor, and Amber Bouman is an editorial assistant for PC World. Send e-mail to 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.pcworld. com/31709, respectively.

Flash Drive Won't Store Any More Files

I HAVE A Memorex 512MB USB flash drive. I had used it only a couple of times when the drive reported that it was write protected. There is no switch letting me reverse that setting so that I can write files on the drive again. Memorex's technical support initially told me to reformat the drive, but the write protection prevents that. Then they told me to return the drive for an exchange. However, the drive contains sensitive financial data that I'm uncomfortable releasing. What else can I do besides destroying the drive and buying a new one?

I searched on 'flash drive write protection' and found that this seems to be a common issue with flash drives.

Keith Douglas, Avon Lake, Ohio

On Your Side responds: Most manufacturers require their customers to return defective products, in part so the company can investigate what went wrong and develop a solution. But after we contacted Memorex, it overnighted Mr. Douglas a replacement without insisting that he return the original drive.

The bigger issue, of course, is the flash drive's write protection. Memorex engineers believe it to be a failure with the chip set on the flash drive that controls the connection between the USB connector and the flash memory. They also maintain, however, that failure rates for flash drives, which do not have moving parts, are well below the industry standard for other types of hardware.

−Amber Bouman

Special Advertising Supplement

The most flexible solution for recovering lost data

Enhancements to R-Studio from R-Tools gives users added capabilities to retrieve Windows-based files

THE MOST INNOVATIVE SOLUTION for recovering business-critical data lost to a host of threats just got better.

R-Tools, the leader in smart data recovery solutions, has launched **R-Studio 3.6.** The newest version of this business continuity solution now allows users to preview almost all major file types before they are actually recovered, even if the prescribed application is not installed. For example, users of R-Studio 3.6 can preview a .pdf file regardless of whether Adobe Reader is installed.

These latest enhancements further build upon the lengthy list of capabilities of R-Studio as the ideal solution for recovering essential data that otherwise would be lost forever to viruses, malicious attacks, hardware failures, and oper-

ating system crashes. Plus, R-Studio is a Microsoft Vista-ready application.

Bundled with R-Studio 3.6 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 3.6 is one product on a fast-growing list of business continuity solutions from R-Tools, a list that now includes the recently released **R-Mail for Outlook**. This handy utility restores deleted information and repairs damaged Microsoft Outlook files when Outlook cannot open them, permitting 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**.

SPONSORED BY:
R-Tools Technology Inc.
www.r-tt.com
Go to find.pcworld.com/56379

CREDIT SCORE: CAPTURED

SOCIAL SECURITY NUMBER: CAPTURED

IDENTITY: CAPTURED

Who's lurking in your computer?

And how did they get there? You might be under surveillance and not even know it. The world of computer hacking has changed. When it comes to virus outbreaks, there's a deafening silence. No longer do we hear the constant noise, the almost weekly reports of viruses and worms hitting high profile targets.

The digital vandals writing malicious code have not all been captured and they haven't been rehabilitated; they're less visible only because many of them have regrouped and changed their purpose. The old objective was to create a big, loud, destructive splash. Today the intent of spyware writers and Trojan makers is to infiltrate your computer silently and secretly—not to destroy, but to steal. The thief asks, "How can I get as many credit card numbers, bank account logins, passwords and social security numbers as possible without anyone knowing that I even exist."

How can you as a computer owner "detect the undetectable" to prevent such a break-in? What no one needs is another "motion sensor" type solution that only turns on a light to help the thief see more clearly while ransacking your house. What every computer user really needs is a system that identifies intruders, freezes them immediately, and kills them on the spot.

This is exactly how Panda's Internet Security 2007 is designed to operate. It can tell the difference between a cat and a cat burglar, allowing the one to roam freely while accurately destroying the other. Highly powerful and easy to use, Internet Security 2007 is the modern way to stop a thief. Protect all of your valuable belongings and your identity with one simple, easy to use tool.

Never be a victim of identity theft. Get peace of mind. Install Panda Internet Security 2007 today.

Special introductory offer:

Protect up to 3 computers for one low price.
Buy now and receive a $20 rebate.

Go to www.pandasecurity.com/pcworld4 for details,
or call **1-800-603-4922** to order and mention this ad.

Internet Security 2007 and other Panda Software products are also available at:

STAPLES **COMPUSA** **circuit CITY** **Fry's** **MICRO CENTER** The Ultimate Computer Store **amazon**.com

Go to find.pcworld.com/56405

Eight Tips for a Faster Hard Drive

Defrag your hard drive the right way; remove big, useless files; find duplicates.

HAVE YOU UNCOVERED the secret to a faster drive yet? It's removing unnecessary files and defragging your drive. I've got the tools and tricks, so read on...

The Hassle: *I ran the Windows Disk Defragmenter, but when I tried another defragging tool, it said that my drive was still mostly fragmented. Which one should I believe?*

The Fix: Windows, right? Please. For one thing, the Windows tool misses Restore Points—files that are created and deleted each day, take up 13MB each (on my PC), and are scattered all over the drive. Also, third-party tools permit you to decide how to defrag—say, by packing the files tighter.

One defragger I recommend is Golden Bow Systems' $40 Vopt 8. This program is compatible with Vista and XP, and it defrags Restore Points. Among Vopt's neat extras are tools for deleting temp files; a slick feature that closes unnecessary apps, including Windows Services; and a way to automatically defrag multiple drives and then shut down the system. Get a trial at find.pcworld.com/56143.

No matter which program you use, get a better defrag with these simple tricks:

• Defrag early and often. Theoretically, defragging improves performance. PC World's lab hasn't found that to be consistently true. But here at Bass International labs, it's a different story. I didn't defrag my drive for six months and had thousands of fragmented files scattered about my hard drive. After defragging, my system seemed faster.

• Open applications don't get defragged, so close them all before you begin. Ditto for tools that reside in the system tray.

• Delete Temporary and Internet cache files using CCleaner, a free tool. You can download it at find.pcworld.com/56142.

Quick Tip: No matter how neat you are, I guarantee your drive has duplicate files. Ferret them out with Duplicate File Finder. It's free (find.pcworld.com/56144).

The Hassle: *I have a huge file (hiberfil.sys) on my drive. I can't delete it, and it doesn't move when I defrag my system. What gives?*

The Fix: That monster is a Windows file created automatically if you've ever closed down your PC while in Hibernate mode. So here's a good way to get rid of it. From Control Panel, choose *Power Options*, select the *Hibernate* tab, uncheck the *Enable Hibernation* check box, and click *OK*. If you want to use Hibernate after defragging, repeat these steps above and check the *Enable Hibernation* check box. Read more on hibernate and standby modes in *Windows Tips* (find.pcworld.com/56148).

The Hassle: *I was playing around with a program that examines my hard drive and saw tvDebug.log, a gargantuan 2GB file. What's the file for, and can I delete it?*

The Fix: It bugs me no end that Zone-Alarm stores log files that can grow into useless behemoths and slow down defragging. (They're stored in the \Windows\Internet Logs folder.) Deleting the files is a pain because I can't do it while Zone-Alarm is running. Since I'd rather not close that program, I use a little batch file to do the job for me automatically. Get my zipped file with a how-to and batch file at find.pcworld.com/56149. ∎

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.

TOOL OF THE MONTH

Find Colossal Files on Your Hard Drive

WINDIRSTAT IS A nifty tool that creates a graphical depiction of the contents of your hard drive; it's ideal for finding big files. Windirstat (available free at find.pcworld.com/56146) scans your drive and produces a treemap showing each file as a colored rectangle proportional to the file's size. In the screen capture at find.pcworld.com/56145, the big purple rectangle on the left filled with small rectangles is a slew of MP3 files; the green blob on the right signifies images. Click on a file name in the left panel to see where that file is on the color grid below. To jump to a file, select a large block on the color grid for it. Toolbar buttons let you zoom in on a cluster, copy a path, open the file, and more.

Five Ways to Put the Web in Your Pocket

Surfing the Net by phone can be a breeze—if you know a few tricks.

I HAVE A love-hate relationship with the Web. I love being able to stash all my stuff online—my e-mail, calendar, files, etc.—and access it wherever I happen to be. But I hate having to lug around a laptop and hunt down Wi-Fi connections.

My cell phone, on the other hand, has a browser and near-constant Net access. But the screen is too small for my aging eyes, and Web pages are too unwieldy to navigate using only my thumbs. Instead of making the screen bigger, I've figured out how to shrink the Web. Often I don't even need a smart phone (though I do need a phone with a WAP 2.0 browser). Here's how I bring the Web with me wherever I go.

Get thee to a mobile portal: All the major portals and news sites like those of the *New York Times* and CNN offer slimmed-down mobile versions without the graphical mess. In most cases you can just type "mobile" instead of "www" in your phone's browser; be sure to bookmark that version so you don't have to type the site's name more than once.

At press time Yahoo announced the beta of Yahoo Go 2.0 (mobile.yahoo.com/go), a portal with a nifty interface optimized for cell phones. But to run it you'll need a handset like the BlackBerry Pearl or the Nokia 6133. (My wimpy Samsung SGH-X497 wasn't powerful enough.)

"Mobilize" your favorite sites: Services like Skweezer.net can "skweeze" your favorite sites so you can see them on that teensy-weensy screen; via Skweezer you can also access your PC's address book, browser favorites, and POP3 e-mail from a phone. Or to use Google, enter any URL at find.pcworld.com/56246, and your pals

at the search service will automatically remove mobile-unfriendly formatting so you can better access the site on your phone. Bitty.com's Mobileplay Network (bitty.mobileplay.com) does the same for sites like Salon.com and (yes) PCWorld.com. These services work well on some sites but not other ones, so try before you fly.

Pack your blogs: Visit PhoneFeeds.com (www.phonefeeds.com) and enter the name of the blog or RSS feed you want to view on your phone. The site spits back a URL where you'll find a version of the blog customized for small screens. (You can see PCW's Techlog blog, for example, at find.pcworld.com/56516.) And since PhoneFeeds numbers are sequential, you can add a lot of blogs to your phone quickly by just changing one or two characters in each URL. Some blogs turn out better than others, though, and hyperlinks within blogs tend to get stripped out.

Text, don't surf: Don't bother wading through Web pages when all you need is a discrete bit of information, like local

restaurants, sports, weather, or flight times—use SMS (Short Message Service) instead. Send a text message to Google (46645) or Yahoo (92466) with the word "sushi" and your zip code, for example, and you will instantly receive the addresses and phone numbers of three raw-fish bars. (For more on Google texting, see *Cell Phone Tips*, page 126.) Yahoo's SMS goes a step further by letting you search for Wi-Fi hotspots, too.

Not all SMS services are quite so johnny-on-the-spot. 4Info (44636) offers information similar to that of Google and Yahoo SMS, plus things like jokes and pickup lines (don't ask). But getting answers took more than 10 minutes, and when I asked about Wi-Fi nets in Las Vegas, it served up a list of McDonald's restaurants. As if.

Stay synced: By the time you read this, companies like CoolMarks, Saki, and SharpCast will let you move photos, documents, contacts, and more from your cell phone to your PC, and vice versa. SharpCast Photo service, for example, allowed me to sync images across my phone, my computer, and the Web. Edit a photo on your PC, and the altered image shows up on your phone. The bad news? Many of these services work only with Windows Mobile phones (personally, I'd rather eat broken glass than use another Windows device).

Bottom line: Though I may not be able to ditch my laptop entirely, I'll be leaving it at home a lot more often. ∎

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.*

Shuttle XPC X200 Media Center PC
Combines innovation and cutting edge technologies with Windows Vista™

The experience of "Wow" starts now. Your digital hub is easier, safer, connected and packed with more entertainment at the touch of your fingers.

Introducing the **Shuttle XPC X200** digital media center small form factor PC that towers over the competition powered by Intel® Core™ 2 Duo Processor.

Enjoy your multimedia to the fullest day in and day out, right in your own living room.

For a limited time
Get *5% OFF* on any Shuttle full system desktop PC from March 1st until March 31, 2007.
Use PC World exclusive code **PEMPW09S**

■ 1 888 XPC 1818   ■ www.shuttle.com

Critical IE Graphics Flaw Resurfaces

Plus: More Office holes, and a major Adobe problem that affects all browsers.

IT'S BAD ENOUGH when crooks exploit bugs to ruin a home computer, but the consequences of a successful attack can be much worse. A substitute teacher in Norwich, Connecticut, found that out when a computer she was using in her classroom suddenly started showing pornographic pop-up ads to everyone in the class. She now faces up to 40 years in prison after being convicted of willfully showing her students the images. A security expert hired by her defense, however, says he found malicious software on the PC. (For more on the teacher's story, head to find.pcworld.com/56312.)

As you certainly know, Internet attacks often attempt to install porn-popping adware by exploiting the more dangerous types of bugs.

Last October I told you about one such problem in Internet Explorer involving Vector Markup Language, a rarely used, Microsoft-only Internet graphics format. Criminals launched multiple attacks exploiting the hole before Microsoft released a patch.

Criminals attack a near-twin of a prior, serious IE flaw.

And now, a second, very similar VML flaw is under fire.

Like its predecessor, this bug allows an attacker to take control of—or download porn-popping adware to—a PC running Windows XP Service Pack 2 or Windows 2000 SP 4 if the victim simply views a poisoned image within IE. Both IE 6 and 7 are affected, but IE 7 in Windows Vista is not.

You can obtain the patch through Automatic Updates, or you can download it from find.pcworld.com/56311.

OFFICE FIXES

MICROSOFT ALSO PATCHED critical security holes in Excel and in Outlook (Outlook Express is not affected). Both vulnerabilities are rated "critical" for the Office 2000 versions of the programs, but are downgraded to "important" (the second-highest severity rating on Microsoft's scale) for Office XP and 2003. The Excel holes are present in Works Suite 2004 and 2005, too. As usual, either flaw can be exploited if you open a tainted file (.oss for Outlook or .xls for Excel) as an attachment or Web download.

Again, if you have Automatic Updates turned on, you should be protected. If not, get the Excel patches (and more info) at find.pcworld.com/56310, and grab the Outlook patch at find.pcworld.com/56309. At press time no attacks against these holes were yet circulating. ∎

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

IN BRIEF

Early Vista Bug

WINDOWS VISTA MAY be much more secure than previous versions of Windows, but don't let your guard down just yet. Microsoft has acknowledged a privilege-escalation bug that affects XP and Vista alike. The problem, though not nearly as dangerous as many XP bugs, could allow an attacker to make system changes that Vista's User Account Control feature would otherwise block. Microsoft hasn't provided a planned fix date. For more information, see find.pcworld.com/56307.

QuickTime Flaw

APPLE HAS PATCHED another critical hole in its popular media software that affects both the Mac OS X and Windows (XP and 2000) versions. First revealed by the "Month of Apple Bugs" online project, the flaw enables attacks that use poisoned links starting with "rstp://" to take over your PC. Grab the patch at find.pcworld.com/56463.

BUGGED?

FOUND A HARDWARE or software bug? Send us an e-mail on it to bugs@pcworld.com.

ADOBE PDF BUG EASES WAY FOR THIEVES

ADOBE HAS PATCHED a new problem with cross-site scripting (or XSS) in its Acrobat and Reader browser plug-ins that, according to security researchers, gave criminals an incredibly simple way to enter your system. Adobe says attackers could exploit the flaw through one easy-to-add line of programming in a doctored PDF and thereby take control of a computer.

Any browser that has the plug-in loaded is affected, so users of Firefox and Opera are as much at risk as IE users. Versions 7.0.8 and earlier of Acrobat and Reader are vulnerable. Adobe recommends upgrading to Acrobat 8 or, if that isn't possible, to 7.0.9 (6.0.6 for users who are limited to older editions). Get all the updates and more details from find.pcworld.com/56308.

Need More Space?

Add an additional monitor with a **Matrox DualHead2Go**

See more. Do more. Be more productive.
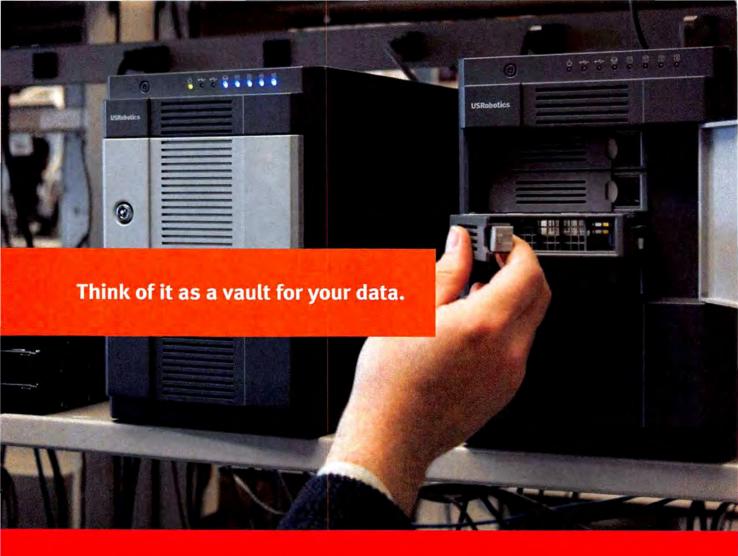
Matrox DualHead2Go is an easy to use, palm-sized box that lets you attach two monitors to your notebook or desktop computer. Don't limit yourself to one monitor, start experiencing the benefits of multi-monitor productivity today—it's simpler than you think.

Visit **www.dualhead2go.com/pcw** or call 1-800-844-8302 for full product details.

matrox™
Graphics for Professionals

REVIEWS & RANKINGS

EDITED BY YARDENA ARAR AND MELISSA PERENSON

The Web Works Wonders for Tax Filing

These five Internet-based tax-preparation services vary in their prices and features—and usefulness.

TAX-PREP SITES

VERY FEW PEOPLE like doing their taxes. But this year's editions of Web-based tax-prep services make the annual chore, if not enjoyable, at least easier than ever to complete.

Nearly a decade after the first clunky offerings appeared, online tax-filing sites have become almost as sophisticated as their desktop counterparts. They update automatically to reflect changes in the tax laws, and they enable you to store, retrieve, and print your return from any connected computer.

Concerned about security? All these sites say they keep your data on secure servers in data centers with physical and software safeguards. But dial-up users might want to stick with shrink-wrapped solutions: The process slows down considerably at 56 kilobits per second. (Go to find.pcworld. com/56501 to read reviews of top desktop tax software.)

TURBOTAX PREMIER'S Deduction Maximizer shows how your deduction data translates into deductions, and explains any differences.

I tried out the five most heavily promoted programs targeting mainstream tax filers—CompleteTax, TaxAct Ultimate, TaxBrain, TaxCut Online Premium, and TurboTax Online Premier Investments.

Overall, I found TurboTax the best for filers willing to pay a premium for detailed help. TaxAct remains the low-price leader, while TaxCut holds the middle ground.

All five services participate in the Internal Revenue Service's Free File program that offers free electronic filing if your adjusted gross income is $52,000 or less (see find. pcworld.com/56326).

To test these services, I enlisted the help of my dad, a CPA-certified pro who was initially skeptical of Web-based tax preparation. We invented data for a composite family—a married couple filing jointly, with a freelance business, a kid in college, and a live-in widowed mother-in-law.

We discovered that it pays to shop around: Costs range from $16 to more than $100 for a single federal and state return (with desktop software, you can create and print multiple returns for free). The services also varied widely in their ability to import data from personal finance software or last year's return.

Both of us came away generally impressed with Internet tax filing. But we found that not all of the services are savvy enough to detect user error.

THE FRONT-RUNNER

A MIRROR IMAGE of its venerable desktop counterpart, Intuit's TurboTax Online Premier Investments (www.

PHOTOGRAPHS: MARC SIMON

60

72

turbotax.com) soothes headaches for tax dunces. I loved its comprehensive, detailed interview even though it posed lots of questions that did not apply. Tax terms were clearly defined, and "Guide Me" buttons also provided assistance.

The service linked our data to other relevant documents so that we wouldn't have to enter it again: For example, after we input the registration fee for an automobile used partly for the freelance business, TurboTax entered the nonbusiness portion on our itemized deductions.

New this year are the Deduction Maximizer Center, which let us scan more than 350 deduction and credit opportunities, and BasisPro, which eased the hassle involved in determining historical cost bases of multiple stock transactions. Our federal summary showed the results of what we entered compared with what we would get in deductions, and explained the difference.

But at $76 for federal and one state filing, TurboTax is pricey, and it's still not perfect. We couldn't view specific tax forms, and there's no progress indicator to show where you are in the process.

We could import personal-finance data only from Quicken 2005 or later.

TurboTax Premier includes a thorough Schedule C interview for sole proprietors; most of them can save the $25 pre-

TAXACT ULTIMATE OFFERS good tax help, including links to relevant advice on each screen, yet costs only $16 for federal and state filing.

mium for the Home and Business version and stick with the Premier version.

THE CHEAP THRILL

AT $16 FOR a federal and one state form, 2nd Story Software's TaxAct Ultimate (www.taxact.com) is the low-price leader. Its interview section is less customizable than TurboTax's, and the screens sport a

distracting advertisement for getting an advance loan on a refund, but we liked the new interface, Q&A search, and program tutorial.

TaxAct's Tax Help was the second best in the group: Each page has relevant Q&As, a link to IRS form instructions, and detailed advice from *J.K. Lasser's Tax Guide*.

But like all other services we tested except TurboTax, it made us enter stock share values on a new screen for each transaction, even those involving the same stock.

We encountered interface glitches as well. After start-

ing the interview for the home-office deduction, we decided not to take it, backtracked to the screen asking if we wanted it, and checked No. But the service retained all the data anyway, which we didn't realize until we saw our suspiciously high tax refund. Also, it was too easy to skip major deductions, such as on a home mortgage and state taxes.

However, TaxAct impressed my dad by telling us the dollar amounts we had to exceed before claiming certain miscellaneous deductions; plus the service determined whether it was more worthwhile for us to file jointly or separately.

MIDDLE OF THE ROAD

H&R BLOCK TAXCUT Online Premium (www.taxcut.com) works well for those with at least a little knowledge of the tax-filing process. A questionnaire lets you tailor your interview by selecting applicable areas—a handy time-saver. But my dad felt that the questions were too general to ensure that people with special situations—tax-exempt bonds, for example—wouldn't overlook important areas.

The interview, while mostly comprehensive and logi- ►

cal, occasionally stumbled. When we said our fictional family's college student lived away from home for nine months, TaxCut asked about custody arrangements—even though we'd stated we were married and filing jointly. Also, it said we could claim our live-in mother-in-law as a dependent, without mentioning the requirement that her income total less than $3300.

Still, TaxCut is well priced ($40 for one federal and one state return), and it lets you ask an H&R Block tax professional one question (by phone, e-mail, or in person) for free.

AN ADEQUATE OPTION

CCH, CREATOR OF Complete-Tax (www.completetax.com), makes tax software primarily for businesses; but its online service for individuals is, sadly, a bare-bones affair.

Dad liked the self-employ-

COMPLETETAX SHOWS WHICH return areas are complete and which aren't—but links don't always go directly to the specific page.

ment section, which broke out questions on vehicle expenses and depreciable assets, and gave our phone the long-distance phone tax credit.

But CompleteTax was the only program that doesn't do part-year-resident tax returns, or ask for employer data on our 1099-MISC forms from freelance employers (while not required by the IRS, having this data on worksheets helps if you are audited).

The section on deductions fails to list all itemizable deductions, and it doesn't state that some expenses need to exceed a certain percentage of the filer's income to qualify.

On the positive side, help is solid—many terms were hyperlinked to explanations, and the "Frequent Questions" next to worksheets are mostly relevant. A progress checklist shows pages that are complete, incomplete, and not yet started—but links go only to sections, not to the specific pages. Also, CompleteTax didn't tell us which line items produced tax breaks, or show a running "current refund."

The $39 price (for a federal and state return) is good, but other sites offer better value.

PRICEY FORM-FILLER

GIVEN THAT TaxBrain (www.taxbrain.com) charges $90 to $100 (considerably more than any other service we tried) for our 1040 and one state return, we expected a dazzler of a service. Instead, we got pedestrian design, no as-you-go refund ticker, and few links to explanations or additional information. Live telephone support is free, but only until 4 p.m. PST on weekdays.

TaxBrain started by asking questions about our tax situation, and then listed all relevant forms and worksheets by their IRS name (W-2, Form 1099, Schedules A through D), putting check marks next to the ones we'd finished.

Because its online forms closely replicate IRS sheets, TaxBrain might work for people who just want to fill out their returns via the Web. A "preview return" link lets you inspect all forms, which can help you detect user errors.

But for $100 to fill out near replicas of federal and state forms, TaxBrain could at least provide more tax help and an easier-to-use interface.

—*Vanessa Richardson*

TAX SITE	PCW Rating	Cost	Features and specifications
1 **TurboTax Online Premier** **Best BUY** Investments www.turbotax.com	**91** Superior	• $50 federal • $76 federal + state	Features: Superior Design: Superior Tax help: Superior
▶ **Bottom line:** This is the most detailed, user-friendly service in the group—worth the premium price if you need hand-holding.			
2 **TaxAct Ultimate** www.taxact.com	**85** Very Good	• $10 federal • $16 federal + state	Features: Very Good Design: Average Tax help: Very Good
▶ **Bottom line:** TaxAct Ultimate is a terrific deal, but some interface flaws could trip up complex returns.			
3 **TaxCut Online Premium** www.taxcut.com	**85** Very Good	• $20 federal • $40 federal + state	Features: Very Good Design: Very Good Tax help: Average
▶ **Bottom line:** Solid features at a moderate price give this service appeal, but the questionnaire and online help fall short in places.			
4 **CompleteTax** www.completetax.com	**73** Good	• $26 federal • $39 federal + state	Features: Average Design: Mediocre Tax help: Very Good
▶ **Bottom line:** This service is adequate and decently priced, but mediocre design and lack of frills make other options better values.			
5 **TaxBrain** www.taxbrain.com	**69** Fair	• $70 federal • $90–$100 federal + state	Features: Average Design: Average Tax help: Average
▶ **Bottom line:** TaxBrain has the highest price and fewest features of the services we tested; it's best used to fill out IRS forms on the Web.			

CHART NOTE: Prices include electronic-filing fees. Go to find.pcworld.com/56502 for full reviews of each service.

Smart labeling with SmartLabels.

When you need to simplify, identify, organize, track, ship, or manage, the Smart Label Printer* from Seiko Instruments is the smart choice. Easily create custom labels with 1-D and 2-D bar coding, such as USPS Postnet, Code 39 or 128, UPC or EAN for retail products, MaxiCode, high-capacity PDF417 or Data Matrix using our bundled Smart Label software. Simply plug the printer into your PC, via the built-in USB or Serial port, and print labels quickly, as fast as one label per second, in clear, legible, machine-scannable 300 dpi. The Smart Label Printer is hassle free with no ink, noise or fuss thanks to our clean and quiet direct thermal printing. Choose from three great SLP models and our expanding line of SmartLabels.™ See all the SLP products at

www.siibusinessproducts.com

or at our authorized resellers.

Organize
Create professional folder labels with clear, no tear and moisture resistant SLP-1RLC.

Manage
Make durable equipment labels with moisture, tear and smear resistant SLP-TMRL or SLP-TRL.

Ship
Print envelope and package shipping labels with SLP-SRL or transparent SLP-SRLC.

Identify
Tag cables using SLP-35L, SLP-27210 or SLP-JEWEL.

Smart Label Printer 450

SII Seiko Instruments USA Inc.

Buy.com   CDW   COMP USA
Fry's ELECTRONICS   MICRO CENTER

Network invasions happen fast.
We happen faster.

*Sometimes bad things happen to good networks. Our nimble
approach to national network, data and voice solutions allows us to
respond quickly. Which means reduced downtime and increased efficiency for
you. That's why 95 percent of Fortune 500® companies choose Qwest.®
Get Qwest. Get Nimble.* **Call 1 877-816-8544 or visit qwest.com/business.**

QWEST
BUSINESS
SOLUTIONS

Qwest *Q*

Spirit of Service

Free Media Sharing

IF YOU'RE LOOKING for a better way to better manage the digital files on your hard drive, consider using Fabrik's Myfabrik (www.myfabrik.com). This media-focused online storage service enables you to store, view, and share content.

Myfabrik's no-cost Basic account lets you store up 1GB of files. A Premium account permits you to buy 2GB to 100GB of storage for a monthly fee of $0.49 per GB—a rate that gets less cost-effective as you approach the upper end. Myfabrik supports Internet Explorer 6 and Firefox 1.5 or later. The browser-based interface also lets you drag and drop to upload nested folders.

You can play media from within Myfabrik. The service supports such common formats as WMV, MPEG (-1, -2, and -4), FLV, and MP3; it won't play DRM-protected content.

To share media, you first select the files and then press the *Make Public* button; the content becomes available to others through your public

---

Myfabrik

Fabrik

PCW Rating `85` **Very Good**

Online media storage simplifies sharing content, but minimalist interface hides some features. Free (for up to 1GB of storage); monthly charge of $0.49 per GB (for 2GB to 100GB of storage)

find.pcworld.com/56283

MYFABRIK LETS YOU create theme- or event-based collections of documents and media, as well as play such content via the Web.

Myfabrik Web page. Or use the Embed button to generate the HTML code needed to publish stored images and music to sites like eBay or MySpace.

Initially, Myfabrik's small icons caused me to miss some features. For example, a tiny humanoid icon lets you share your account with up to ten guests. And to reveal the use-ful Experiences toolbar, I had to mouse over the window's bottom; the toolbar allows you to combine media into collections, such as photos and music for a birthday party.

Though it was slow on occasion and even froze several times, I found Myfabrik easy to use, and worth a look.

—Narasu Rebbapragada

Diskeeper 2007 Pro Makes Defragging Easy

EVERY TIME you save data onto your hard drive—or for that matter, use your PC—your operating system saves files as bits spread throughout your hard drive. And though file access time is less of a problem than it used to be, utilities such as Executive Software's Diskeeper 2007 Pro Premier can help optimize your system's performance.

In my informal hands-on experience, Diskkeeper 2007 Pro markedly accelerated my computer's speed; I now jump from my Windows XP log-in to a usable desktop in half the time it took previously, and access times for some frequently used files (such as images displayed in ACDSee 7.0) improved noticeably. With its optimization tools and friendlier interface (one that I liked), Diskeeper Pro goes beyond Windows XP's built-in defragmentation capabilities.

Our lab tests were less clear. Executive Software reps told us that systems equipped with the latest version of the product should show performance gains on our WorldBench 5 benchmark tests, but we saw no significant differences. (We did observe some small changes in the results for individual applications in our test suite; these changes were probably due to the files' new placement on the drive, after Diskeeper performed its defrag). WorldBench 5 does not measure boot-up time.

An older machine, highly fragmented from years of use, could see improvement from Diskeeper 2007 Pro Premier. But with newer systems, your mileage and benefit from the software may vary. Though it won't solve all of your PC's pokiness problems, the $50 investment may be worth it.

—Ramon G. McLeod

AFTER DISKEEPER ANALYZES your system, its clear coding shows what files are underperforming and may benefit from defragging.

Diskeeper 2007 Pro Premier

Executive Software

PCW Rating `84` **Very Good**

Defragmentation/optimization tools improve on those in Windows XP, but the impact on performance is hard to gauge. Street: $50

find.pcworld.com/56250

Want to make more of an impression for less?
Try a color printer.

Xerox® Phaser® 6180N

NEW

- Network-ready, solid ink color printer
- Print speed: up to 26 ppm black and 20 ppm color
- Print resolution: resolution: 600 x 600 x 4 dpi
- Optional duplexing
- USB and Ethernet, Parallel ports
- One-year onsite limited warranty

XEROX.

$499 PRINTER CDW 1117881
-50 INSTANT SAVINGS'
$449

Oki C6100n

- Network-ready, digital color LED printer
- Print speed: up to 32 ppm black, 26 ppm color
- Print resolution: 1200 x 600 dpi
- HD Color technology for rich color and sharp images
- Optional duplex capabilities
- USB and Ethernet ports

OKI

$899 PRINTER CDW 978324
-100 INSTANT SAVINGS'
$799

HP Color LaserJet® CP4005n

- Network-ready, color laser printer
- Print speed: up to 30 ppm black, 25 ppm color
- Print resolution: 600 x 600 dpi with HP ImageREt 3600
- Duty cycle: 80,000 pages per month
- USB 2.0 and Ethernet ports

invent

$1099⁹⁹
CDW 1059022

We're There With The Printing Solutions You Need.

No matter what size your business, there's more work, tighter timelines and smaller budgets than ever before. New printers, with more features and better reliability, can help. CDW has a full line of top-name printers. And with access to the industry's largest inventories, we're there to get you the right printers for your company's needs. So call today and start working better and saving more.

CDW

The Right Technology. Right Away.™
CDW.com • 800.399.4CDW

TOP 10 19-INCH MONITORS

New LCDs Show Sharp Text and Bright Graphics

TEST Center OF THE SIX monitors new to our chart this month, HP's third-place LP1965 earned the highest PCW Rating, due to strong text and graphics scores. The Dell UltraSharp 1907FP and the ViewSonic VG930m delivered strong image quality, too, though they displayed text better than graphics.

Two other newcomers— the Asus PG191 and the Eizo FlexScan S1921—finished

THE PLEASING HP LP1965 can tilt, swivel, and pivot with ease.

eighth and ninth, mostly because of higher-than-average prices. The Eizo has a staid design, but the Asus is unique: Its touch-activated on-screen controls can make a musical sound when you change a setting. It has numerous screen modes for watching movies or playing games, and a built-in 1.3-megapixel camera.

—*Kalpana Ettenson*

ONLINE

FOR MORE INFORMATION about the monitors in this chart, including details on how we tested them, go to find.pcworld.com/56330.

	19-INCH LCD	PCW Rating	Performance	Features and specifications
1	**ViewSonic VP930b** **Best BUY** $329 find.pcworld.com/50872	**82** Very Good	• Graphics quality: 75.1 • Text quality: 78.1 • DVD motion quality: Average	• Inputs: Analog and digital • Adjustments: Multiple • Response time: 8ms • Response type: Gray-to-gray
	► **Bottom line:** A stable stand keeps this model in place even while you use the smooth physical adjustments.			
2	**NEC MultiSync 90GX2** $349 find.pcworld.com/50838	**82** Very Good	• Graphics quality: 78.8 • Text quality: 84.4 • DVD motion quality: Average	• Inputs: Analog and digital • Adjustments: Tilt and swivel • Response time: 4ms • Response type: Gray-to-gray
	► **Bottom line:** NEC's glossy-screen model showed crisp text; the eraserhead-like NaViKey makes scrolling through screen menus a breeze.			
3	**HP LP1965** $339 NEW find.pcworld.com/56322	**81** Very Good	• Graphics quality: 78.8 • Text quality: 79.9 • DVD motion quality: Very Good	• Inputs: Digital only • Adjustments: Multiple • Response time: 6ms • Response type: Gray-to-gray
	► **Bottom line:** This model showed sharp text and colorful graphics. Its clean design and easy adjustments also set it apart.			
4	**Dell UltraSharp 1907FP** $309 NEW find.pcworld.com/56316	**80** Very Good	• Graphics quality: 72.9 • Text quality: 80.6 • DVD motion quality: Very Good	• Inputs: Analog and digital • Adjustments: Multiple • Response time: 8ms • Response type: Gray-to-gray
	► **Bottom line:** Dell's 19-incher displayed clean text, but its graphics didn't look as vibrant as those on other models.			
5	**ViewSonic VG930m** $279 NEW find.pcworld.com/56319	**79** Good	• Graphics quality: 72.0 • Text quality: 78.0 • DVD motion quality: Very Good	• Inputs: Analog and digital • Adjustments: Multiple • Response time: 8ms • Response type: Rise-and-fall
	► **Bottom line:** With stronger text than graphics, the VG930m should suit office work focused on word processing and spreadsheets.			
6	**Samsung SyncMaster 971P** $380 NEW find.pcworld.com/56317	**78** Good	• Graphics quality: 75.9 • Text quality: 81.8 • DVD motion quality: Very Good	• Inputs: Analog and digital • Adjustments: Multiple • Response time: 6ms • Response type: Gray-to-gray
	► **Bottom line:** The Samsung showed sharp, clear text in our tests. Its uniquely shaped stand houses the power button.			
7	**Soyo Dymond DYLM019A** $189 find.pcworld.com/50740	**77** Good	• Graphics quality: 73.9 • Text quality: 84.2 • DVD motion quality: Average	• Inputs: Analog and digital • Adjustments: Tilt only • Response time: 16ms • Response type: Gray-to-gray
	► **Bottom line:** This bargain LCD presents sharp text. Don't expect many features or a generous service policy, though.			
8	**Asus PG191** $449 NEW find.pcworld.com/56318	**76** Good	• Graphics quality: 71.7 • Text quality: 77.1 • DVD motion quality: Very Good	• Inputs: Analog and digital • Adjustments: Tilt and swivel • Response time: 2ms • Response type: Gray-to-gray
	► **Bottom line:** Though this monitor fell behind other models on text and graphics, it includes a Webcam and numerous screen modes.			
9	**Eizo FlexScan S1921** $599 NEW find.pcworld.com/56321	**76** Good	• Graphics quality: 78.0 • Text quality: 80.1 • DVD motion quality: Very Good	• Inputs: Analog and digital • Adjustments: Multiple • Response time: 20ms • Response type: Gray-to-gray
	► **Bottom line:** With fine text and strong graphics complementing a staid design, the expensive Eizo would fit well in corporate environments.			
10	**CTX Technology F973** $339 find.pcworld.com/46534	**72** Good	• Graphics quality: 77.4 • Text quality: 79.5 • DVD motion quality: Average	• Inputs: Analog and digital • Adjustments: Tilt only • Response time: 12ms • Response type: Gray-to-gray
	► **Bottom line:** This low-priced model delivers excellent image quality; the physical adjustment options and tech-support hours are limited.			

CHART NOTE: Prices and ratings are as of 2/9/07.

PHOTOGRAPH: MARC SIMON

NO ROOM FOR BUSINESS IN YOUR OFFICE?

800.359.5520 • www.sanus.com
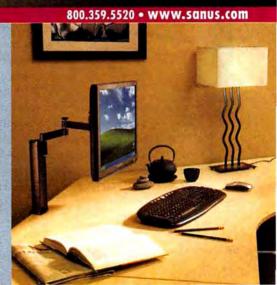
A flat panel monitor on a Sanus VisionMount™ desk mount works better.

The right desk mount can really make the room. So go with the leader: Sanus VisionMount. Getting your flat panel monitor up and out of the way will help organize your desk...and your life. Clamp it to your desk and hide your cables in the wire channel, then you're ready to tilt and swivel your monitor — even pull it out and push it back for perfect viewing. Put visionmount.sanus.com at the top of your to-do list today.

SANUS™
VISIONMOUNT

Photoshop CS3 Clears Away the Clutter

IMAGE EDITING

BECAUSE IT BRIMS with so many image-editing tools, the biggest challenge facing Adobe Photoshop CS3 may be where to stuff them all. This latest version of Photoshop adds tools and enhancements, but notably it cleans up its act with a simple yet effective approach to organizing palettes.

I tried out the software in beta form; Photoshop CS2 users can download the beta from Adobe's site. Photoshop CS3, which will be Microsoft Windows Vista–compatible, will anchor Adobe's full Creative Suite, expected later this year. On its own, the shipping version will sell for $649.

Photoshop CS3 unveils an important interface upgrade: resizable palette buttons with fly-out capabilities (matching those of other Adobe apps). Single- and dual-monitor users can benefit from this change.

You can reduce the buttons to tiny size, or you can tear off the palettes and park them around your screen, as with previous Photoshop versions. You can arrange the buttons in one or two columns and choose only the palettes you want. At their smallest, the buttons are narrower than the tools palette (which also got a minor makeover of its own, so you can resize it to be one column or two).

The software's redesigned setup makes using the palettes easier, as well. To switch layers, for example, just click a palette's tiny icon, and the full palette pops open. Click the layer you want, and then click back to your image: The palette closes automatically.

THE AUTOMATICALLY COLLAPSIBLE fly-out palettes in Photoshop CS3 save screen space and reduce the need for clicking.

SELECTION PROCESS

PHOTOSHOP CS3's Quick Selection tool simplifies choosing the portions of your image to act on, too. With this tool, you don't have to hold down the Shift key to add to your selection; instead, click the areas of the image you want to select, and you're done (ideal for making a complex selection while holding a beverage).

I found that the tool works very well with sharp, high-contrast color images, where it functions as a smarter, faster magic wand tool. But unlike the wand, the Quick Selection tool (in its beta form, at least) lacks a tolerance setting; as a result it often selected the full image after a few clicks.

I was more impressed with CS3's new Refine Edge tool. After making a selection, you can adjust its radius, contrast, and smoothness by using the tool's sliders. Refine Edge is great for clearing away rough edges and extraneous pixels.

CS3's Auto-Align Layers let you combine multiple images (which you arrange as separate layers in the same file). The tool matches up common elements in the images; then you can use other tools to choose portions of whichever image you want. So if Bob has his peepers open in one and closed in another, you can arrange to display his baby blues instead of his eyelids.

Every year, Photoshop gets better tools. The refinement I liked most this time around is the new palette treatment. Tools work better when you have room to use them.

—Alan Stafford

Photoshop CS3

Adobe

Preproduction software, not rated

Adobe's high-end image editor gets new tools, but the interface enhancements are even better.

Street: $649

GOTCHA!

Your Not-So-Free Phone

THE FREE PHONE your wireless carrier offers you every two years might cost a little more than you'd planned. The reason: The phone's lithium ion battery might not go the distance. Francis Ho, manager at Citicomm Wireless, a cell phone retailer, says some batteries in the cell phones he sees last only six months to a year. Ho recommends getting equipment insurance from your carrier (Cingular charges $5 per month) as a safeguard. But insuring the battery isn't always cost effective. A replacement cell may cost you only $25 to $40–so unless your battery dies very quickly, it's often cheaper to buy a new one.

Many things affect battery longevity. CEO Brian Cleveland of Percept Technology Labs, a company that tests batteries, recommends that you not leave your phone in a cold environment (such as in a car overnight). "That's a factor in shorter-than-two-year life for [lithium ion] batteries," he says.

–Narasu Rebbapragada

A System in the Round

DESKTOP PC

THE NEW SONY **VAIO VGX-TP1** is certainly eye-catching: This white-gray cylinder looks more like a stand to place something on than like a PC. But a PC it is, and it's designed to fit unobtrusively into your living room, or any other room where you want to watch TV.

THE UNIQUELY DESIGNED Sony VAIO VGX-TP1 PC runs quietly.

VAIO VGX-TP1

Sony

Preproduction hardware, not rated

An eye-catching design and quiet operation make this media-centric but pricey (no monitor is included) system a living-room contender.

Street: $1600

find.pcworld.com/56342

For its diminutive size (10.6 inches in diameter and less than 4 inches high), the unit has impressive features. You get a 1.83-GHz Intel Core 2 Duo 5600 chip, 2GB of RAM, a 300GB hard drive, integrated graphics, a multiformat DVD burner, built-in wireless connectivity, and Windows Vista Home Premium. The matching wireless keyboard and remote are comfortable to use and equally compact.

The unit that I looked at was whisper-quiet. We didn't formally test it in the PC World Test Center because it was a preproduction model; but informally, the performance it delivered seemed satisfactory for handling typical computing tasks, as well as such multimedia tasks as viewing TV.

The VGX-TP1 supplies the ports you'd expect to find in a media-oriented PC, including a VHF/UHF connection. In the front, you get two USB 2.0 ports (plus two in back), an i.Link (FireWire 400) port, an SD card slot, and a Memory Stick slot. A sliding slot cover conceals the ports—a nice touch, though you'll probably have that cover open frequently. The computer comes with a small antenna and an HDTV USB adapter, as well.

The VGX-TP1 will sell for about $1600 when it ships in March. That's a bit steep for what you get, but the system's looks and quiet operation will make it more welcome in the home than a standard PC.

—*Anush Yegyazarian*

HP's All-in-One PC Offers a Touch Screen

DESKTOP PC

TEST Center IT'S RARE FOR a PC to make a statement about both form and function. But Hewlett-Packard's $1779 **TouchSmart IQ770 PC** does so with flair. This elegant, Microsoft Vista Home Premium–based system incorporates a 19-inch wide-screen touch display that can double as a navigation tool.

Though you won't want to rely exclusively on the touch screen when you are sitting at a desk (believe me, your shoulder will eventually protest the reach), it provides a highly responsive alternative to traditional mouse navigation. The touch screen contributes vitally to the Touch-

HP'S TOUCHSMART PC all-in-one has a stylish, angled design.

Smart's adaptability to a wide range of environments in the home, from living room to home office to kitchen. The all-in-one comes with a comfortable, compact, wireless keyboard that tucks away beneath the PC; a wireless laser mouse; and a remote control. System extras include an integrated 1.3-megapixel Webcam; a dual-slot, multiformat memory-card reader; a microphone; analog and over-the-air digital TV tuners; 802.11a/b/g wireless, Bluetooth, and gigabit ethernet connectivity; a slot-loading DVD burner that does LightScribe label etching; and dedicated playback buttons.

The front-accessible DVD burner and memory card slots are mounted in the base below the screen. Oddly, the unit lacks HDMI-out, a surprising omission in view of HP's inclusion of a digital tuner.

Regrettably, the Touch-Smart PC is more about overall presentation than performance. Equipped with 2GB of memory, a 1.6-GHz Turion 64 X2 TL-52 mo-bile CPU, and integrated nVidia GeForce Go 7600 graphics, the system strolled to a modest score of 76 on WorldBench 6 (beta), significantly below the marks we have seen from comparably priced value systems running more-powerful desktop processors.

But performance aside, I enjoyed using the TouchSmart IQ770 PC. Its unique design makes it a good choice for a supplemental, media-friendly system in the home.

—*Melissa J. Perenson*

TouchSmart IQ770 PC

HP

PCW Rating 81 Very Good

PC with touch-screen display is intelligently put together, but you'll pay a premium for its gorgeous all-in-one design.

Street: $1779

find.pcworld.com/56262

---

acer

Acer® F-20"

- 20" wide-screen TFT LCD, Acer CrystalBrite Technology
- 1680 x 1050 native resolution
- 800:1 contrast ratio
- 176° horizontal viewing angle
- 176° vertical viewing angle
- Two 5.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness

- 8ms gray-to-gray response time
- External power adapter
- Gloss black/red color

$399

(ET.L380B.063)

acer

Acer AL2616Wd

$759
(ET.G16WP.001)

- 26" wide-screen TFT LCD
- 1920 x 1200 native resolution
- 800:1 contrast ratio
- 178° horizontal viewing angle
- 178° vertical viewing angle
- VGA, DVI-D (HDCP) signal connectors
- 500 cd/m² brightness
- 5ms gray-to-gray response time
- Internal power adapter
- Silver color

Acer AL2416Wd

$649
(ET.L6102.018)

- 24" wide-screen TFT LCD
- 1920 x 1200 native resolution
- 1000:1 contrast ratio
- 178° horizontal viewing angle
- 178° vertical viewing angle
- VGA, DVI-D (HDCP) signal connectors
- 500 cd/m² brightness
- 6ms gray-to-gray response time
- Internal power adapter
- Silver color

Acer AL2216Wbd

$299
(ET.2216B.0D0)

- 22" wide-screen TFT LCD
- 1680 x 1050 native resolution
- 700:1 contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI-D (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

Acer AL1917 Cbmd

$229
(ET.1917B.0DC)

- 19" TFT LCD
- 1280 x 1024 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

Acer AL1916W Abd

$189
(ET.1916B.WDA)

- 19" wide-screen TFT LCD
- 1440 x 900 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

Acer AL1717 Bbmd

$169
(ET.1717B.MD8)

- 17" TFT LCD
- 1280 x 1024 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 8ms response time
- Internal power adapter
- Black color

Home Entertainment

Acer delivers remarkable solutions for breathtaking mobile multimedia entertainment. Cutting-edge mobile technology combined with ultra-bright screens, powerful graphics and complete connectivity make these the ideal choice for no-compromise entertainment on the go.

Acer® Aspire™ 3100
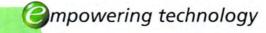
- Mobile AMD Sempron™ Processor 3400+
  - AMD PowerNow!™ Technology
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology[2]
- Genuine Windows Vista™ Home Basic
- 512MB DDR2 SDRAM
- 80GB[3] hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display, Acer® CrystalBrite Technology
- Integrated ATI™ Radeon™ Xpress 1100 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty[4]

Acer Aspire 3100-1868

$599

Mobile AMD Sempron™ Processor 3400+
Genuine Windows Vista™ Home Basic
(LX.AX60Y.029)

ℯmpowering technology

Acer Empowering Technology

One touch of the Empowering Key and you can easily take control of your notebook's security, performance, settings and communications.

Acer Technology for Your Mobility

Acer QuickCharge

Found on select models, Acer QuickCharge technology enables the notebook's battery to be 80 percent fully charged in just one hour.

Acer GridVista

Easy-to-use software designed to automatically split the screen in up to four separate windows and make the most of available screen space.

acer

acer

Acer® AcerPower™ 1000

AMD 64 Athlon

Windows Vista™ Capable

- AMD Athlon™ 64 Processor 3800+
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology[2]
  - Cool'n'Quiet™ Technology
- Genuine Windows® XP Professional
- 512MB DDR2 SDRAM
- 80GB[3] SATA hard drive
- DVD-Dual drive (DVD+/-RW)
- Integrated NVIDIA® GeForce® 6150 graphics
- Gigabit LAN
- USB keyboard and mouse
- 2.4" W x 9.8" D x 7.9" H
- One-year limited warranty[4]

Acer AcerPower 1000-UA382P

$549

AMD Athlon™ 64 Processor 3800+
Genuine Windows® XP Professional
802.11b/g WLAN

Acer AcerPower 1000-UA381P

$529

AMD Athlon™ 64 Processor 3800+
Genuine Windows® XP Professional

Ultra-Compact Efficiency

The AcerPower 1000 delivers desktop-level performance in a system that's just one-tenth the size of a typical tower desktop. Plus, operation is ultra-quiet and power consumption low.

Acer® Projectors with DLP® Technology

- 3700 ANSI lumens
- XGA (1024 x 768) native resolution
- UXGA (1600 x 1200) maximum resolution
- 2500:1 contrast ratio
- 7.7 lb. (3.5kg)

(EY.J2901.012)

Acer PD726W Wireless Projector
$1,669

PICTURE BY DLP® TEXAS INSTRUMENTS

Acer XD1280D Multipurpose Projector
$999

Home Entertainment

Acer® Aspire™ T180

- Up to AMD Athlon™ 64 X2 Dual-Core Processor
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology[2]
  - Cool'n'Quiet™ Technology
- Genuine Windows Vista™ Home Premium or
  - Genuine Windows Vista™ Home Basic
- DVD-Dual drive (DVD+/-RW)
- 9-in-1 card reader
- Integrated NVIDIA® GeForce® 6100 and
  NVIDIA® nForce® 430 graphics
- Gigabit LAN, V.92 modem
- PS/2®-style keyboard and mouse
- One-year limited warranty[4]

Display sold separately.

Acer Aspire T180-UD381A
$549

AMD Athlon™ 64 X2 Dual-Core Processor 3800+
Genuine Windows Vista™ Home Premium
1GB DDR2 SDRAM and 250GB[3] SATA hard drive

Acer Aspire AST180-UA380A
$499

AMD Athlon™ 64 Processor 3800+
Genuine Windows Vista™ Home Premium
1GB DDR2 SDRAM and 160GB[3] SATA hard drive

Acer Aspire AST180-US340B
$399

AMD Sempron™ Processor 3400+
Genuine Windows Vista™ Home Basic
512MB DDR2 SDRAM and 160GB[3] SATA hard drive

Prices shown are estimated street prices and do not include tax or shipping.
Retailer or reseller prices may vary.

- 2600 ANSI lumens
- XGA (1024 x 768)
  native resolution
- SXGA (1280 x 1024)
  maximum resolution
- 2200:1 contrast ratio
- 4.8 lb. (2.2kg)

(EY.J4301.007)

Acer PD311
Portable Projector
$739

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

(EY.J3401.006)

acer

Products That Smooth Your Vista Migration

MOVING TENDS TO be stressful, and migrating apps and files from a Windows XP PC to a Windows Vista system is no exception. Belkin's Easy Transfer Cable for Windows Vista ($40) and Laplink's PCmover for Windows Vista ($60) can do some (though not all) of the heavy lifting involved in transferring programs and data to a new PC, but their help varies in quality and quantity.

Belkin's bidirectional USB 2.0 cable works with the Easy Transfer software in Windows XP and Vista for moving documents and settings only. You must install the included driver on your old Windows XP PC (no installation is required for Vista) and then plug the cable into both systems. Easy Transfer takes over and starts the migration. (I didn't try the limited edition of PCmover—also for documents and settings only—that Belkin throws in.)

ASK OUR EXPERTS

LAPLINK'S PCMOVER FOR Windows Vista handles the heavy lifting when you transfer applications and files from your old PC to a new one.

To move apps as well, you must install and run the beta of Easy Transfer Companion (a free download from Microsoft) and install it on both the old PC and the new one. Before beginning the transfer, the Belkin software creates a report identifying both the programs that it supports and the ones that may be problematic (iTunes, for example). By default, the software does not transfer any problem apps, but you can opt to have it try.

I had to restart both applications (Transfer and Transfer Companion) before the transfers would commence. Using the two-step migration process to move 27GB of content from my laptop took about 3.5 hours. Some games and utilities got left behind, but at the end I could run all my major productivity apps, including Lotus Notes 7 and Adobe In-Copy CS2, on the new machine. Another plus: You may use the product to perform as many migrations as you wish.

LAPLINK OF LUXURY

IN CONTRAST, YOU can use Laplink's costlier PCmover (which also comes with a bidirectional USB 2.0 cable) for only one full-blown migration (extra licenses sell for about $38; the retail version is $70

and adds file-synchronization software), and you must install it on both PCs. But PCmover justifies its price with a polished, easy-to-use interface that beats Windows Easy Transfer hands down. The entire move is a one-step process; in my case, 27GB of data took the same 3.5 hours, but I didn't have to return midway through to start a different migration app. The setup screens let you work out potentially confusing specifics, such as whether the PC is the old or new system, thereby eliminating the repeated setup glitches I ran into with Belkin's kit.

PCmover was not without flaws, however. For some reason it didn't import my Internet Explorer bookmarks but did manage to make the Vista Start menu look like the old XP version—a result that I didn't expect. Like Easy Transfer Companion, it failed to move some applications, including a few that seemed to have transferred but didn't run when I tried to launch them.

If your budget can handle it, pay the extra $20 for PCmover to minimize the hassle. If you are reasonably tech savvy, or if you have to migrate several PCs and want to save a potentially significant amount of cash, the clunky Belkin/Microsoft approach may suffice.

—*Yardena Arar*

Processor vs. Memory

I'M LOOKING INTO purchasing a new PC. Should I spend my money buying more RAM or a higher-performing CPU?
Martin Seagrave, Sheffield, United Kingdom

Senior Editor Kalpana Ettenson responds: If you have a limited budget, your first goal should be to get as much RAM as possible in your new PC. The reason for such a priority is that a new system running Windows Vista needs at least 1GB of RAM to do anything worthwhile. Having 2GB of RAM is ideal and will significantly improve performance on hard-core tasks such as video editing and gaming. If you still have money left over, you can buy a faster CPU, or you can configure your hard drives in a RAID setup, to get more bandwidth from your storage media.

Belkin Easy Transfer Cable for Windows Vista
Belkin
PCW Rating 76 Good
Unlimited but clumsy Vista migration at a good price.
Street: $40
find.pcworld.com/56341

PCmover for Windows Vista
Laplink
PCW Rating 80 Very Good
Easy-to-use migration software handles one XP-to-Vista move.
Street: $60
find.pcworld.com/56340

A Frame That Looks as Pretty as Your Pictures

PHOTO FRAME

PRINTING YOUR DIGITAL pictures isn't the only way to enjoy and display them. A digital photo frame, such as the $199 Pandigital DPF80-2 model I looked at, is a viable alternative for showcasing collections of digital images.

The Pandigital boasts 64MB of internal memory; four media card slots; an 800-by-600, LED-backlit, 8-inch display; a

DPF80-2
Pandigital
PCW Rating 79 Good
This frame showcases beautiful images on its LED display, but its controls could be easier to use.
List: $199
find.pcworld.com/56263

tiny remote control; and two swappable frames (one black wood and the other acrylic). The device has two USB 2.0 ports (one of which is a mini-USB connector) for linking it to a PC or other devices.

In my hands-on testing of a shipping version, the screen showed brilliant images; my photos (displayable either one at a time or in a slide show) were easy to see clearly even in moderate ambient light. And the task of attaching the frame to a flash drive went smoothly.

I discovered several quirks. The graphical main menu is a friendly interface, but you do not get a standard, nested file-folder structure. This is a big negative if you need to locate

PANDIGITAL'S DIGITAL PHOTO frame has a crisp, LED-backlit display.

a specific file on a chock-full, high-capacity USB drive or memory card, or if you want to separate your collections of media into subject-oriented folders. Also, the device does not automatically rotate vertical images (you can rotate individual images, but if you revert to slide-show mode later, the rotation won't stick).

The multitalented Pandigital can also play music and videos, but those added media-playback capabilities are tangential to displaying digital pictures. And that's a job it handles quite well: This model's bright, crisp screen and its memory card slots helped it earn a spot on my desk.

—*Melissa J. Perenson*

Create Digital Slide Shows for Video, Too

SLIDE-SHOW SOFTWARE

YOU'VE RETIRED YOUR old Kodak Carousel, but you still want to create slide shows that you can easily share with family, friends, or clients via a PC or television. I tried a shipping version of the $70 ProShow Gold 3.0, a specialized utility that offers a broader range of tools for making digital slide shows than do other apps with slide-show creation abilities.

ProShow Gold 3.0
Photodex
PCW Rating 80 Very Good
ProShow's interface may be complex, but it lets you control the creative minutiae of your image and video slide shows.
List: $70 ($45 upgrade)
find.pcworld.com/56264

In this latest iteration of Pro-Show, the complex interface remains much the same, save for the addition of a startup screen that introduces newcomers to setting up projects.

You can drill down to adjust minutiae such as captions and transitions for individual photographs (for example), and you can seamlessly intermix images with video clips in a single slide show by using a drag-and-drop timeline.

Among the slew of debuting features are enhanced editing tools; animated caption effects; motion effects (such as panning through, zooming in, or rotating a given image) that you can apply to a specific image or video; and improved tools for adding audio.

PROSHOW GOLD CAN adjust the transitions between images.

Supplementing the previous version's support for output to DVDs, CDs, VCDs, SVDs, Web pages, and self-executable files, ProShow Gold 3.0 allows you to output to the YouTube-friendly Flash Video (FLV)

format, as well as to Windows Media Video and QuickTime.

For people who are serious about generating photo/video slide shows, ProShow Gold 3.0 is the application to beat.

—*Melissa J. Perenson*

TOP 10 LAPTOPS

Big-Screen Fujitsu, Stylish Sony Make Chart

TEST Center TWO OF THE five new notebooks we tested this month earned a fifth-place ranking—one on each side of our split chart. At the time of our evaluation, Windows Vista was not yet available, but all five laptops we tried are ready to be upgraded to the new OS.

Among the desktop replacements, Fujitsu's Life-Book N6420 has the same 2-GHz Core 2 Duo T7200 CPU as the reigning Best Buy, HP's Pavilion dv9000t, but it carries only 1GB of DDR2-

FUJITSU'S LIFEBOOK N6420 is well designed despite its bulk.

667 SDRAM versus the HP notebook's 2GB. Though the N6420 produced a respectable WorldBench 5 score of 104, it turned in poor battery life.

On the all-purpose list, the Sony VAIO VGN-N170G performed worse than most current chart contenders. But at $1100, this stylish laptop is reasonably priced.

—*Narasu Rebbapragada*

ONLINE

FOR MORE INFORMATION on the laptops reviewed in this month's chart, including testing details, go to find.pcworld.com/55176.

DESKTOP REPLACEMENT	PCW Rating	Performance	Features and specifications
1 HP Pavilion dv9000t **Best BUY** $2400 find.pcworld.com/55603	**86** Very Good	• WorldBench 5 score: 117 Superior • Overall design: Very Good • Tested battery life: 2:36	• 2-GHz Core 2 Duo T7200 • 17-inch wide screen • 8 pounds • HD DVD-ROM/DVD±R DL/DVD±RW/-RAM
▶ **Bottom line:** The dv9000t is a powerful notebook capable of handling any type of work comfortably.			
2 Toshiba Qosmio G35-AV660 $3000 find.pcworld.com/55610	**83** Very Good	• WorldBench 5 score: 109 Very Good • Overall design: Superior • Tested battery life: 3:00	• 2-GHz Core 2 Duo T7200 • 17-inch wide screen • 10.3 pounds • HD DVD-ROM/DVD±R DL/DVD±RW/-RAM
▶ **Bottom line:** The Qosmio can't be beat for the ultimate notebook multimedia experience. It's big and heavy, but includes tons of extras.			
3 Alienware Area-51m 5750 $3109 find.pcworld.com/55601	**82** Very Good	• WorldBench 5 score: 125 Superior • Overall design: Very Good • Tested battery life: 1:52	• 2.33-GHz Core 2 Duo T7600 • 17-inch wide screen • 8.8 pounds • DVD±R DL/DVD±RW
▶ **Bottom line:** The 5750 is a fast gamer laptop with superb sound. It lacks a TV-tuner option, however, as do many comparable systems.			
4 HP Compaq nx9420 $1699 find.pcworld.com/52718	**80** Very Good	• WorldBench 5 score: 101 Very Good • Overall design: Good • Tested battery life: 3:34	• 2.16-GHz Core Duo T2600 • 17-inch wide screen • 7.4 pounds • DVD±R DL/DVD±RW
▶ **Bottom line:** This mobile workstation offers top performance and better-than-average battery life.			
5 Fujitsu LifeBook N6420 $2499 NEW find.pcworld.com/56238	**80** Very Good	• WorldBench 5 score: 104 Very Good • Overall design: Superior • Tested battery life: 1:21	• 2-GHz Core 2 Duo T7200 • 17-inch wide screen • 9.7 pounds • HD DVD-ROM/DVD±R DL/DVD±RW/-RAM
▶ **Bottom line:** This model has a beautiful screen and can accommodate a second hard drive, but it's bulky and has poor battery life.			
ALL-PURPOSE LAPTOP			
1 Dell Inspiron E1505 **Best BUY** $1139 find.pcworld.com/55612	**83** Very Good	• WorldBench 5 score: 102 Very Good • Overall design: Very Good • Tested battery life: 5:32	• 2-GHz Core 2 Duo T7200 • 15.4-inch wide screen • 6.9 pounds • 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.			
2 Lenovo ThinkPad R60 $1299 find.pcworld.com/55117	**80** Very Good	• WorldBench 5 score: 98 Very Good • Overall design: Good • Tested battery life: 6:02	• 2-GHz Core Duo T2500 • 15-inch screen • 6.8 pounds • DVD+R DL/DVD±RW
▶ **Bottom line:** Providing long battery life but a staid design, the R60 overall is a solid choice for mainstream users on a budget.			
3 Lenovo 3000 C100 $873 find.pcworld.com/52768	**80** Very Good	• WorldBench 5 score: 77 Fair • Overall design: Good • Tested battery life: 4:56	• 1.73-GHz Pentium M 740 • 15-inch screen • 6.3 pounds • DVD±RW
▶ **Bottom line:** This affordable notebook has a basic design but long battery life and fairly robust features for the price.			
4 HP Pavilion dv2000t $1570 find.pcworld.com/55175	**79** Good	• WorldBench 5 score: 110 Superior • Overall design: Very Good • Tested battery life: 7:08	• 2.16-GHz Core Duo T2600 • 14.1-inch wide screen • 6.1 pounds • DVD+R DL/DVD±RW
▶ **Bottom line:** Offering stunning looks and great battery life, the dv2000t is an excellent home and small-business notebook.			
5 Sony VAIO VGN-N170G $1100 NEW find.pcworld.com/56240	**77** Good	• WorldBench 5 score: 85 Good • Overall design: Very Good • Tested battery life: 3:48	• 1.6-GHz Core Duo T2050 • 15.4-inch wide screen • 6.7 pounds • DVD±R DL/DVD±RW/-RAM
▶ **Bottom line:** This inexpensive, stylish notebook has only modest processing power and no user-upgradable hard drive.			

CHART NOTES: Prices and ratings are as of 2/6/07. Weight does not include AC adapter, power cord, or optical drive.

Samsung's BlackJack Is a Winning Handset

TEST Center THIN IS CLEARLY in at Samsung. The company's new **BlackJack i607** from Cingular is the spitting image of Verizon's Motorola Q, also black, and one of the thinnest phones you can buy.

The BlackJack is even smaller and lighter than the Q. It stands at 4.4 inches tall, 2.3 inches wide, and 0.5 inches thick, and it weighs just 3.5 ounces. While I like the Black-Jack's compact size, thumb-typing on the unit's QWERTY keyboard feels cramped. The thumbwheel on the right side moves swiftly and makes navigation manageable.

The BlackJack's multimedia features set it apart from other PDA phones in this class. Via Cingular Music, it will stream XM satellite radio (for $9 a month), and it supports subscription music services such as eMusic, Napster, and Yahoo; however, Cingular does not have an over-the-air music download service. The device will also stream video (fees vary). For creating your own media, the handset has a 1.3-megapixel camera. You can store data in the unit's meager 64MB of RAM or on an optional microSD card.

The handset, which runs the Windows Mobile 5 Smartphone Edition OS, also offers stellar messaging capabilities. Equipped with Internet Explorer and instant messaging (AIM, MSN, and Yahoo) apps, the unit also supports POP3, IMAP, and SMTP e-mail; syncs Outlook e-mail; and supports push-based e-mail delivery via Microsoft Direct Push, Good Mobile Messaging, or Cingular XpressMail. Though you don't get a mobile version of Microsoft Office, you can see Word documents, PDFs, Excel sheets, and Power-Point presentations; plus, it comes with a calendar, a notepad, voice notes, and more. In my experience, though, opening and closing some apps, and backtracking to a previous Web page were sluggish operations; the phone typically requiring 1 to 2 seconds to process the commands.

In my trials, call quality was generally quite good on both ends. The speakerphone performed adequately, too. On my end, the phone's speakers produced fairly crisp audio, but a few of my callers had a hard time hearing me and said they noticed an echo.

The i607's battery life in our lab test was good, at 6 hours, 21 minutes—more than 40 minutes longer than the Motorola Q's, though far short of front-runners like T-Mobile's Dash and RIM's BlackBerry 8700g. The BlackJack package comes with a spare battery and an external charger.

THE BLACKJACK IS narrow and lightweight, and it looks chic.

A quibble: I found that dialing a number on the Black-Jack was a little challenging. The numbers are awkwardly placed between nonnumeric keys, so I often pressed a letter by mistake when I should have pressed the adjacent number.

At $300 (with a two-year contract from Cingular), the BlackJack i607 costs $100 more than the Motorola Q, but it adds streaming-media capabilities and a second battery. If you're looking for a lightweight PDA phone, the BlackJack is a stellar choice.

—Grace Aquino

BlackJack i607

Samsung

PCW Rating B1 **Very Good**

Lightweight, multimedia-savvy phone excels in design and in streaming via Cingular's high-speed 3G network.

List: $300 (with a two-year contract from Cingular)

find.pcworld.com/56259

TECH TREND

Better Portrait Photos

IF YOU'RE TIRED of taking dark, underexposed, and otherwise lousy pictures of your family and friends, the latest crop of cameras with facial-recognition technology should be able to help you out. Fujifilm says that its 6.3-megapixel FinePix F31fd ($350) with "Face Detection" can recognize human faces even in low light, focus on them, and then optimize exposure. To test this feature, we took portraits of our coworkers; in cases where the camera's portrait scene mode alone left their faces underexposed, turning on Face Detection produced a brighter—and better—result. Particularly in backlit environments, Face Detection also helped with overall exposure. In a shot with multiple faces, the F31fd prioritized its focus on the closest face (but it detected others as well). In one instance, it had trouble recognizing a head that was tilted.

Fujifilm says that its 8.3-megapixel FinePix F40fd ($300), due for release in March, will also be able to crop portraits of people automatically and print (using DPOF direct-to-printer technology) as many copies of the image as there are faces in the frame. Samsung is putting its similar Intelligent Face Recognition Technology into its upcoming L73, expected in the first half of 2007.

—Eric Butterfield and Narasu Rebbapragada

TOP 5 DOCUMENT SCANNERS

Fast and Versatile Scanners for the Office

TODAY'S DOCUMENT scanners are tailored for the office, expressly designed to digitize volumes of documents into multiple formats quickly.

You don't have to spend a lot to get fast speeds and plenty of features. We tested eight low-cost models priced from $399 to $799. Our Best Buy, the compact Fujitsu ScanSnap s500, delivered high image quality and costs $495. The even smaller and less expensive $399 Plustek SmartOffice PS252 proved faster at scanning text. The s500, however, was significantly speedier at scanning a two-sided graphics document, and Fujitsu offers customers toll-free support; Plustek uses a toll number.

All of the models we looked at include optical character recognition (OCR) software, though most of them don't provide a full-featured version. Many of these scanners also come with document management software and an application for scanning business cards.

Most document scanners work only with sheets of paper. Offices that also need to scan books or other thick items should look for a flatbed model, such as the $500 Microtek ArtixScanDI 2020 or the $599 Epson GT-2500. The latter model missed our chart, in part due to its limited software. Two other units—the $795 Canon DR-2050C and $799 Kodak i1210—fell out of contention because of their

THE FUJITSU SCANSNAP s500 scanned a two-sided graphics document very quickly.

high price and slow speeds. But both scanners earned a Superior rating for their extremely sharp text scans.

Every model we evaluated offers an automatic document feeder (ADF). Sheet-fed scanners are more specialized,

scanning only from their ADF, so you might expect them to be faster than flatbed scanners. Yet in our tests two of the fastest units overall, the Microtek ArtixScanDI 2020 and the Epson GT-2500, were flatbed models.

The scanners that created high-quality text scans also tended to produce good-looking scans of graphics. Both the s500 and the PS252, for example, received a Very Good mark for their sharp scans of text documents, and both earned a Superior score for their scans of color graphics documents.
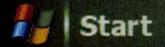
UNIQUE FEATURES

ULTIMATELY YOUR preferred file format may determine which scanner is appropriate for your office. For example, the s500 and PS252 each offer a one-touch button for making searchable PDF files; the s500 also scans to JPEG, as well as to Microsoft Word and Excel formats—but it does not scan to TIFF as many other models do. And while the s500 and PS252 each have a basic version of Abbyy FineReader OCR software, the HP Scanjet N6010 includes the full ReadIris Pro 11 OCR package.

—*Eric Butterfield*

ONLINE

FOR MORE INFORMATION on the document scanners reviewed in this chart, including details on how we tested them, go to find. pcworld.com/56345.

DOCUMENT SCANNER	PCW Rating	Performance	Features and specifications
1 **Fujitsu ScanSnap s500** **Best BUY** $495 find.pcworld.com/56323	**83** Very Good	• Text scan quality: Very Good • Text scanning speed: 13.0 ppm • 300-dpi graphics scan: 13 seconds	• 50-sheet document feeder • USB 2.0; 5.9 pounds • Sheet-fed only, not flatbed
► **Bottom line:** The sturdy s500 delivers high image quality and includes a document management app, but its OCR software is basic.			
2 **Plustek SmartOffice PS252** $399 find.pcworld.com/56324	**82** Very Good	• Text scan quality: Very Good • Text scanning speed: 16.2 ppm • 300-dpi graphics scan: 14 seconds	• 50-sheet document feeder • USB 2.0; 3.7 pounds • Sheet-fed only, not flatbed
► **Bottom line:** Ultracompact scanner offers high image quality and a generous software bundle, though OCR capabilities are limited.			
3 **HP Scanjet N6010** $500 find.pcworld.com/56336	**82** Very Good	• Text scan quality: Good • Text scanning speed: 20.4 ppm • 300-dpi graphics scan: 27 seconds	• 50-sheet document feeder • USB 2.0; 11.8 pounds • Sheet-fed only, not flatbed
► **Bottom line:** The N6010 scans text quickly, but is slow at handling graphics. It's well priced considering it includes full-version OCR software.			
4 **Microtek ArtixScanDI 2020** $500 find.pcworld.com/56337	**80** Very Good	• Text scan quality: Good • Text scanning speed: 18.4 ppm • 300-dpi graphics scan: 12 seconds	• 100-sheet document feeder • USB 2.0; 13.5 pounds • Legal-size flatbed
► **Bottom line:** Large flatbed model offers fast speeds and a high-capacity ADF. However, it can't create searchable PDF files.			
5 **Xerox Documate 152** $595 find.pcworld.com/56339	**76** Good	• Text scan quality: Good • Text scanning speed: 11.2 ppm • 300-dpi graphics scan: 15 seconds	• 50-sheet document feeder • USB 2.0; 6.5 pounds • Sheet-fed only, not flatbed
► **Bottom line:** Unit includes full-version OCR software and a document management app, but it's slow overall and its image quality is mediocre.			

CHART NOTES: Prices and ratings are as of 2/6/07. Feature listings are not exhaustive.

Painter X: The Most Realistic Digital Art Yet

GRAPHICS SOFTWARE

COREL'S PAINTER graphics program has always been about using technology to blur the line between art and reality. Painter's tools simulate real art supplies, from oil paints to felt-tip pens, and it can turn photos into gorgeous paintings. Painter X raises the ante on both of these counts. I tried the shipping version.

Corel touts the program's new RealBristle brushes as its most realistic tools yet. And they truly are remarkably... well, bristly: As you drag your brushes across the canvas, they interact with the paint in a more natural, less predictable way than previous Painter brushes did. (As always, a graphics tablet is mandatory to get the most out of Painter; RealBristle tools work best with Wacom's Intuos graphics tablets' optional Art Pen.)

Tools for creating art based on photographs have received a sweeping makeover. You can prep snapshots by fixing problems such as bad lighting right in Painter, use the improved AutoPainting feature to perform much of the labor of turning the photo into art, and then refine the results—to bring out more detail in faces, for instance—manually.

Another new feature, the entertainingly quirky Divine Proportion, was inspired by the centuries-old notion that shapes with a proportion of 1:1.61803398874989 are inherently pleasing. The tool overlays a pattern of lines and curves on your canvas to help you lay out your creations in accordance with this theory. It would be a mistake to take Corel's claims for the option too seriously; but used judiciously, it can help you create appealing compositions.

The Mac version of Painter X is the first to run as a native application on Intel-based machines. Owners of those systems should see notice-ably snappier performance than they got with Painter IX. Both Mac and Windows users will appreciate that the package comes with more printed documentation than IX did.

What's not to like about Painter X? Its interface, which hasn't changed much over the years, remains complex: Dig into the array of tools, settings, and options, and your canvas may get overloaded with palettes and toolbars. Even so, this upgrade is meaty enough to please professional artists and serious amateurs alike.

—*Harry McCracken*

THE TOOLS IN Painter X mimic paintbrushes better than ever; with them, you can turn digitized photos into truly painterly images.

Painter X

Corel

PCW Rating `87` `Very Good`

Better brushes and photo tools make for a winning upgrade.

List: $429 (upgrade $229)

find.pcworld.com/56258
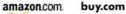
Make DVDs Like the Pros—For a Price

DISC AUTHORING

ROXIO'S **DVDit Pro HD** disc-authoring program impresses me: It's easy to use, and it offers fine control over the menus. At $499, the package is not for the average user, but it is currently the only option for editing menus on BD-AV (Blu-ray) discs, unless you want to step up to Sonic's $5000 Scenarist, which is aimed at professional editors.

DVDit Pro HD has advanced features unavailable in low-end editors. With it you can add content protection to Blu-ray Disc and DVD projects; create high-def slide shows with PCM audio on Blu-ray Discs; encode video to 1080p, 1080i, and 720p; and make DLT (DVD) and CMF (Blu-ray) masters for duplicators.

Regrettably, DVDit Pro HD lacks Scenarist's support for interactive Blu-ray disc menus and for HD DVD discs (unfortunate, since HD DVD burners should be available soon).

The program's interface, easy to learn and use, borrows largely from Scenarist—to great effect. Unlike "beginner-friendly" approaches in other applications, the interface doesn't force you into a workflow. You can tweak any part of your creation at any time. Create menus with the included templates, use your own

images to make templates, or create a menu in Adobe Photoshop and import it.

The interface is less obtuse than that of Adobe's Premiere and Encore DVD (neither of which currently supports Blu-ray), yet it still allows you control over the placement of menu components. A useful project window lets you easily track menus, video, and playlists, and a simulation window permits you to preview your project before burning it. But don't go near this program with anything less than 1GB RAM and a fast processor, as it's resource intensive.

For now, DVDit Pro HD is the only remotely affordable

DVD IT PRO HD offers a slew of menu templates to choose from. You can also create your own custom template and import it.

option for video authors who need Blu-ray Disc menu editing. At its $199 upgrade price (from eligible programs), it's an attractive step up for cre-

ative videographers, but most users will be fine with the rudimentary disc authoring found in cheaper products.

—*Jon L. Jacobi*

DVDit Pro HD

Roxio

PCW Rating `75` Good

Disc-authoring package offers creative versatility; but it's pricey for the average user, and underpowered for pros.

List: $499

find.pcworld.com/56260

Avidian's Prophet Strengthens Customer Tools

IF BUSINESS SALES leads seem to be trickling through your fingers, you need a good customer relationship management (CRM) application to help you keep closer track of your sales opportunities.

Avidian's Prophet 4.0—a simple and easy-to-use CRM add-on for Microsoft's Outlook e-mail client—can help you convert mere opportunities into actual sales. I tested the shipping version of the single-PC, $150 Prophet Personal Edition and found the installation straightforward, albeit a tad time-consuming. Prophet seamlessly integrates with Outlook, adding a new mail folder and toolbar.

Version 4.0 introduces the ability to set follow-up actions at each sales stage. It also offers improved search capabilities, with a greater array of filter types, and additional reporting templates and filters. The reporting tools are a notch better than I expected from this simple CRM application; it even includes a basic sales forecast.

Clicking the Opportunity icon within Prophet's Outlook toolbar calls up a form to describe and categorize the sales lead, and to associate it with an Outlook contact. You can add tasks to each opportunity, too, such as a reminder to prepare for a presentation.
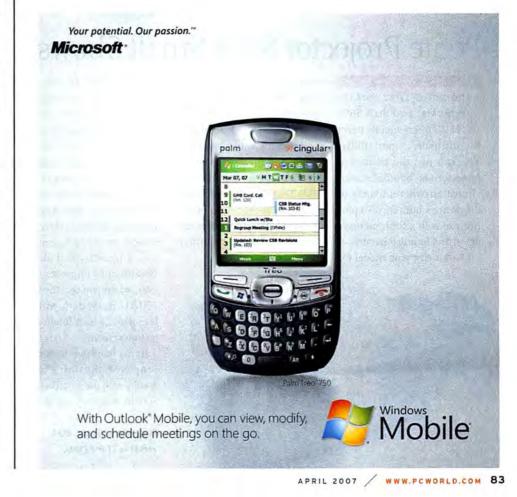
The Personal Edition, which is aimed at individual users, lets you manage your sales opportunities in Outlook, track incoming and outgoing e-mail messages, send personalized group e-mail, and share sales data by e-mail or peer-to-peer over a network connection. Prophet Professional Edition ($300), which is designed for sales teams, adds data-sharing capabilities over a central server; centralized team reporting; and a Sales Assistant that automates follow-up e-mail and appointment scheduling.

IN PROPHET, YOU can set up task reminders, and you can associate these reminders with an Outlook contact's sales opportunity.

You're unlikely to switch to Microsoft Outlook just for the sake of running Prophet. If you already use Outlook, however, Prophet is worth considering if you'd like to integrate CRM capabilities within Outlook and manage just one contact database.

—*Richard Morochove*

Prophet 4.0
Personal Edition

Avidian Technologies
PCW Rating **78** Good
Add-in for Microsoft Outlook makes it quick and easy to integrate customer relationship management tools.
Street: $150
find.pcworld.com/56256

Sprint, Samsung Team for Superskinny Phone

CELL PHONE

TEST Center CAN A PHONE ever be too thin? Billed as the skinniest clamshell available in the United States, the $330 (with two-year contract) **Sprint Power Vision M610 by Samsung** is a hair shy of half an inch thick—when shut.

Open, this Java-based phone is so thin and light (3.3 ounces) that I constantly feared breaking it just by gripping it too hard. Still, this handset's 2-by-4-inch matte-black case, its 0.8-by-0.3-inch external OLED display, and its bright, crisp, 240-by-320-pixel, 1.8-by-1.5-inch main display should appeal to any thin-phone fans looking for an alternative to the Motorola Razr.

The M610 supports Sprint's high-speed Power Vision EvDO network, which enables a slew of multimedia services (fees vary). The unit includes a 64MB microSD card, and is equipped with Bluetooth connectivity.

The phone's tiny stereo speakers produced decent though slightly tinny audio; music sounded soft when it was piped through the included stereo headset (which, unfortunately, attaches via a proprietary connector).

I enjoyed how the M610 displayed phone numbers in large, multicolored numerals that looked as if they were on a theater marquee. What I didn't like was the disappointing battery life: just 3 hours, 22 minutes of talk time in our tests, far below the average we've seen.

Video clips (some free, others for pay) were a mixed bag. An Adult Swim cartoon that I downloaded looked fine, but a trailer for *Casino Royale* was grainy and unattractive. I was more impressed with the phone's 2-megapixel camera, which captured sharp stills, both indoors and out.

The M610 lists for $330—not bad for a stylish handset that includes a capable camera and EvDO. But personally, I prefer my clamshells with a bit more meat on them.

—Yardena Arar

Sprint Power Vision M610 by Samsung

Sprint

PCW Rating **71 Good**

Superthin, multimedia-oriented clamshell phone speeds up downloads, but playback isn't always satisfying.

List: $330 (with two-year Sprint contract)

find.pcworld.com/56279

THE M610 CLAMSHELL has big, easy-to-read numbers.

Petite Projector Suits Small Shows

PROJECTOR

A PROJECTOR THAT can fit in your pocket, Toshiba's $699 **TDP-FF1AU** offers mobile users the ultimate in portability. You can use the palm-size projector and bundled screen almost anywhere, thanks to the device's built-in USB port (for use with a flash memory drive) and bundled battery.

I took a shipping model for a spin, and was impressed by its versatility given its diminutive size. This tiny projector weighs a scant 1.1 pounds (1.7 pounds with the battery pack), and measures just 5.5 by 2.2 by 4.0 inches. The unit uses Texas Instruments' Digital Light Processing technology and LED-based bulbs to project native SVGA-resolution (800-by-600) images.

The TDP-FF1AU's main limitation is its moderate brightness, just 400 lux (far less than the total light output of traditional projectors, whose brightness is typically measured in lumens). The device's relatively low brightness requires a fully darkened room for viewers to clearly see images projected larger than on a 2-foot-diagonal display. Performance improves, however, when you use the TDP-FF1AU in tandem with the bundled, 23-inch folding projection screen.
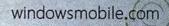
In my hands-on tests of the projector, the unit's image quality with the small bundled screen was very good, as it displayed sharp text images and colorful graphics. When I tested it with a 5-foot-diagonal screen, however, the TDP-FF1AU's color and contrast were too washed out in daylight; I saw better results when I darkened the room.

In the end, the TDP-FF1AU is good for one-on-one presentations, but not for displaying big images to larger audiences in rooms with ambient light.

—Richard Jantz

TOSHIBA'S SMALL BUT versatile TDP-FF1AU.

TDP-FF1AU

Toshiba America Information Systems

PCW Rating **79 Good**

Ultraportable projector works well, but it's a good fit for personal presentations only.

Street: $699

find.pcworld.com/56257

PHOTOGRAPHS: MARC SIMON

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**
Search Engines	100+	1	1	1
Search Tabs	✓			
Blocks Pop-Up Ads	✓	✓	✓	✓
Calendar Application	✓			
RSS News Reader w/Ticker	✓			
Auto Form Filler	✓	✓		✓
Adult Content Blocker	✓			
Spyware Remover	✓		✓	
Homepage Protector	✓			
Browser Tracks Eraser/Cleaner	✓			
File Shredder	✓			
Add Buttons for Software	✓			
Add Buttons for Webpages	✓	✓	✓	
Screensaver Launcher	✓			
Games Links	70	0	10	10
E-mail Provider Links	52	0	1	1
News Provider Links	88	0	1	0

With its vast array of features and incredible ease of use, the Advanced Toolbar stands out from the competition. It's a powerful web tool that allows you to choose from over 100 search engines, 80 plus news sources, 50 plus email providers and can be completely customized to meet your needs. The Advanced Toolbar does not record any user data, has a very straight forward privacy policy and is totally spyware and adware free. You can get a free copy of the Advanced Toolbar at **http://www.advancedtoolbar.com** and take advantage of everything this incredible toolbar has to offer.

Back

Address ⌄ ➔ Go

▲ ▾   🔍 Search ▾ 🖼 ☒0 ▾ ⊙ 💼 🏠 🗒 🖂 Mail ▾ 📰 News ▾ ⊡ Games ▾ 🔧 Tools ▾ ♥ ▾ 🖼 Travel ▾ 🙂 ▾ 📺 TV ▾

You can get a free copy of the Advanced Toolbar at:

http://www.advancedtoolbar.com

WINDOWS TIPS for Everyone

Whether you've jumped to Vista or are sticking with XP, our tips will make your computing faster and safer—and even a little more stylish.

BY PRESTON GRALLA • ILLUSTRATIONS BY JOHN MATTOS

R IGHT OUT OF THE BOX, Windows is just a so-so operating system. It doesn't really reach its potential until you've cracked it, hacked it, and otherwise bent it to your will.

Whether you want to speed up XP, customize Vista's Aero interface, manage your disk partitions, or do quick-and-dirty photo editing, our Windows projects will show you how. We start off with some performance boosters, and then move on to cover file management, interface tweaks, network and browser options, and Windows Media Player.

The work isn't done until you plug Windows' many holes, which we cover in "Security." If you're moving from XP to Vista, see our tips in "XP to Vista," and then try our Vista alterations in "Top Tweaks." ▶

Get Windows in Gear

Start With a Backup

ALL PC TWEAKING begins with a backup. To set a restore point in XP, click *Start•Programs* (or *All Programs*)•*Accessories•System Tools•System Restore*, choose *Create a restore point*, click *Next*, and step through the wizard. In Vista, click *Start•Programs* (or *All Programs*)•*Maintenance•Backup and Restore Center*, select *Create a restore point or change settings*, choose *System Restore*, click *Next*, and then follow the on-screen instructions.

Vista's Complete PC Backup creates a snapshot of your applications, settings, and data files. Later, if (when?) your hardware fails, you can restore the entire system, not just your files. (Note that Complete PC Backup is not available in Vista Home Basic or Home Premium.)

To create a backup, click *Start•Control Panel* (or *Start•Settings•Control Panel* on the Classic Start menu)•*Back up your computer* (in Classic View, double-click *Backup and Restore Center*). Choose *Back up computer* and follow the steps. I recommend making a backup at least once per month if you use your PC for work, and a minimum of once every six months no matter how much or little you use it.

Stop Unnecessary Startups

WHENEVER YOU START your PC, various services and programs start up in the background, often without your knowledge. Most of them are programs or services you need, such as your firewall and antivirus software. But some, such as instant messaging apps that you rarely use, do nothing but squander system resources and slow down your PC.

The simplest way to remove the autostart apps you don't use is with the System Configuration utility: Click *Start•Run* (or just *Start* on Vista's menu and type in the *Start Search* box), type **msconfig**, and press **<Enter>**. Select the *Startup* tab to see

the programs that start with Windows. Uncheck those you don't want to run (see **FIGURE 1**). Next, click the *Services* tab to see a list of all the services running on your system. The Process Library (www.processlibrary.com) describes thousands of Windows services and programs, and tells you whether they're necessary.

Keep an Eye on Performance

THE COUNTERS IN XP's System Monitor utility provide insight into your PC's operation, but they can be difficult to decipher (browse to find.pcworld.com/56254 for more on using System Monitor). To run the program, click *Start•Run*,

FIGURE 1: Improve Windows' performance by preventing unnecessary programs from starting automatically; when you need them, you can open them manually.

type **perfmon**, and press **<Enter>**. Select *System Monitor* in the left pane, and click the plus sign in the toolbar on the right to add more performance measures.

Vista's Reliability and Performance Monitor is a big improvement over XP's System Monitor. Click *Start* (or *Start•Run* on the Classic Start menu), type **perfmon**, and press **<Enter>** to open it. The utility's most useful feature is the Resource Overview, which provides a graphic representation of your CPU, disk, network, and memory use, as well as historical usage stats (see "The Best of Vista's New Tools" on page 91). For example, in the CPU section you can see every service and application running, how many threads each is using, and the CPU use of each.

Click *Reliability Monitor* in the utility's left pane to view a day-by-day history of your machine's stability, including itemization of any system crashes and hardware or software failures. The tool also

computes an overall reliability index, which changes every day to reflect whether your system or applications have crashed.

Restore Files via Shadow Copies

ANOTHER OF MY favorite new features in Vista Ultimate and Business is Shadow Copies, which backs up your files automatically and makes restoring previous versions of files gone bad a breeze. To revert to a previous version of a file, open Windows Explorer, right-click the file, and select *Restore previous versions*. Click one of the listed versions to open it.

Keep a couple of things in mind about this feature. First, Vista doesn't maintain a shadow copy of every version of the files you open; instead, each time Vista creates a restore point, it generates a shadow copy. Also, some of the versions you see listed may have been created when you used Vista's Complete PC Backup program.

Tweak Your Associations

BY DEFAULT, WINDOWS associates certain files with certain programs: When you double-click the file, a specific application opens to run it. But why stick with Windows' choices? To change the program associated with a specific file type in XP and Vista, right-click the file in Explorer or any folder window, and select *Open With* to produce a list of programs that can run that file. Select *Choose Program* in XP, or *Choose Default Program* in Vista. In the resulting dialog box, click the program you want to use as the default, and make sure to check *Always use the selected program to open this kind of file.*

Then click *OK*. If the program you want to use as the default isn't listed, click *Browse*, locate and select the program you want, click *Open*, and then click *OK*.

Turn on ReadyBoost

ONE OF THE simplest and least pricey ways to speed up Vista is by enabling ReadyBoost, which uses a USB flash drive to supplement your computer's RAM. A 1GB flash drive costs as little as $15, and a 2GB device is a little more than twice that amount.

How do you figure the appropriate thumb-drive capacity for your PC? The smallest cache that ReadyBoost can use is 256MB, and the largest is 4GB. Microsoft recommends a flash-memory-to-system-RAM ratio of between 1:1 and 2.5:1. For example, if you have a PC with 512MB of RAM, purchase a flash drive with 512MB

FIGURE 2: Generate a detailed report of your system's health using Vista's performance-monitoring tools.

to 1.25GB of space. A system equipped with 1GB of RAM should use a drive with a capacity of between 1GB and 2.5GB.

The tricky part involves ensuring that your USB flash drive is ReadyBoost-ready. Browse to find.pcworld.com/56358 to see the minimum requirements and other ReadyBoost information. Before purchas-

ing a specific drive, search the Web for information on whether it has been tested with ReadyBoost.

To use ReadyBoost, first plug the drive into a USB port and choose *Speed up my system* on the screen that appears. On the next screen, select *Use this device*, and click *OK*. On the *Ready-Boost* tab of the device's Properties dialog box, you can either go with the amount of space that Vista suggests reserving for the tool or replace it with an amount you prefer by using the slider control (see "The Best of Vista's New Tools" below).

Manage Partitions Easily

VISTA'S DISK-PARTITIONING utility lets you easily create, delete, resize, and format partitions. To access these tools, select *Start•Control Panel* (or *Start•Set-* ▶

WHAT'S INSIDE VISTA

THE BEST OF
Vista's New Tools

THE NEW AERO interface may get most of the attention, but the new version of Windows adds some first-rate tools to its repertoire of utilities, as well. Here are three of our favorite Vista additions.

SEE YOUR PC'S health at a glance in the Reliability and Performance Monitor.

VISTA'S READYBOOST OPTION lets you use a USB flash drive to improve your system's performance.

GET CREATIVE WITH your screen captures by using the options in the new Snipping Tool application.

tings•*Control Panel* on the Classic Start menu)•*System and Maintenance,* and under 'Administrative tools', click *Create and format hard disk partitions.* (In Category View, double-click *Administrative Tools* and choose *Disk Management* in the left pane.) Use the Disk Management menu under Actions on the left to access your maintenance options. You can also right-click an existing partition and select an action from the menu that appears.

Your best bet for managing disk partitions in XP is to use a third-party program such as the $45 Partition Expert from Acronis (find.pcworld.com/56255).

Generate a Diagnostic Report

VISTA'S BUILT-IN troubleshooting tool scans your PC, identifies problems, and generates a diagnostic report, complete with suggestions for fixing the difficulties. To use it, click

Start•Control Panel (or *Start•Settings•Control Panel* on the Classic Start menu)• *System and Maintenance•Performance Information and Tools•Advanced tools• Generate a system health report.* (In Category View, first double-click *Performance Information and Tools,* and then click *Advanced tools•Generate a system health report.*) The system diagnostics utility takes about a minute to run before it issues a report (see **FIGURE 2**). ▶

WORKSHOP

TWEAK

Security Settings in XP and Vista

GOOD SECURITY DOESN'T have to bug you constantly. Here's how to stay safe without having to click through a warning every 30 seconds.

Switch to free antivirus: Tired of spending a bundle on annual subscriptions to antivirus software? Alwil Software offers the excellent Avast antivirus application free for home, noncommercial use (find.pcworld.com/56267). The program works with both Windows XP and Vista.
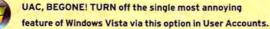
Another benefit of Avast is that the program uses very little RAM and other system resources, unlike infamous processor hogs such as Symantec's Norton AntiVirus.

Bounce account controls: Without a doubt, the most annoying thing about Vista is User Account Control (UAC), which causes Windows to ask you for permission before accessing various system resources. True, this setup will help to keep

Turn on User Account Control (UAC) to make your computer more secure

User Account Control (UAC) can help prevent unauthorized changes to your computer. We recommend that you leave UAC turned on to help protect your computer.

☐ Use User Account Control (UAC) to help protect your computer

UAC, BEGONE! TURN off the single most annoying feature of Windows Vista via this option in User Accounts.

your PC safe, but do you really need to see yet another pop-up and click through yet another prompt before doing something as simple as changing the size of Windows' main font?

Luckily, you have an easy way to turn off UAC: Choose *Start• Control Panel* (or *Start•Settings•Control Panel* on the Classic

Start menu)•*User Accounts,* and then click *Turn User Account Control on or off.* At the UAC prompt, select *Continue;* and when you move on to the next screen, uncheck *Use User Account Control (UAC) to help protect your computer.* Then click *OK.* After you restart your computer, you will no longer be bedeviled by those insistently feckless UAC prompts.
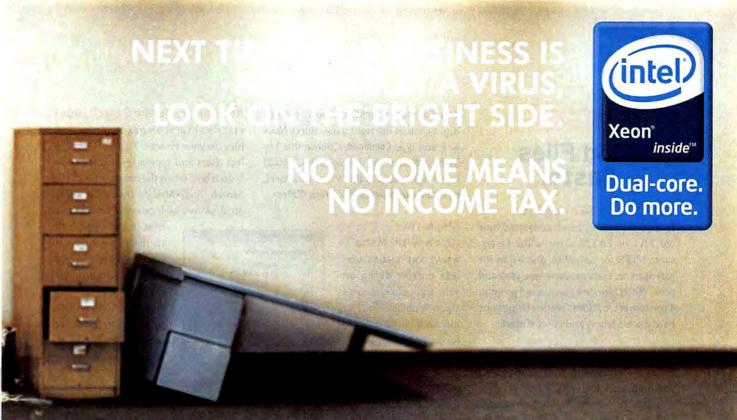
Elevate your command prompt: When you run certain commands from Vista's command prompt, you receive an error message declaring that you can't run the command because you don't have the proper administrator rights. This occurs even if you're logged in as an administrator.

To evade this limitation, you have to elevate your privileges. Click *Start•All Programs•Accessories* (or *Start•Programs• Accessories* on the Classic Start menu), right-click *Command Prompt,* and choose *Run as Administrator.* At this point the command prompt will launch, but you'll be operating in special administrator mode; you can tell by looking at the title bar, which will start with the word 'Administrator'. **Bonus tip:** If you want to open a command prompt without using your mouse, press <Ctrl>-<Shift>-<Enter> after you type **cmd.**

Turn off file-deletion prompts: UAC can be helpful should you ever inadvertently try to delete a system file. This misstep will generate two pop-ups: one from UAC, and a separate delete-file confirmation box. To retain the UAC prompt but eliminate the confirmation box, right-click the *Recycle Bin,* select *Properties,* uncheck *Display delete confirmation dialog,* and click *OK.*

From now on, no matter what file you want to delete—system files or regular files—you'll have one fewer dialog box to click through. If you try to delete a system file, however, you'll still see a UAC prompt (unless you've turned it off, as explained in the "Bounce account controls" section above).

Find Files Faster

Switch From FAT to NTFS

IF YOU HAVEN'T already converted your old FAT or FAT32 drive to the faster, safer NTFS format, click *Start•Run* (or just *Start* on Vista's menu), type **cmd**, and press **<Enter>** to open a command prompt. Type **convert** *x:* **/fs:ntfs** (with *x* being your hard drive's letter) and press **<Enter>**.

Click for a Command Prompt

TO PUT A command-prompt option on your right-click menu, click *Start•Run* (or just *Start* on Vista's menu), type **regedit**, and press **<Enter>** to launch the Registry Editor. Navigate in the left pane to *HKEY_ LOCAL_MACHINE/Software/Classes/ Folder/shell*. Right-click in the right pane and select *New•Key*. Name it **Command Prompt**. Select the new key in the left pane, and double-click *(Default)* in the right pane. In the 'Value data' field, type

Open Command Prompt, and press **<Enter>**. Right-click in the right pane, select *New• Key*, and type **Command**. Choose this key in the left pane, and double-click *(Default)* in the right pane. In the 'Value data' field, type **cmd.exe /k pushd %L**. Press **<Enter>**.

Clean Your 'Open With' Menu

WHAT ARE THOSE useless entries doing on your right-click menu's Open With list? To clear them out, click *Start•Run* (or just *Start* on Vista's menu), type **regedit**, and press **<Enter>**. Navigate on the right to HKEY_ CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\ Explorer\FileExts, and choose the extension whose Open With list you want to edit. Delete any entry on the list of keys in the right pane. Now double-click the MRUList and delete the letter of the program you just removed.

FIGURE 3: Add folders to Vista's index of locations for the OS to search.

Add Folders to the Search Index

VISTA'S SEARCH INDEX may miss some files on your system. To add folders, select *Start* and type a term in the Start Search box. When the results appear, click *Search Tools•Modify Index Locations• Modify•Show all locations*. Check the box next to a storage device in the top window (or double-click it to see subfolders). Select the folders that you want to add, and click *OK* and *Close* to return to the search window (see **FIGURE 3**).

Save Searches

TO SAVE AND update your Vista searches, select *Start•Search* and enter your term. Click *Save Search* and then choose *Save*. Your saved search will appear in the Searches folder of the Search window's left pane. **Bonus tip:** For a different way to find files in XP, try the free Tag2Find utility (find.pcworld.com/56359).

MAKE

The Move to Vista

WE RECOMMEND A clean install of Vista, but we know that many folks prefer to upgrade from XP to avoid having to reinstall their apps, files, and settings. In most cases you can switch from XP to Vista without preparing at all, though we recommend that you back up your files in case something goes wrong.

An upgrade merely installs Vista directly over XP, retaining all of your applications, files, user accounts, and other settings. Conversely, a clean install wipes out all traces of XP and of your applications, files, settings, and user accounts, deleting everything from your hard disk (including all the problematic Registry entries your system has accumulated) once the fresh copy of Vista is in place. Windows Easy Transfer, Vista's version of XP's Files and Settings Transfer Wizard, lets you move your settings, files, and apps to a clean Vista install via a direct cable connection or over a network. Browse to find.pcworld.com/56360 for more information on using Windows Easy Transfer.

Why do a clean install instead of an in-place upgrade? Not every version of XP can be upgraded to every version of Vista. For example, if you want to upgrade from XP Professional to Vista Home Premium, your only option is to perform a clean install. Go to find.pcworld.com/56327 to view all of your XP and Windows 2000 upgrade options.

One final note: Before upgrading from XP, confirm that your PC can run Vista by downloading and running Microsoft's Windows Vista Upgrade Advisor (find.pcworld.com/56328). It will tell you which versions of Vista your system can run, and it will make recommendations for hardware upgrades if it determines that your PC isn't up to snuff.

Remodel the Interface

Bring Back Classic Menus...

ONE OF THE most disconcerting changes in Vista compared with previous Windows versions is the switch from menus to toolbars in Windows Explorer and Internet Explorer. If you prefer to order off the menu, simply press the **<Alt>** key to bring the menus back. Press **<Alt>** again to make them disappear. To keep menus around in Windows Explorer, choose *Organize•Layout•Menu Bar*. In Internet Explorer, click *Tools•Menu Bar*.

...And the Run Command, Too

XP'S RUN BOX is a quick and easy way to open programs and run DOS commands, but Vista's new Start menu has replaced it with the Start Search box. If you're a fan of the Run box, you'll be delighted to learn that it's easy to bring back. Right-click the *Start* button, choose *Properties• Customize*, check *Run command*, and click *OK*. The old favorite will be back on the Start menu, where it belongs.

Create Your Own Icons

WINDOWS' ICONS AREN'T much help in finding important files and folders at a glance. It's easy to create your own icons to help you spot last year's tax return (skull and crossbones?) or your résumé (double dollar signs, perhaps). For $50, Microangelo Toolset 6 (21-day free trial; find.pcworld.com/56284) can make you look like a digital Picasso.

First, open Microangelo Studio and follow the steps to create a new icon. For Windows XP, your icons should measure 16 by 16, 32 by 32, or 48 by 48 pixels. For Vista, you can choose any of those sizes or go all the way up to 256 by 256 pixels. You can use the program's drawing tools to make icons, but I rely on its import tool to work with graphics created by others. I shrink or expand the images to the appropriate size and save them as icon

files (.ico). Google Image Search (images.google.com) offers a nice collection of downloadable images, but make sure the one you choose is royalty-free. To replace an icon, right-click it and click *Properties•Shortcut•Change Icon*. Browse to and select the new icon, and click *Open*.

Hack Vista's Screen Saver

HERE'S A QUICK way to give Vista's Bubbles screen saver some pizzazz. Click *Start•Run* (or just *Start* on Vista's menu), type **regedit**, and press **<Enter>**. Navigate to and select *HKEY_CURRENT_USER\Software\ Microsoft\Windows\CurrentVersion\ Screensavers\Bubbles*. Right-click in the right pane, select *New•DWORD (32-bit) Value*, and type **MaterialGlass**. Double-click the new key, enter a value of **1** to give your bubbles a transparent look or a value of **0** for metallic bubbles, and click *OK*.

Follow a similar set of steps to create a DWORD in the same right pane named **ShowShadows**. Enter a value of **1** to display shadows below the bubbles, or a value of **0** to go shadowless. Now make a DWORD called **ShowBubbles** and give it a value of **1** to show the bubbles on the desktop or **0** to display them on a black background.

Adjust Aero's Glass Borders

TO CHANGE THE size and color of the borders around XP's windows and dialog boxes, and make other display alterations, right-click the desktop and choose *Properties•Appearance•Advanced*. Vista, meanwhile, permits you to customize many

FIGURE 4: Adjust the transparency of your window borders in the Aero interface.

features of its Aero interface. Right-click the desktop and select *Personalize•Window Color and Appearance*; to tweak the transparency of the window borders, adjust the sliding 'Color intensity' control (see **FIGURE 4**). Choose *Open classic appearance properties for more color options* and click *Advanced*. To give your dialog boxes a new look, select *Border Padding* in the Item drop-down menu, and type in a new size (the default value is 4). When your borders are the right size, click *OK* twice.

Boost Your Network

Fix Vista-XP Network Glitches

VISTA AND XP PCs on the same network may not be able to find each other, as Vista's default workgroup name is 'Workgroup' whereas XP's is 'Mshome'. To rename an XP workgroup, right-click *My Computer*, select *Properties•Computer Name•Change*, and type **Workgroup** under 'Workgroup' near the bottom of the screen. Click *OK* twice.

Map Your Network

VISTA'S NETWORK AND Sharing Center shows info about all of the devices on your network, including their MAC and IP addresses. Click *Start•Control Panel (Start•Settings• Control Panel* on the Classic Start menu)•*Network and Internet•* ▶

FIGURE 5: ID your network devices using Vista's Network and Sharing Center.

MEMORY MYSTERY SOLVED, CASE CLOSED.

Finding a memory upgrade for your computer doesn't have to involve a lot of detective work. With just one click, the Crucial System Scanner takes the mystery out of finding the right RAM.

You know that you're ready for better performance by upgrading your system memory, but you're not sure WHICH memory is right for your computer. You might not even know your computer's manufacturer and model, much less anything about the mind-boggling mix of memory shapes, sizes, speeds, and capacities.

So how are you supposed to know which upgrade to buy? Don't spend hours tracking down the right memory — let the Crucial System Scanner take the guesswork out of upgrading! In just one click, our System Scanner tool analyzes your PC's configuration, then automatically recommends the exact upgrades for your system.

CLUELESS ABOUT MEMORY UPGRADES?

Just click the Scan My System button at Crucial.com, then sit back and get your report on the upgrade that's right for you!

- Limited lifetime warranty
- Free technical support
- Free shipping on qualified orders
  For a limited time, on orders of $40 or more shipped within the contiguous U.S.

System Scanner Report
Your computer currently has 1024MB of memory; and supports up to 2048MB. You have an AGP graphics card.

Slot 1: 1024MB
Non-parity; DDR2
PC2-5300

Slot 2: **EMPTY**

THE CRUCIAL SYSTEM SCANNER
REVEALS THE EXACT
UPGRADES FOR YOUR SYSTEM
www.crucial.com/pcworld

Scan My System

crucial™
T E C H N O L O G Y
A Division of Micron

The Memory Experts™

Go to find.pcworld.com/56393

Network and Sharing Center·View full map. Hold the mouse over a device to see its IP and MAC addresses (see **FIGURE 5**).

The new protocol that Vista uses to map the network will eventually be available for XP, but Microsoft isn't saying when.

Add VPN to Any Hotspot

TO PROTECT YOURSELF at public Wi-Fi hotspots, connect via a virtual private network, which establishes a tunnel of sorts through which your data travels. The HotspotVPN service works with the VPN fea-

tures built into XP and Vista (browse to find.pcworld.com/56519 for more details on using Windows' network connection wizard). The service costs $9 a month, or you can obtain one-, three-, or seven-day access for $4, $6, or $7, respectively. ▶

CUSTOMIZE

CHANGE
Vista's Defaults

HERE ARE THE five customizations that most Vista users will want to make as soon as they get the new OS rolling.

Customize the desktop: Right-click the desktop and choose *Personalize* to change the background, screen saver, sounds, and mouse pointer. You can also choose a theme, alter your monitor's resolution, or change your icons and fonts. If you use Vista's Aero interface, you can assign custom colors to your windows by choosing *Windows Color and Appearance* and picking a color, or click *Show color mixer* to mix a custom color.

Rework the Start menu: Right-click the *Start* button and select *Properties·Start menu*. To revert to the days of Windows 98 and 2000, click *Classic Start menu*. To tweak Vista's Start menu, keep it selected and click *Customize*. You can choose the items that you want on the menu, change how submenus display, and reset your search options, among other settings.

See all of your files and folders: By default Vista hides system files and folders, and it doesn't show the extensions of common file types. This keeps you from knowing exactly what's on your system. To see all that you can see, open Windows Explorer and choose *Organize·Folder and Search Options·View* to see options for changing which files your system displays and how they appear. Select *Show hidden files and folders*, and then uncheck *Hide extensions for known file types*.

While you're there, click the *Search* tab to change search settings; in the *General* tab, tweak your folder options, such as whether a folder opens in the same window or a new one.

Reset your default programs: Vista will probably be using Microsoft programs for browsing, e-mail, and other applications (depending on how your PC vendor configured the machine, or whether you're upgrading from Windows XP). For instructions on how to change the application that opens automatically when you double-click a specific file type, see "Tweak Your Associations" on page 90.

An appealing addition to Vista is the ability to change the defaults for an entire group of programs at one time. Click *Start·Default Programs (or Start·Settings·Control Panel·Default Programs* on the Classic Start menu). In the Default Programs applet, choose *Set program access and computer defaults*. Select *Microsoft Windows* from the list of configurations to use Microsoft software as the defaults—in other words, Internet Explorer for browsing, Windows Mail or Outlook for e-mail, Windows Media Player for audio and video files, and so on. Select *Non-Microsoft* if you have software from other vendors that you would rather use for all of these purposes. If you want to pick and choose from among available Microsoft and non-Microsoft apps, select *Custom* and then choose the individual applications you prefer.

USE VISTA'S DEFAULT Programs applet to select a mix of Microsoft and non-Microsoft programs.

Bounce the Sidebar: Some people like the Sidebar mini-apps on the Vista desktop, but for other folks they're useless. To dump them, right-click the Sidebar icon in the system tray, select *Properties*, and uncheck *Start Sidebar when Windows starts*.

FIGURE 7: Vista's photo gallery program lets you perform basic image corrections with a single click, or use its tools to make your adjustments manually.

Bonus tip: If your wireless network does not support Wi-Fi Protected Access encryption, it's overdue for an upgrade. See find.pcworld.com/56518 for instructions.

Change Your Search Provider...

TO ADD GOOGLE or another search engine to Internet Explorer 7's Search bar, click the down arrow to the right of the Search bar, choose *Find More Providers*, select a provider, and click *Add Provider* (see **FIGURE 6**). Then check *Make this my default search provider*, or keep your current engine and choose your new provider by selecting it on the down-arrow menu prior to entering your search term.

...Or Roll Your Own Provider

BUILDING AN ENGINE to your own specifications takes just a few seconds: Click the down arrow to the right of the Search bar and choose *Find More Providers*. Open a new tab and browse to the provider you want. Do a search for **TEST**

FIGURE 6: Add a new search service to the list of available engines in Internet Explorer 7.

(in all capital letters), and copy the URL in the results page's address bar. Paste the URL into the first text box under Create Your Own in the 'Add Search Providers to Internet Explorer 7' window. Enter a name in the box beneath it, and click *Install*.

Supercharge Your Browser

IF ONE OF your favorite sites loads like molasses, add its IP address and host name to your Hosts file. Your browser looks for addresses in that file first, skipping the slower DNS server if the address is there. In Vista and XP Home, the file is

at C:\Windows\System32\Drivers\Etc\HOSTS. In XP Pro, it's at C:\Winnt\System32\Drivers\HOSTS. Double-click the file to open it in Notepad. Enter the site's IP address in the first column and the host name in the next column, separated by at least one space. (To find the IP address, click *Start•Run*, type **cmd**, and press **<Enter>**; then type **ping**, a space, and the host name, and press **<Enter>**.) Finish by saving the file to the same location.

Browse in Secret

TO SURF WITHOUT leaving a trail, use an anonymous proxy server, which sits between you and the sites you visit. (File downloads can be a problem when you use a proxy, however.) Go to find.pcworld.com/56520 for more.

Use Offline Files

VISTA'S BUSINESS, ENTERPRISE, and Ultimate editions let you bring network files with you. Open Windows Explorer and right-click the network files or folders that you want available offline. Choose *Properties•Sharing•Share•Share*, right-click the folders you're sharing, and select *Always Available Offline* (on some PCs it's just *Offline Files•Always available offline*). The files will sync automatically.

Manage Your Media

Quick Photo Editing in Windows

TO USE VISTA'S photo gallery program for basic photo editing, open the image in the app and click *Fix* to adjust its color and exposure, remove red-eye, and perform other actions; or click *Auto Adjust* to apply the fixes instantly (see **FIGURE 7**).

Search Windows Media Player
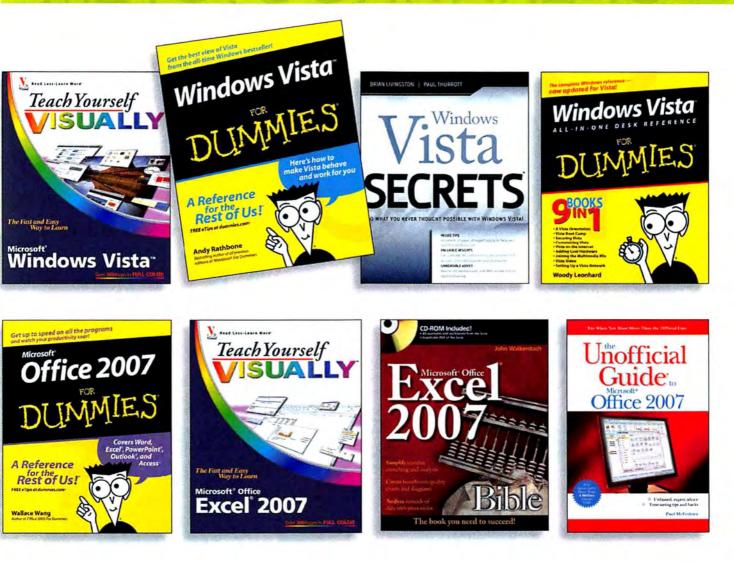
WINDOWS MEDIA PLAYER 11 makes retrieving tracks easier. For instance, to find Bob Dylan's "Like a Rolling Stone," type **Title:Rolling Stone** into the search box to keep the similarly named band out of the results. **Bonus tip:** Unhand that mouse—use the player's keyboard shortcuts instead (find.pcworld.com/56521).
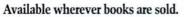
Snip Your Screens

VISTA'S SNIPPING TOOL makes snagging all or part of a screen a breeze. Type **snip** in the Start Search box and press **<Enter>**. Drag the pointer to select, and click *New* to see your capture options.

Preston Gralla is the author of Windows Vista in a Nutshell *(O'Reilly Media). He is based in Massachusetts.* ▶

THE RIGHT
OPERATING SYSTEM
for
YOU

Vista or XP? Windows, Mac, or Linux? How about all of the above? With improved virtualization technology, you might not have to settle for just one OS. ►

BY SCOTT SPANBAUER

ILLUSTRATIONS: JOHN MATTOS

O NCE, YOU WERE either a Mac person or a Windows user. Or maybe you were a Unix geek. Whichever your poison, you likely had only one operating system in your life. Thanks to the ubiquity of the Intel processor and the hard work of untold legions of software developers, however, those days are over. Now, Apple's machines can run Windows XP.

Windows Vista is available on brand-new computers, but you can also boot the same PC with an Ubuntu Linux disc that you downloaded and burned for free. And if you like Ubuntu, you can install it alongside Windows in a few clicks.

Drastic improvements in virtualization

FEATURES COMPARISON

DESKTOP OPERATING SYSTEMS: You Can Have Them All

MULTI-OS OPTIONS LIKE dual-booting and virtualization software have made it easier than ever to use whichever OS is best suited to the task you need to perform. Here's our take on the strengths and weaknesses of the major contenders.

OS	Interface	Security	Software	
Windows XP	• Familiar and responsive, even on older machines. • It's not always intuitive, but you probably know how to get around the OS pretty well by now. • Lacks consistency. Menus, dialog boxes, and appearances can vary widely across different applications. • Lacks hardware acceleration and 3D effects present in Vista and OS X; virtual desktops available only through third-party software. • Rudimentary file search feature, especially without an add-on like Windows Live Desktop. **GOOD**	• Unpatched, Windows XP can't connect to the Internet for more than a few minutes before worms attack and crash it. • It will remain the biggest malware target for years to come. • Requires Service Pack 2, third-party bidirectional firewall and antivirus software, and who knows how many future patches and upgrades for safe online usage. • Windows XP Professional Edition supports file and folder encryption. **FAIR**	• Included utilities, such as Outlook Express and Windows Media Player, offer minimal features but do the job. • Free upgrade to the more-secure Internet Explorer 7 Web browser. • Lots of top-notch free and commercial software available, including Adobe Photoshop and Microsoft Office. • Gaming platform of choice for now. **EXCELLENT**	
Windows Vista	• Still confusing to navigate, but in new and different ways. Some Control Panel apps contain useful new settings, but many are unchanged from XP and lurk in new locations. • Transparency, animation, and other effects provide helpful visual cues about files and programs. • Flip 3D program switching lets you scroll through a three-dimensional animation of all your running apps. • Systemwide search and indexing finds files, programs, and Web pages on or beyond your PC's hard disk. **VERY GOOD**	• Improves on XP's security with User Access Control and ActiveX tweaks, but remains a major malware target. • Still requires a third-party bidirectional firewall, since its own firewall settings for outgoing connections are for experts only. • Includes Windows XP's file- and folder-level encryption options. The Business and Ultimate Editions' industrial-strength Bitlocker encryption protects your entire hard disk from tampering. **GOOD**	• Includes enhanced versions of Media Player, Media Center (except in Business edition), and Movie Maker, plus new mail, calendar, and DVD authoring tools. • Won't run 16-bit apps and some 32-bit utilities written for XP. Otherwise, it runs most existing Windows software. • Current game performance is particularly slow compared with XP, perhaps due to still-buggy drivers. • DirectX 10 promises a dramatic boost to 3D gaming when supporting hardware is more widely available. **VERY GOOD**	
Mac OS X	• Interface is uncluttered, efficient, and logical, though some applications break its legendary consistency. • Subtle transparency and 3D effects aid with navigating dialog boxes and program windows. • Exposé lets you see and choose among all of your open windows or the desktop with the press of a key. The forthcoming Spaces feature adds virtual desktops. • Dashboard desktop widgets are built-in. • Spotlight searches file metadata, and will expand to the Internet in OS X 10.5. **EXCELLENT**	• Supports strict separation of user and system files for maximum security against malware. • Default settings aren't secure. • Target disk boot mode can turn your Mac into an external hard drive for another machine. It's useful for system recovery, but it bypasses user file passwords. • Includes disk encryption. **VERY GOOD**	• The iLife suite's slick iPhoto digital photography tool lets you edit, print, and share photos. iWeb builds sites, and iMovie and iDVD offer lightweight digital video production. • A dearth of available game titles compared with Windows, but Photoshop and Microsoft Office are both here to stay. **VERY GOOD**	
Linux	• Gnome and KDE interfaces emulate the Mac OS and Windows XP, respectively, in many ways; they offer virtual desktops, as well. • Hardware graphics acceleration is available, but requires expert installation and configuration. • Beagle desktop search utility indexes local files and Web sites. **GOOD**	• Like OS X, Linux is more secure than Windows; for example, by default Ubuntu doesn't even create the root user account that's a logical target for Linux malware. Also like the Mac OS, it's more obscure—its lower installed base attracts fewer malware authors than Windows does. • Disk encryption requires expert configuration or third-party utilities. **VERY GOOD**	• Access to thousands of free applications, including office suites, graphics and media editors, games, and software development tools. Some of these programs rival commercial OS X and Windows apps, but most offer subsets of their features. • If you want Adobe Photoshop and Microsoft Office, use virtualization or dual-boot for better performance. **VERY GOOD**	

software, along with hardware advancements and standardization on x86 CPUs, allow any operating system to play host to virtual versions of other OSs.

Every machine still needs a primary operating system, but mixing and matching them is now much easier. My home office contains a mix of Macs running OS X and PCs running Windows XP, Windows Vista, Ubuntu, and OpenSuSE Linux. And my next system will likely be a Mac with three or more of those OSs installed—maybe even running—at the same time. If you can afford Apple's hardware, that's the choice I'd recommend. Why? Check out our chart below for a breakdown of the major contenders' strengths and weaknesses, and read on for a look at the state of each OS.   ▶

Hardware price/performance	Virtualization	Bottom line
• Performs fine with slower processors and limited RAM and disk space, allowing you to minimize expenditures on new hardware or put them off indefinitely. • Until Vista drivers improve, XP will remain the preferred choice for gamers and others concerned with performance.	• Linux boot managers allow easy multiboot setups. • Can host most x86-compatible operating systems (except Mac OS) via third-party virtualization tools like the free VMWare Server or Microsoft's free Virtual Server 2005 R2. • Runs in virtual machines hosted on Intel-based Macs and PCs.	• By now, you know it and you either love it or hate it. If you're okay with XP, there's no pressing need for you to switch. Five years of updates have made Windows XP as secure as it's going to get, though not as safe as Vista, OS X, or Linux. Minimal hardware requirements will make it the top gaming platform until DirectX 10 takes over. If you're not dying to buy a new PC, XP will be a fine OS for at least another year or two.
EXCELLENT	**GOOD**	**VERY GOOD**
• Requires significantly more memory and hard-disk space, and runs slower than XP on the same hardware. • Minimum system requirements are an 800-MHz processor, 512MB of memory, and 15GB of free disk space. • The Aero interface works best with recent graphics accelerators and requires an additional 512MB of RAM. • The sometimes difficult upgrade process means you're better off buying a new PC with Vista preinstalled.	• Same capabilities as Windows XP, but higher memory requirements could either reduce performance or prevent Vista from serving as a host or guest OS on systems where RAM is tight. • License prohibits running anything but the expensive Enterprise or Ultimate Editions under virtualization software like Parallels or VMWare.	• Get it if you're buying a new PC; XP users, though, have few urgent reasons to upgrade. Windows Vista's interface is alive compared with XP's relatively flat scheme, an innovation that could get you more excited about your daily computing tasks. Vista also includes some useful new tools and is safer to take for a spin around the Internet. Does that justify the hefty upgrade price and even more costly hardware requirements? Probably not, but if it's time to buy a new computer anyway, you won't be tempted to reinstall Windows XP.
FAIR	**GOOD**	**GOOD**
• Gorgeous design all around. • Budget Windows PCs are less expensive than even Mac Minis. • Low-end MacBook laptops don't cost much more than similar Windows models do. • Attractive but pricey Mac Pro and MacBook Pros compare well with high-end PCs from Lenovo and Sony.	• Boot Camp allows you to install Windows or Linux as a dual-boot option on Intel-based Macs. • Parallels and VMWare utilities permit Mac OS to run virtual versions of Windows and Linux. • Apple prevents OS X from running on non-Mac hardware, so a Mac is the only way to run all three OSs on the same machine.	• If Apple's hardware fits your price range, you'll get a nicely designed machine running a beautiful OS, plus you'll be able to switch to any other environment at the drop of a hat. While early versions of OS X were buggy and incomplete, Mac OS X 10.4 is much more solid. Version 10.5 promises additional polish and a few yet-to-be-announced features. All current Mac models run Windows and Linux, too, something no other platform can boast. Plus, as long as malware authors continue to focus on Windows, it's likely to remain relatively virus- and spyware-free.
GOOD	**EXCELLENT**	**EXCELLENT**
• Specialized distributions and kernel customization allow Linux to perform well on older and inexpensive systems. • Support for newer hardware often lags behind that of Windows and OS X.	• Runs as a guest or host with other OSs through VMWare or other stand-alone virtualization software. • Distributions compiled with support for the Xen virtualization spec can serve as a guest or host OS without additional software (Windows does not support Xen virtualization).	• If you're tired of fighting Windows malware and viruses, it's simple to find out whether Linux will meet your needs—just grab a bootable CD and give it a shot. Easy-to-install, free, and feature-rich Linux distributions like Ubuntu 6.10 and OpenSuSE 10.2 are great options for tech-savvy computer users. Without a Steve Jobs type driving development forward, the Gnome and KDE interfaces evolve gradually. While Linux lacks the polish and deep-pocket support of its rivals, its improved ease of use, functionality, and security make it a viable alternative to Windows and OS X.
VERY GOOD	**VERY GOOD**	**VERY GOOD**

TRANSPARENT WINDOWS AND handy desktop gadgets are the first things you'll notice in Vista, but Microsoft's latest also includes utilities like Windows Defender.

EXTOLLING WINDOWS XP

WINDOWS VISTA'S LONG gestation and protracted birth pangs are over at last, thank heavens. Vista's running nicely on my fairly modern desktop system, and I've enjoyed using its updated interface and utilities for everyday work and recreation. But before we get to the new kid, a few words about good old Windows XP.

Despite its reputation for swiss-cheese security, XP quickly became a very successful OS. Before XP (and its admirable predecessor, Windows 2000), Microsoft operating systems crashed, died, and bluescreened weekly or even daily. Though crashes still occur, they're far less frequent than in previous Windows versions, and some XP users (including me) have PCs that rarely see so much as a hiccup.

XP has been the biggest-selling operating system in the universe for almost half a decade now, so it's where most of the action is. Whatever you long to do with a PC—accounting, blogging, photography, engineering, aimless wandering on the Internet—the necessary hardware and software will work under Windows XP.

XP'S SECURITY CENTER, introduced with Service Pack 2, helped lock down key pieces of the OS.

Of course, to keep that copy of XP running smoothly, you'll have to work to keep the wolves at bay. While Service Pack 2, Windows Security Center, and Internet Explorer 7 have closed a lot of holes, XP is sure to attract hackers and malware writers for years to come. Your firewall, antivirus software, and spyware

protection remain as important as ever.

According to Forrester Research, 40 percent of business Windows customers will transition to Vista within the next year, and consumer adoption will expand gradually from 12 million users in the first year to 73 million after four years. Microsoft will continue to roll out Windows XP security fixes for at least five years after it releases Service Pack 3, currently slated for the first half of 2008. So relax. There's no rush.

VISTA SIGHTINGS

WINDOWS VISTA DOES deliver improvements in security (though you'll still need a third-party firewall unless you're up for some complex configuration tasks), plus several improved utilities and new features. It's the look, though, that makes Vista a desirable upgrade for most people. Vista's Aero environment displays windows, icons, and other desktop elements with more colors, shading, and shadowing, as well as—for the first time—transparency. Buttons glow like red or blue LEDs when you hover over them. Translucent window frames, menus, and title bars remind you of other

applications buried a layer or two deep, and the Flip 3D task switcher is clearly inspired by Apple's Exposé, which displays cleverly arranged thumbnails of all your running applications.
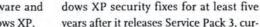
Cribbing more directly from Apple, the gadget-populated Windows Sidebar is a variation on OS X's Dashboard widgets. However, the redesigned Media Player, Control Panel, mail, and photo previewing interfaces are evidence that many of Vista's changes are only skin deep. Drilling down through a new menu structure often reveals the very same dialog boxes that were present in Windows XP.

Gamers should eventually see great dividends by switching to Vista. DirectX 10 promises to accelerate games eightfold, and it won't be available under Windows XP. And Vista's Windows Presentation Foundation makes it easier for software developers to produce graphics-hardware-accelerated applications.

Vista's many innovations come at a cost, however. Recent PC World Test Center trials demonstrated that although Vista performs just fine on the Microsoft-recommended hardware, Windows XP runs the same applications significantly faster (see find.pcworld.com/56493). So unless you can tolerate a downgrade in performance, you may want to upgrade your PC right along with your operating system. Nevertheless, on a reasonably ▶

IS THAT WINDOWS Media Player running on that Mac? Thanks to Parallels' Coherence feature, Macs can run Windows apps right alongside Mac software.

equipped machine, Windows Vista provides fast search results for files, documents, e-mail messages, and Web sites.

HELLO, PC? I'M MAC

OR MAYBE YOU'RE ready for an even bigger switch. The simple, clean lines of MacBooks and Mac Pro desktops hint that using a computer could be straightforward—easy, even. Mac OS X offers the same promise. Although Apple's operating system and Windows generally let you do all the same kinds of things, the Mac interface just seems to have fewer layers, levels, and cryptic settings.

It's nearly enough to make a 20-year Windows user jump ship. But that's not necessary, of course. Apple's Boot Camp allows Intel-based Macs to boot Windows and other x86 operating systems, such as Linux. Now, both übergeeks and regular folks who enjoy OS X's simplicity but still need to run applications in Windows XP, Vista, or Linux can run all of these operating systems on one computer.

Apple still won't allow OS X to run on non-Mac systems, making Apple hardware the only way to run all OSs on one machine. And with the addition of inexpensive or free virtualization software from Parallels and VMWare, Macs can run those operating systems simultaneously. Parallels' software even provides a unique, somewhat eerie feature, "Coherence," that runs virtualized Windows

applications side by side with OS X programs. Parallels got a bit of a jump on VMWare, whose first OS X product, codenamed Fusion, is due this summer. At press time, both companies were working to add 3D acceleration to their products, which could finally make serious gaming on a virtualized OS a reality.

But the big Mac OS news arrives this spring when Apple releases OS X 10.5, aka Leopard. The update promises a modest but desirable collection of new features, including Time Machine, a new automatic backup system that lets let you flip back and forth through previous versions of your files. Leopard also adds support for stationery and an integrated to-do list in Mail; an expansion of the Spotlight search tool to locate files on other Macs on your network; an Exposé-like virtual desktop feature called Spaces; and some as-yet-unannounced (killer, we hope) features.

LINUX: LAST BUT NOT LEAST

DISTRIBUTIONS LIKE THE increasingly popular Ubuntu are going a long way to change Linux's reputation for being difficult and complex to install and configure. Ubuntu's bootable DesktopCD lets

you see how you'll like Linux (and a bit about how Linux will like your PC) without installing anything to the hard disk. A few more clicks will make room for Ubuntu and set it up on your hard drive, alongside Windows. (See find.pcworld. com/56475 for more.) Once the OS is in place, a couple of simple applications let you choose from and install hundreds of free programs, including productivity, multimedia, and development tools.

Another popular distribution, Novell's OpenSuSE, provides configuration utilities and libraries of applications that are nearly as easy to navigate as Ubuntu's. Both Linux distributions deliver frequent bug fixes and automatic updates.

And visually-minded Linux fans can choose from dozens of user interfaces, chief among them KDE and Gnome. Both interfaces are evolving steadily, borrowing good ideas from each other and from Apple and Microsoft as well.

With its minimal hardware requirements and solid security, Linux can serve as a bullet-proof primary OS. And with

UBUNTU'S ADD/REMOVE APPLICATIONS dialog box helps you download and install free software.

painless dual-booting and virtualization options, including several free and open-source apps and the kernel-based Xen software, you can easily try out the latest in Linux without having to give up your current operating system. ∎

Scott Spanbauer is a PC World *contributing editor and writes the* Internet Tips *column.*

30 million computer users <u>don't</u> trust the power grid.

APC **Smart-UPS® 1000** provides power protection and battery backup during power outages. *Also available in rack-mount models.*

They <u>do trust</u> APC. Shouldn't you?

"Overall the reliability of electrical systems in the US almost certainly will decline over the next 10 years."

– Venture Development

Think of all that you rely on your computer for: personal and business files, financial information, broadband access, videos, photos, music, and more. Increasingly, computers are the hub for managing our lives. And more people rely on APC to protect their hardware and data than any other uninterruptible power supply (UPS) brand.

Why is APC the world's best selling power protection? For 20 years, we have pioneered power protection technology. Our Legendary Reliability® enables you to save your data, protect your hardware, and prevent downtime. It also guards against a power grid that is growing less reliable every day.

According to the Department of Energy, electricity consumption will increase by

40% over the next 10 years. Yet today, investment in utilities is at an all-time low. It's a "perfect storm" for computer users, one that makes APC protection even more essential.

APC has a complete line of power protection solutions to suit a range of applications. Already an APC user? Get the latest replacement battery cartridge for your unit or upgrade to a newer model.

Find out why 30 million people don't need to worry about losing their music, photos, and financial files.

READERS CHOICE 2006

Find APC power protection products at:

COMP USA We get it. We get it. • **CDW** • **Office DEPOT** • **BEST BUY**

APC Solutions for Every Level of Protection

Home Starting at $59.99
Back-UPS® ES 550R
Best value battery backup and surge protection for home computers.
8 outlets, DSL protection, 44 minutes of runtime

Home Office Starting at $99.99
Back-UPS® ES 750
Complete protection for home and small business computers.
10 outlets, DSL and Coax protection, 70 minutes of runtime

Small Business Starting at $459.00
Smart-UPS® 1000
High-performance network power protection with best-in-class manageability for servers.

Register to WIN a Smart-UPS® 1000 — value $459 ERP.

Also, enter keycode to view other special offers and discounts.

APC Legendary Reliability®

Visit www.apc.com/promo and enter key code s180x • Call 888-289-APCC x4409 • Fax 401-788-2797
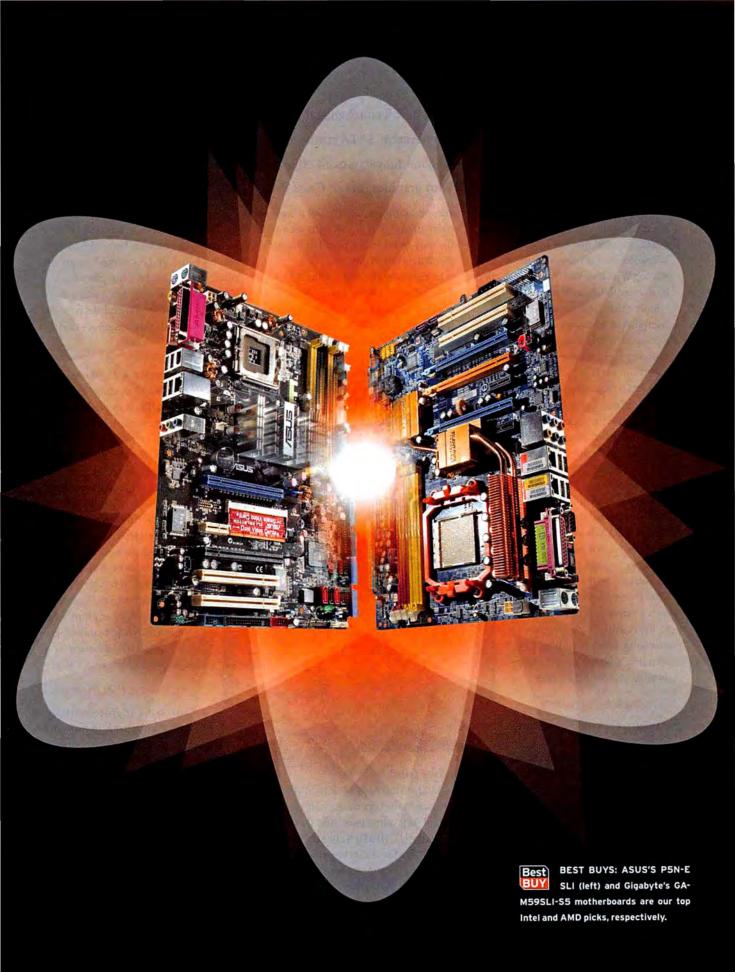
MOTHERBOARDS:
POWER AT THE RIGHT PRICE

If you want the newest CPU, graphics, and storage technologies, you need a motherboard that can support them all. Our lab tests reveal great boards that won't break the bank.

BY JON L. JACOBI
TESTING BY WILLIAM WANG
PHOTOGRAPH BY GEOFF SPEAR

BEST BUYS: ASUS'S P5N-E SLI (left) and Gigabyte's GA-M59SLI-S5 motherboards are our top Intel and AMD picks, respectively.

A NEW MOTHERBOARD can provide cool new technologies that your PC might be missing: faster, second-generation SATA connections, which currently reach 3 gigabits per second (gbps); gigabit ethernet; high-definition audio; and even dual-card graphics (SLI or CrossFire).

We evaluated 14 standard-size motherboards by building systems using each board, running our Windows XP–based WorldBench 5 benchmark, and then installing Windows Vista Ultimate to check for compatibility problems.

Rather than make an apples-to-oranges comparison between AMD- and Intel-equipped motherboards, we split our roundup into two groups: seven boards based on AMD's socket AM2 (for use with AMD chips requiring DDR2 memory) and seven boards employing Intel's socket LGA775 (for use with that company's dual-core and quad-core processors). The Intel boards' WorldBench 5 scores were nearly 15 percent better than those of the AMD group, thanks to the advantage the Core 2 Duo CPU holds over the Athlon 64 X2 processor running at the same clock speed, though the Intel chip we tested costs around $200 more. Performance within each group varied little, however, so once you decide whether to choose an AMD or an Intel CPU, selecting a board largely comes down to assessing its features.

OUR BEST BUYS
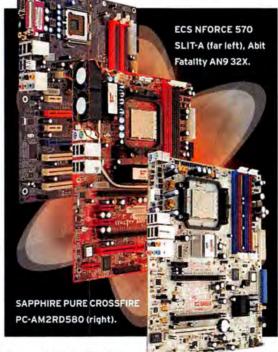
OUR TOP PICK among the Intel-based motherboards is the $149 Asus P5N-E SLI. The only model we looked at featuring nVidia's nForce 650i SLI x8 chip set, it did just about everything well. It still has a few minor weaknesses, however; for instance, it provides only three one-eighth-inch analog outputs on the back panel, limiting you to 5.1-channel sound (instead of 7.1) unless you use the rear-panel digital coaxial connection or internal analog audio header. The second-ranked ECS nForce 570 SLIT-A (v5.1) impressed us with a

very attractive price ($95), but it uses an older nForce 570 SLI x8 chip set and is the only board in our roundup that lacks FireWire ports of any kind.

In contrast, the $249 Asus P5N32-E SLI, using nVidia's nForce 680 SLI x16 chip set, missed a spot on our chart largely because of its relatively high price.

Among AMD-based boards, Gigabyte's $170 GA-M59SLI-S5 won our Best Buy nod, combining state-of-the-art and legacy peripheral ports with a nice price. A pair of AMD-based

ECS NFORCE 570 SLIT-A (far left), Abit Fatal1ty AN9 32X.

SAPPHIRE PURE CROSSFIRE PC-AM2RD580 (right).

boards failed to rank. The $165 Asus M2R32-MVP's performance numbers were a hair slow in a field of fast competitors. And DFI's $190 LanParty UT NF590 SLI-M2R/G, while an excellent overclocker's board, just missed out because it allows a maximum of only 4GB of memory and lacks legacy ports (which may not be a big deal, but other boards continue to offer them).

Power users with AMD leanings should

note that overclocking is the raison d'être of the Abit Fatal1ty AN9 32X, the Asus Crosshair, and the Sapphire Pure Cross-Fire PC-AM2RD580 boards. All three provide every BIOS-tweaking option you could possibly wish for.

Despite not making the chart, the Intel DG965WH remains a very good choice for a budget system, where overclocking and high-end graphics aren't as great a concern. The board's integrated GMA X3000 graphics chip ran Vista's Aero interface satisfactorily, and it saves you the expense of buying a graphics card.

CHOOSING A CPU

PREVIOUS TESTING HAS shown that Intel's Core 2 Duo has shoved AMD's chips into the backseat in performance. (See find.pcworld.com/56522.)

For our tests we used an AMD 2.6-GHz Athlon 64 X2 5200+ that costs about $300. Our Intel test bed used an approximately $500 2.66-GHz Core 2 Duo E6700.

If you want maximum performance, buy a top-of-the-line Core 2 Duo or perhaps a quad-core chip (see "Quad-Cores Need Multi-threaded Apps" on page 115). If you don't want to pay Formula 1 prices and you're content with mere NASCAR get-up-and-go, opt for an AMD processor or a cheaper, second-tier Intel CPU.

GREATER GRAPHICS

IF YOU'RE A high-resolution-gaming fan, graphics support should weigh heavily in your motherboard buying decision. Ten of our test models have two PCI Express x16 slots, which together will support two graphics cards. However, the x16 slots on the nVidia 570- and 650i-based boards function at only x8 when operating in dual-graphics-card mode (SLI in this case). Caveat: For a single-card setup, you can use any brand of PCIe graphics board in these systems; but when doubling up, you must use only nVidia cards in SLI motherboards and

only ATI cards in CrossFire boards. Dual-card graphics are overkill at 1280-by-1024-pixel resolution or less, but they improve 3D graphics performance as you increase the resolution beyond that. In our test group, the four boards with Intel's P965 chip set all have a single PCIe x16 slot.

Intel's DG965WH is the only motherboard in our roundup with integrated graphics (we tested it, and all boards, with a GeForce 7800 graphics card to level the playing field). Though we recommend getting a discrete graphics board for gaming, integrated graphics are adequate for most other uses. Just make sure you ▶

FEATURES COMPARISON

TEST Center
FEATURES SET MOTHERBOARDS APART

PERFORMANCE WITHIN EACH group varied only slightly, so components and connections should guide your buying decision.

INTEL-BASED MOTHERBOARD	PCW Rating	Performance[1]	Features and specifications	Bottom line
1 **Asus P5N-E SLI** **Best BUY** $149 find.pcworld.com/56346	**83** Very Good	• WorldBench 5 score: 153 • Overall specs: Very Good • Overall design: Very Good	• nVidia nForce 650i SLI chip set • 2 PCIe x16, 1 PCIe x1, 2 PCI slots • 4 SATA, 2 PATA ports • 4 + 2 USB, 1 FireWire, 1 eSATA ports[3]	This impressive all-around SLI board has two ATA channels and an eSATA port, though only x8 support. You'll need a rear-panel breakout to get 7.1-channel analog audio.
2 **ECS nForce 570 SLIT-A (v5.1)** $95 find.pcworld.com/56347	**82** Very Good	• WorldBench 5 score: 156 • Overall specs: Good • Overall design: Very Good	• nVidia nForce 570 SLI chip set • 2 PCIe x16, 2 PCIe x1, 3 PCI slots • 8 SATA, 1 PATA ports • 4 USB ports	Easily the lowest-priced SLI board on the chart, this model is a very good performer. A lack of FireWire ports and a limited x8 SLI chip set are the only nits to pick.
3 **MSI P965 Platinum** $135 find.pcworld.com/56348	**82** Very Good	• WorldBench 5 score: 158 • Overall specs: Good • Overall design: Very Good	• Intel P965 chip set • 2 PCIe x16, 2 PCIe x1, 2 PCI slots • 7 SATA, 1 PATA ports • 4 + 2 USB, 1 + 2 FireWire ports[3]	The best-performing board, this model also offers a full complement of both cutting-edge and legacy features. Only the lack of dual graphics kept it out of the top spot.
4 **Gigabyte GA-965P-DQ6** $198 find.pcworld.com/56349	**80** Very Good	• WorldBench 5 score: 156 • Overall specs: Very Good • Overall design: Very Good	• Intel P965 chip set • 2 PCIe x16, 3 PCIe x1, 2 PCI slots • 8 SATA, 1 PATA ports • 4 USB, 1 FireWire, 0 + 4 eSATA ports[3]	Another board with a complete set of legacy ports and state-of-the-art features. We love the friendly color scheme, but the price—not so much.
5 **Abit AB9 Pro** $150 find.pcworld.com/56350	**80** Very Good	• WorldBench 5 score: 157 • Overall specs: Good • Overall design: Very Good	• Intel P965 chip set • 1 PCIe x16, 2 PCIe x1, 2 PCI slots • 8 SATA, 1 PATA ports • 4 + 2 USB, 0 + 2 FireWire, 1 eSATA ports[3]	This great performer has contemporary ports to spare: ten USB (six on headers), eight SATA, and a single eSATA port. But a lack of legacy ports dropped its ranking.
AMD-BASED MOTHERBOARD	PCW Rating	Performance[2]	Features and specifications	Bottom line
1 **Gigabyte GA-M59SLI-S5** **Best BUY** $170 find.pcworld.com/56351	**83** Very Good	• WorldBench 5 score: 136 • Overall specs: Very Good • Overall design: Very Good	• nVidia nForce 590 SLI chip set • 2 PCIe x16, 1 PCIe x8, 1 PCIe x1, 2 PCI slots • 8 SATA, 1 PATA ports • 4 USB, 1 FireWire, 0 + 2 eSATA ports[3]	Like its 965-based sibling on the Intel portion of the chart, this model has all of the legacy ports and cutting-edge features you'll need—but at a better price.
2 **Abit Fatal1ty AN9 32X** $170 find.pcworld.com/56352	**82** Very Good	• WorldBench 5 score: 135 • Overall specs: Very Good • Overall design: Superior	• nVidia nForce 590 SLI chip set • 2 PCIe x16, 2 PCIe x1, 1 PCI slots • 6 SATA, 1 PATA ports • 4 + 2 USB, 0 + 2 FireWire ports[3]	This board performed well at specified speeds and was born to overclock. If you don't need legacy parallel or serial ports, it's a terrific deal.
3 **MSI K9A Platinum** $130 find.pcworld.com/56353	**81** Very Good	• WorldBench 5 score: 133 • Overall specs: Good • Overall design: Very Good	• ATI CrossFire Xpress 3200 • 2 PCIe x16, 2 PCIe x1, 2 PCI slots • 4 SATA, 1 PATA ports • 4 + 2 USB, 1 + 1 FireWire ports[3]	This very solid offering mixes all of the newest and oldest technologies, but it performed a tad slowly in our testing, which kept it from the top of the chart.
4 **Asus Crosshair** $249 find.pcworld.com/56354	**80** Very Good	• WorldBench 5 score: 134 • Overall specs: Very Good • Overall design: Superior	• nVidia nForce 590 SLI chip set • 2 PCIe x16, 1 PCIe x4, 3 PCI slots • 6 SATA, 1 PATA ports • 4 + 2 USB, 1 + 1 FireWire, 2 eSATA ports[3]	A tweaker's delight, with a ton of techie-oriented lights and other features. It's pricey if your needs are basic, but it's a great board for overclocking enthusiasts.
5 **Sapphire Pure CrossFire PC-AM2RD580** $130 find.pcworld.com/56355	**80** Very Good	• WorldBench 5 score: 134 • Overall specs: Good • Overall design: Very Good	• ATI CrossFire Xpress 3200 • 2 PCIe x16, 1 PCIe x1, 1 PCI slots • 8 SATA, 1 PATA ports • 4 USB, 1 + 1 FireWire ports[3]	The classy, retro, pale green look belies a true overclocker's heart. But this board could use better SATA connectors, and Sapphire's support policies are stingy.

CHART NOTE: We tested all boards with a 256MB EVGA GeForce 7800GT graphics card, 2GB of Kingston PC-6400 DDR2 memory, and two 250GB Western Digital hard drives configured in a striped RAID array. For more-extensive test results and full specifications, go to find.pcworld.com/56333. **FOOTNOTES:** [1] Intel boards were tested with a 2.66-GHz Core 2 Duo E6700 CPU. [2] AMD boards were tested with a 2.6-GHz Athlon 64 X2 5200+ CPU. [3] The first number listed for peripheral ports indicates those located on the back panel of the motherboard; the second number (following the "+") indicates ports located on included expansion brackets (which will occupy an expansion bay in the case). Most boards also have additional internal port headers to which additional expansion brackets can connect.

opt for a motherboard that has a PCIe x16 slot so that you can add a graphics card later if necessary.

SHIFTS IN STORAGE

EVERY MOTHERBOARD IN the roundup has a floppy-drive connector, and many of them include drivers on floppies. Parallel ATA (PATA) drive support is also universal, though only Asus's P5N-E SLI offers more than one connector. PATA support persists despite Intel's decision to drop it from the P965/ICD8DH chip set—which overlooked the fact that the majority of current internal CD/DVD burners are PATA-based. Not only does no performance advantage accrue from replacing a PATA burner with a same-speed SATA drive, but vendors have been slow to introduce SATA burners. Dropping PATA simply forced P965 motherboard vendors, Intel included, to add an auxiliary PATA controller.
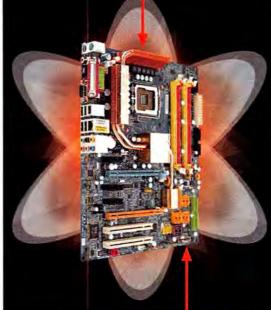
State-of-the-art 3-gbps SATA is universal in the boards in our roundup, as is RAID hard-drive support. Every board offers both RAID 0 (in which data is split, or striped, evenly across drives for increased performance) and RAID 1 (in which one drive's contents are mirrored on another drive). Each motherboard also supports either RAID 5 (data striped across at least three drives, with parity protection) or a combination of RAID 0 and 1 (a striped and mirrored pair requiring four drives).

Most of the motherboards include at least six internal SATA ports. In addition, some boards come with an external SATA (eSATA) connector—a handy feature that lets you hook up an external SATA drive (which is still rare despite being faster than USB or FireWire types). The Asus P5N-E SLI and M2R32-MVP and the Abit AB9 Pro each feature a single back-panel eSATA port, while the Asus Crosshair and the Asus P5N32-E SLI offer two. Of course, each board in

SEVERAL BOARDS FEATURE heat-pipe cooling. This is a clever way to reduce noise without using multiple fans.

THE GIGABYTE BOARDS include locking SATA cables to further prevent them from being yanked out.

our test group allows you to connect eSATA drives using internal SATA connectors with an expansion bracket (such as those that Gigabyte bundled with its boards), but dedicated rear-panel ports save you the hassle.

DIFFERENT BOARDS, SIMILAR CHORDS

THOUGH EACH MOTHERBOARD in our roundup uses PCI Express, with its greater data throughput and better bandwidth sharing, all of the motherboards we tested still support the older PCI technology as well. Every board provides four memory slots split between two channels, plus support for up to DDR2 800 memory, except the ECS nForce 570 SLIT-A, which tops out at DDR2 667.

As you might expect, USB 2.0 is ubiquitous: Every board has the capability for

at least eight USB 2.0 ports, and most have ten. Generally, half of a board's USB and FireWire ports are externally accessible on the back panel, and the other half are provided in the form of headers (arrays of pins) to which you can attach either expansion brackets or leads for connections that are built in to your computer case.

Several models in our review lack legacy ports (parallel and serial connections) for attaching older printers, PDAs, and scanners. The Abit AB9 Pro and Asus P5N32-E SLI, however, provide serial-port headers. The Asus P5N-E SLI and Intel DG965WH boards couple serial-port headers with back-panel parallel ports.

Gigabit ethernet is universal on all of the motherboards, and half of the models—Abit's AB9 Pro and Fatal1ty AN9 32X, Asus's Crosshair and P5N32-E SLI, DFI's LanParty UT NF590 SLI-M2R/G, Gigabyte's GA-M59SLI-S5, and MSI's K9A Platinum—offer two LAN connections, providing the capability either to connect to two networks or to double the bandwidth. (The nVidia-based boards supply DualNet channel bonding, providing features such as load balancing and TCP/IP acceleration for faster Web browsing.)

Every one of the motherboards we tested delivers extremely high-quality sound, because they all implement Intel's High Definition Audio standard. Hardware that conforms to the standard can produce up to 7.1-channel, 24-bit output (32-bit internal processing) and 192-kilohertz sound. Compared with the older AC'97 specification's maximum output of 20-bit, 48-kHz audio, the newer standard provides substantially better audio quality. To take advantage of the more advanced audio capability, or course, you need to have content that has been encoded at the higher quality level—for example, songs on DVD-Audio or DTS audio

discs—as well as software that can play it.

Though all of the boards support the standard, we noted some minor differences in implementation. The Realtek 885 or 883 chip found in the Abit AB9 Pro, the Asus P5N-E SLI, the DFI Lan-Party UT NF590 SLI-M2R/G, the ECS nForce 570 SLIT-A, the Gigabyte GA-M59SLI-S5, and both MSI Platinum boards is rated at an excellent 106-dB signal-to-noise ratio. That ratio is a very good indicator of the overall quality of the digital-analog/analog-digital converters; a high number means you'll hear less background noise during quiet musical pas-

sages or when cranking the line or input volume. The ADI1988 chip in the Asus Crosshair and M2R32-MVP boards provides a signal-to-noise ratio of 105 dB, while the chips in the other boards are rated at 95 dB. (Note that those numbers are for playing 24-bit audio—expect about 6 dB less during normal 16-bit usage.)

If you peruse our chart on page 113, you might notice the low number of slots, especially PCI ones. With multichannel audio, FireWire, and SATA now integrated onto most motherboards, the need for slots has diminished. The average user will probably never install anything

beyond a graphics card or a modem, and the latter is readily available in PCIe x1 form. That said, numerous advanced audio, video-capture, FireWire 800, and other specialty cards are still PCI-based, so if your needs are fairly high-end, keep the number of PCI slots in mind.

All of the boards also provide extensive BIOS overclocking features, except for Intel's DG965WH. Intel marks its CPUs and buses at the speed it wants them to run, and if you want guaranteed stability, you should probably run them at those specified speeds. All of the other boards have such overclocking options as the ▶

PROCESSORS

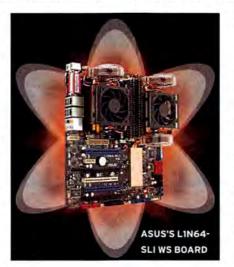# QUAD-CORES NEED MULTITHREADED APPS

FOR MAXIMUM PERFORMANCE when multitasking or when using demanding, multithreaded applications, quad-core CPUs such as Intel's Core 2 Extreme QX6700 or the more consumer-oriented Core 2 Quad processors offer some performance benefits. Quad-core chips, for example, enable video encoders to process multiple frames simultaneously.

On the other hand, if you tend to spend your day simply switching between tasks that don't use the CPU concurrently—say, sending e-mail and trolling eBay—*PC World*'s lab tests reveal that four cores offer no real advantage over two; even two cores help only in certain cases, such as when you're backing up a hard drive or burning a DVD in the background while word processing.

For anyone playing games or manipulating audio or video on a regular basis, however, having four cores can *potentially* deliver real benefits. We qualify that statement because, aside from a few forth-coming games such as Unreal Tournament 2007, the list of optimized applications is short, dominated by expensive offerings such as the latest versions of Adobe's Premiere Pro and Encore DVD, Autodesk's 3D StudioMax, and Steinberg's Cubase 4. Nevertheless, additional multithreaded software titles are on the way, and eventually every activity

that can benefit from multiple-core processing will do so.

Intel's current quad-core desktop chips work quite nicely in any LGA775-socket-based motherboard, including all of the ones in this roundup, so you can upgrade at any time. Unfortunately, AMD has been mum on its plans for supporting socket AM2 (the current AMD motherboard socket for its DDR2-based CPUs) with single-die, quad-core CPUs.

ASUS'S L1N64-SLI WS BOARD

What AMD has announced and shipped is a quasi quad-core product known as Quad FX, which is really two dual-core Athlon 64 X2 CPUs on a dual AMD socket 1207 motherboard using a slightly revamped nVidia nForce 680a chip set (such as the Asus board pictured here).

Our WorldBench 5 suite of tests doesn't currently include enough apps that take full advantage of a quad-core CPU for this technology to affect test results significantly, but WorldBench 6, now in beta, will. The Quad FX generally fared no better than a similarly configured PC using AMD's Athlon 64 FX-62. See find.pcworld.com/56332 for more details.

For the time being, quad-core sounds sexy, but dual-core is the sweet spot for the majority of users. Early adopters can elect to buy quad-core processors now and see better performance with the few optimized applications.

abilities to run the CPU and bus faster, and to increase voltages to keep components stable at the faster speeds. The Abit Fatal1ty AN9 32X and the Asus Crosshair offer exceptional tweakability—the Crosshair even has a fan-speed boost.

WORKING WITH THE BOARDS

IN OUR TESTS Windows Vista ran successfully and the Aero interface functioned perfectly with all the boards. Asus's Crosshair and M2R32-MVP, however, each required a BIOS update to alleviate long periods of seeming inactivity as we installed Vista.

Under Vista, we also experienced some minor "unknown device" issues—mostly with some boards' Advanced Configuration and Power Interface, which controls hibernation, sleep, and other power-management features.

Utility and tweaking software was another sticky issue under Vista. The majority of the bundled Windows-based monitoring and overclocking apps wouldn't install or run on our test systems. The Sapphire had no Windows-based utilities, while Asus's Probe II monitoring and AI Boost overclocking programs ran well, even though the main setup program didn't (we had to install the utilities manually). Motherboard-tweaking software often undergoes a lengthy revision process before all the bugs are worked out.

One noticeable trend with the more expensive boards is the use of heat-pipe cooling, which draws heat away from critical components and toward additional heat sinks strategically located near the CPU fan. By avoiding the use of multiple fans, this method offers a clever way to reduce noise and still keep components cool. The Abit Fatal1ty AN9 32X, the Asus Crosshair and P5N32-E SLI, the MSI P965 Platinum, and both Gigabyte boards feature this innovation.
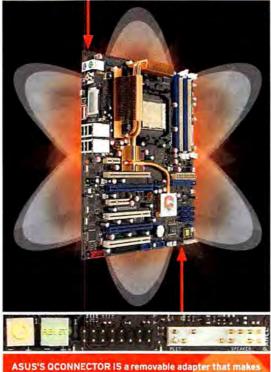
Our complaints about board layout are minimal, and most relate to one-time setup chores. The IDE connectors on the MSI K9A Platinum and the Asus M2R32-MVP and Crosshair sit near their 24-pin power connectors, which makes inserting both cables hard. Cables connected to the Asus Crosshair's PATA port and two of its SATA ports interfere somewhat with the insertion of long PCIe graphics cards such as the GeForce 7800 we used in our lab tests.

NICE EXTRAS: AN LCD screen (for BIOS messages), two eSATA ports, plus optical and coaxial audio ports.

ASUS'S QCONNECTOR IS a removable adapter that makes attaching power, reset, and other wires that much easier.

We were of two minds about the floppy-disk and internal SATA connectors on the DFI LanParty UT NF590 SLI-M2R/G. They lie parallel to the board, extending off the edge. This orientation made attaching the cables a bit of a trick, though once connected the cables are tucked nicely out of the way. The Asus P5N32-E SLI incorporates a similar design with its six SATA ports, as do the Asus P5N-E

SLI and the Sapphire Pure CrossFire PC-AM2RD580 with their IDE connectors. The ECS nForce 570 SLIT-A's front-panel header (for connecting USB ports, for example) lacked any indication of where to attach the power and reset buttons, activity LEDs, and so on. The worst design flaw we spotted, however, was the Sapphire's use of first-generation, rimless SATA connectors; they produce a worrisomely loose connection compared with the rimmed types used on every other board.

If you're into bling or cool workbench diagnostic features, several motherboards stand out. The Abit Fatal1ty, the Asus Crosshair, and the Sapphire Pure CrossFire PC-AM2RD580 are all decked out with LEDs that gleam in the dark. The back-mounted blue LCD of the Asus Crosshair presents BIOS messages and other information, and is very snazzy, as are the backlit reset and power buttons on the board itself. That board also gets major props for lighting the labels of the back-panel USB, eSATA, and other ports, which makes connecting peripherals in the dark much easier. The DFI has similar controls, though they're not as spiffy looking. Asus also offers a nice touch with all of its boards: The QConnector is a removable adapter that you can pull out of the case and hold in your hand while you attach power, reset, and speaker wires and plug the adapter into a motherboard header. It's much easier than fumbling around inside a dark, cramped case.

While you're examining motherboard options, also consider what other system parts you'll need in order to upgrade or build your own PC. For step-by-step guides and details on all of the major system components, see "Best PC Upgrades" at find.pcworld.com/56334. ∎

Jon L. Jacobi is a freelance technology writer based in the San Francisco Bay Area.

PHOTOGRAPHS: ROBERT CARDIN, BACKGROUND: GEOFF SPEAR

SECURITY

Protect Your PC on Zero Day

Strategies to keep your PC safe when patches aren't available.

ZERO-DAY EXPLOITS hit vulnerabilities in a program that the software's maker has not had time to patch yet. But even during this time of exposure, you have ways to help keep your computer safe.

1 GET RID OF Internet Explorer 6. One of the best moves you can make to improve Internet safety is to ditch Microsoft's notoriously hole-infested browser. No program is completely safe, of course; but whether because it is inherently vulnerable or because its massive user base makes it an attractive target, IE 6 might as well have a giant bull's-eye painted on it. Upgrade to IE 7 or to an alternative browser such as Firefox or Opera.

2 TRY ALTERNATIVES TO other programs that have been targeted by zero-day attacks. The free Foxit program displays PDFs, for instance, and OpenOffice works with many Office documents.

3 ENABLE AUTOMATIC UPDATES for Windows and other programs whenever possible. Patches won't help against zero-day incursions, but major vulnerabilities tend to remain targets even after the fixes are released, precisely because

attackers know that many people don't bother patching. To check and change your Windows Update settings, click *Automatic Updates* in the Control Panel. To keep up with the changes to your system, we recommend choosing *Download updates for me, but let me choose when to install them.*

Other programs make it more or less easy to find automatic-update settings. For example, in Firefox, head to *Tools•Options•Advanced*, and select the *Update* tab (again, we recommend selecting *Ask me what I want to do* as the standard course of action when Firefox finds updates). To find the settings in Adobe Reader, you'll need to check manually for updates under the Help menu, and then click the *Preferences* button.

4 CONSIDER CHOOSING ANTIVIRUS programs or security suites that include heuristic and/or behavioral analysis to protect your PC against as-yet-unknown dangers. Apps that are designed to perform these types of analyses supplement the more traditional signature-based antivirus software, which by definition must be aware of a threat before it can protect against it.

🦊	DropMyRights Firefox
Target type	Application
Target location	DropMyRights
Target	MyRights.exe" "C:\Program Files\Mozilla Firefox\firef

DROPMYRIGHTS OFFERS FREE preventive protection for any program after you alter its shortcut slightly (see tip number 6).

5 MAKE SURE THAT a firewall—either Windows XP's or a third party's—is running on your PC. Firewalls block malicious worms that could otherwise scan your computer for unpatched vulnerabilities and then try to break in at a weak point. To see whether your PC is running Windows XP's firewall already, go to the Control Panel, open the Security Center, and click the *Windows Firewall* link. Most broadband routers also act as a firewall.

6 USE A PREVENTIVE-measure program such as DropMyRights to supplement your antivirus software or security suite. More and more utilities, both free and commercial, change the way vulnerable programs run to increase the likelihood that even a zero-day attack might not harm or even access the rest of your computer. We evaluate such programs at find.pcworld.com/56441.

7 STAY INFORMED. The PC World Spyware and Security Info Center (find.pcworld.com/56442) carries the latest news on emerging threats, plus safety advice and security product reviews. Other good information sources include the eEye Zero-Day Tracker Web site (find.pcworld.com/56226) and the Security Fix blog (find.pcworld.com/56227). ∎

Help protect your PC

Windows can regularly check for important updates and install them for you. (Turning on Automatic Updates may automatically update Windows Update software first, before any other updates.)

How does Automatic Updates work?

Automatic (recommended)

Automatically download recommended updates for my computer and install them:

| Every day | 12:00 PM |

Download updates for me, but let me choose when to install them.

PATCHES WON'T STOP zero-day attacks, but updates are critical for a safe PC. We recommend that you choose when to patch.

Your people are ready for a new printer.
At this cost, your budget is too.

WITH COLOR ACCESS CONTROL²

HP Color LaserJet 2605dn Printer

- Network- and duplex-ready, workgroup color laser printer
- Print speed: up to 12 ppm black, 10 ppm color
- Print resolution: 600 x 600 dpi with HP ImageREt 2400
- Duty cycle: 35,000 pages per month
- USB 2.0 and Ethernet ports

$499⁹⁹
CDW 963242

HP Color LaserJet 3800n Printer

- Network-ready, color laser printer
- Print speed: up to 22 ppm black and color
- Print resolution: 600 x 600 dpi with HP ImageREt 3600
- Duty cycle: 65,000 pages per month
- USB 2.0 and Ethernet ports

$999 PRINTER CDW 844586
-100 INSTANT SAVINGS¹
$899

HP Color LaserJet CP4005n Printer

- Network-ready, color laser printer
- Print speed: up to 30 ppm black, 25 ppm color
- Print resolution: 600 x 600 dpi with HP ImageREt 3600
- Duty cycle: 80,000 pages per month
- USB 2.0 and Ethernet ports

$1099⁹⁹
CDW 1059022

We're There With The Printing Solutions You Need.

No matter what size your business, there's more work, tighter timelines and smaller budgets than ever before. New printers, with more features and better reliability, can help. CDW has a full line of top-name printers. And with access to the industry's largest inventories, we're there to get you the right printers for your company's needs. So call today and start working better and saving more.

CDW

¹Price reflects $100 instant savings; call your CDW account manager for details; offer ends 3/31/07. ²HP color access control helps you manage color printing usage; with it, you can enable or disable color printing by individual users or groups, or you can disable it entirely. Offer subject to CDW's standard terms and conditions of sale, available at CDW.com. ©2007 CDW Corporation

The Right Technology. Right Away.™
CDW.com • 800.399.4CDW

The Threats You Can't See

No matter how diligently you patch your PC, it's still vulnerable to **zero-day** attacks. Here's what you should know about these hazards and the security holes they exploit.

BY RYAN SINGEL

YOU'RE NO SECURITY slouch. You keep your programs up-to-date, and you have antivirus installed. You're careful about where you surf and what you install on your computer.

But last September, if you had visited a blog hosted by Host-Gator, a top-tier provider based in Florida, your PC's browser would have been summarily redirected to an infected Web site that exploited a vulnerability in an old Microsoft image format. ▶

ILLUSTRATION: STUART BRADFORD

Within seconds, a payload of malware would have invaded your computer.

Had this happened, you'd have fallen victim to a zero-day exploit—an attack against a software flaw that occurs at a time when no patch to correct the problem exists. The term originally described a vulnerability that was exploited "in the wild" (that is, outside a research lab) on the same day that a patch became available for it, leaving IT staffs zero intervening days to close the hole.

Today, the value of zero-day exploits to online criminals is skyrocketing precisely because the attacks can break into up-to-date, well-maintained systems. Last December, for instance, Trend Micro chief technology officer Raimund Genes noticed a sales pitch scrolling by in an Internet chat room: A hacker wanted to sell an undisclosed vulnerability in a beta version of Windows Vista for a staggering $50,000, though Genes was unable to determine if anyone bought the code.

"There's much more of an organized undercurrent now," says Dave Marcus, security research manager for McAfee. "[The criminals] have figured out they can make money with malware."

MALWARE FOR MONEY

THE MALWARE COULD be a "bot," for example, capable of forcing your PC to relay spam or participate in denial-of-service attacks that push Web sites offline. "It's a lot easier than knocking some old lady over the head and stealing her pocketbook," Marcus says. "It's very anonymous, and [a criminal could] do it from the safety and comfort of Starbucks."

Thanks to features such as improved scanning that doesn't rely on signatures, McAfee's antivirus and other security programs are becoming more nimble at protecting against unknown threats. And a wide array of new free and commercial programs supply proactive protection against zero-day assaults by limiting a successful attack's destructive power.

The right security setup can protect you 99 percent of the time, says Jeff Moss, who founded the annual BlackHat security conference. But targeted attacks can sometimes sneak through anyway. "You can go and buy a lot of firewalls and software and equipment," he says, "but if the right zero-day exists in the right component, it's almost like all that extra fanciness doesn't make a difference."

DRIVE-BY DOWNLOAD

A ZERO-DAY ATTACK MARCHES ON

LAST SEPTEMBER Sunbelt Software discovered attacks against a vulnerability in Vector Markup Language graphics, which are rarely seen but still supported in Windows. Within a week, criminals infected thousands of sites with poisoned images capable of inflicting a drive-by-download attack on any hapless user who viewed the image.

September 18, 2006: The first VML image attacks are reported on a Russian Web site.

September 19, 2006: Microsoft issues an advisory with a workaround, and says a patch will follow on October 10.

September 20, 2006: Symantec reports that the malicious code has been included in an easy-to-use exploit kit sold in Eastern Europe.

September 22, 2006: Zeroday Emergency Response Team releases an unofficial patch. Thousands of legitimate but compromised HostGator sites redirect visitors to sites with the VML attack code.

September 26, 2006: Microsoft releases a fix two weeks ahead of schedule.

January 16, 2007: iDefense confirms that a similar zero-day attack is exploiting another critical VML hole.

The most dangerous varieties of pre-patch attackware permit drive-by downloads, where simply browsing a poisoned page or reading an infected HTML e-mail can trigger an invasion capable of stuffing your PC full of spyware, Trojan horses, or other malware. Between the end of 2005 and the end of 2006, online thugs used at least two such zero-day assaults to attack millions of people by exploiting holes in a rarely used Microsoft image format.

In the case of the HostGator debacle involving the Windows image flaw, the exploit took advantage of a long-unnoticed vulnerability in Internet Explorer's handling of the Vector Markup Language (VML), an infrequently used standard for creating 3D graphics.

The threat was first reported in September by security company Sunbelt Software, which found it on a pornographic Russian Web site. By itself, the hole was bad enough: If you browsed a site containing a booby-trapped image, you could be hit by a drive-by download. But opportunistic attackers recognized how to magnify the damage.

By targeting a second unknown hole in cPanel, a Web site management interface, crooks hijacked thousands of sites maintained by HostGator. Visitors to these legitimate but compromised Web sites were redirected to malicious sites that contained the VML exploit.

Microsoft products such as Internet Explorer, Office, and the Windows operating system itself are common targets of zero-day (and other) attacks, in part because they dominate the software landscape. But Microsoft's failure in the past to adequately integrate security into its product development has contributed to its products' status as popular (and easy) targets. Vista, on the other hand, is getting high marks for security, at least early on; see "Zero-Day Defense in Microsoft's New Operating System" on page 122.

In 2006 alone, four different zero-day exploits attacked Internet Explorer 6, directly or indirectly. The year began with continuing attacks that capitalized on a flaw discovered in December 2005, in the

Windows Metafile image format; the hole was in an underlying part of Windows that IE used to render a WMF image.

Once the attacks became publicly known, Microsoft first said that it would include a patch to fix the hole weeks later, as part of its normal patch cycle—but as exploits and the public outcry against them escalated, the company released an out-of-cycle fix in early January.

The patch didn't end the attacks, however, demonstrating that zero-day exploits can have long-term effects. Like the VML flaw, the Metafile exploit opened the door to drive-by-downloads, which criminals love because victims don't have to click an infected image to be hit. If you installed Microsoft's patch via Automatic Updates, you were fine. But clearly, many Windows users didn't.

In July a malicious banner ad for Deckoutyourdeck.com made its way onto sites like MySpace and Webshots via an ad distribution network serving thousands of sites. The malware hidden in the banner downloaded a Trojan horse onto victims' PCs, and it in turn installed adware and spyware. Informed observers put the number of victims—seven months after a patch was available—in the millions.

TARGETED OFFICE ATTACKS

UNLIKE THE MOST dangerous of the IE-targeted zero-day threats, those directed against Word and other Office apps can't employ drive-by downloads. Instead, they typically rely on getting a victim to double-click an e-mail attachment—and when they are paired with orchestrated attacks against particular companies, even wary users can accidentally click.

By sending the employees of a targeted firm a faked (or "spoofed") e-mail message that appears to come from a coworker or other source within the company, a malicious hacker has a much better chance of persuading recipients to open an attached Word document than if the message appeared to come from a random sender.

In mid-December, Microsoft confirmed that Word contained two such vulnerabilities that crackers exploited to launch

IF THE RIGHT ZERO-DAY EXISTS...IT'S ALMOST LIKE ALL THAT EXTRA [SECURITY] DOESN'T MAKE A DIFFERENCE.

Jeff Moss, BlackHat conference founder

"very limited and targeted attacks," following manipulation of a string of similar flaws in Excel and PowerPoint. The company now warns users to be wary not only of e-mail attachments in messages from unknown senders, but also of unsolicited attachments from known senders.

Microsoft products may be the most popular zero-day targets, but other common software has provided equally dangerous avenues of attack. In January a researcher announced discovery of a flaw in QuickTime's handling of streaming video that would have allowed an attacker to effectively commandeer a victim's computer. In late November 2006 a zero-day vulnerability in the Adobe ActiveX

browser control introduced a similar risk.

The rise in zero-day incidents mirrors a major increase in the annual number of reported software vulnerabilities. In 2006 software makers and researchers catalogued some 7247 vulnerabilities; that's 39 percent more than in 2005, according to Internet Security Systems Xforce.

Most of these bugs don't lead to a zero-day exploit, however. Software companies often receive reports of bugs and crashes from their users, leading to discovery of security holes, which the companies then patch before any attacker can exploit them. When outside security researchers discover a flaw, they (for the most part, anyway) adhere to a set of practices, known as "ethical disclosure," specifically designed to avoid zero-day attacks.

Under ethical disclosure, researchers first contact the software vendor confidentially to report their findings. The company doesn't announce the problem until it has a patch ready, at which ▶

time it publicly credits the original researchers with having uncovered the flaw.

But sometimes researchers, frustrated by the slow pace of a software maker's investigation, go public with details about the vulnerability while it is still unresolved. Some experts consider this tactic a necessary evil to force recalcitrant companies to issue a fix; others decry it as an unethical breach of industry practices.

People who advocate going public argue that if a researcher knows about the flaw, criminals might, too—and smart criminals will keep their attacks small and targeted so as to avoid the maker's attention, and a fix. Unfortunately, all too often, public disclosures of a vulnerability prompt public zero-day attacks.

Another controversial practice is bounty hunting. Some organizations, including iDefense and 3Com's Zero Day Initiative, pay researchers to report zero-day exploits to them. iDefense, for example, offers an $8000 bounty for information about vulnerabilities in IE 7 and Vista.

OFFICE

FOCUSED DOC STRIKE

MAY 21, 2006: Targeted attacks are launched from Taiwan and China, exploiting a Microsoft Word bug (one of many zero-day Office flaws reported during 2006), to strike an unnamed company. According to the Internet Storm Center, the attacks mimic an internal company e-mail, increasing the odds that an unsuspecting employee will open a poisoned attachment.

The security companies then communicate their discoveries confidentially to the software companies. While not universally admired, these programs do put cash in researchers' pockets—an outcome that many prefer to a simple public pat on the back from software vendors.

Perhaps more important, security company bounties compete with the growing black market for zero-day exploits. The Vista vulnerability seller that Trend Micro's Genes observed in a chat room may or may not have found a buyer at the $50,000 asking price, but reports from eWeek.com and security companies say that the Windows Metafile attacks began immediately after a sale of relevant bug details for the tidy sum of $4000.

To find marketable flaws, researchers and criminals use automated tools called fuzzers to locate places where a program accepts input, and then systematically feed them bizarre combinations of data. Frequently this testing turns up an exploitable flaw called a buffer overflow.

Software companies, including Microsoft, commonly use the tools to find flaws in their own products proactively. But so do the crooks: BlackHat organizer Moss and many other experts say that Eastern European organized criminals, disciplined groups of Chinese hackers, ▶

VISTA

ZERO-DAY DEFENSE IN MICROSOFT'S NEW OPERATING SYSTEM

HOW WELL WILL the much-touted new security features in Windows Vista protect you from a zero-day attack? Better than you might think.

The key new feature may be User Account Control, which changes user account permissions in Vista. As a matter of convenience—since administrator privileges are required for many common system tasks—almost every home user runs Windows XP

VISTA'S NEW SECURITY features, such as IE's Protected Mode, offer additional protection—and more pop-up dialog boxes.

under the administrator setting. But attackers can take advantage of the setting's carte-blanche rights to make major modifications to a system, such as by installing malware-hiding rootkits.

In contrast, the default Vista user account occupies a middle ground between an anything-goes administrator

account and a hands-tied guest pass. Microsoft has tried to make the change more palatable by authorizing standard account holders to perform some routine system tasks such as printer driver installation, but power users are already complaining about having to click through too many User Account Control

prompts that demand an administrator password.

Also, Internet Explorer by default runs in a protected mode with the fewest permissions possible. This arrangement limits the havoc that a zero-day exploit capable of hijacking IE (such as the WMF or VML exploit) could wreak on your PC.

Finally, Vista ships with Windows Defender, which can block malware attempts to add entries to the startup folder—for example, in the guise of baseline anti-spyware. The operating system also shuffles the locations at which libraries and programs load into memory, so malware that attempts to find and change the system's most important processes will have to hit moving targets.

and other miscreants use fuzzers to find valuable zero-day exploits. The discoverers can use the exploit to attack on their own or, as in the case of the WMF exploit, can sell it on the black market.

When a software maker can patch a security flaw before any attacks occur, both company IT staff and home users have time to update their software and stay ahead of the curve. But as soon as a zero-day attack commences, the clock is ticking—and sometimes it ticks for a while before the needed patch arrives.

During the first half of 2006, according to Symantec's September 2006 Internet Threat Security Report, Microsoft tied Red Hat Linux for the fastest patch development time for commercial operating systems: an average time of 13 days.

BROWSER PATCH DELAYS

BUT IN UPDATING browsers—especially when a zero-day attack was in progress—Microsoft trailed Apple, Mozilla, and Opera in providing fixes. On average, IE patches appeared ten days after the flaw was reported, while Opera, Mozilla, and Safari browsers were patched, on average, in two, three, and five days, respectively. (For a timeline that tracks the zero-day VML attack and patch cycle, see "A Zero-Day Attack Marches On" on page 120.)

Adam Shostack, a program manager for Microsoft's security development lifecycle team, says that sometimes a longer time frame is only to be expected, given the complexity of Microsoft's user base.

"We have to test security updates to make sure they will work with 28 different languages and every OS that supports the application," Shostack says. "We really work to balance quality with speed."

Security software helps protect against unknown threats during the dangerous interval that separates an initial attack from the release of an effective patch, but traditional antivirus programs rely on having an identified signature for an attack in order to guard against it. This pits malware writers against security companies in a constant cat-and-mouse game, with malicious hackers sending out a

IMAGE ATTACK

MYSPACE INVADED

DECEMBER 28, 2005: In this precursor to the similar VML attack, a flaw in Microsoft's little-used WMF image type permits drive-by downloads to occur if a user views a page containing a poisoned image. Microsoft releases an early patch on January 5, but in July a malicious banner ad infects millions of as-yet-unpatched PCs visiting MySpace, Webshots, and other sites.

steady stream of designer Trojan horses and the like that they have tweaked just enough to defeat signature recognition.

Heuristics and behavior-based analysis can move beyond this evolutionary pattern to give security programs an edge. Such scans use algorithms, rather than signatures, to look for abnormal behavior or files. Heuristic analysis checks the contents of potential malware for things such as a suspect method of working with memory. Behavioral analysis, meanwhile, watches programs for conduct typical of malware (such as starting an e-mail relay server), trying to identify unwanted interlopers by what they do rather than by what they contain.

Today most major antivirus products incorporate one or both types of analysis. Last year, *PC World* tests that used one-month-old signatures yielded success rates of between 20 and 50 percent.

Heuristics and behavior analysis are susceptible to false positives, though. A security program may not be able to distinguish between a keylogger and a game that asks for direct access to the keyboard to shorten response time. As a result, the security software may needlessly bother a user with pop-up alerts and questions.

BlackHat's Jeff Moss estimates that this kind of detection won't be genuinely useful on its own for another five years. "The false positive and false negative

rates are too high. Everyone is coming up with novel ways of detecting misuse; but as soon they try to deploy it, users revolt."

OTHER APPROACHES

MEMBERS OF ANOTHER class of security products try to resist new threats by changing the user's computing environment to limit damage from a successful invasion. Some (like GreenBorder Pro) create a "sandbox," or virtually walled-off environment, for frequently targeted programs such as Web browsers and e-mail clients. An attack might break through IE, for instance, but any attempt to install spyware or make other malicious changes would not escape the sandbox.

Other programs, in lieu of creating a virtual environment, modify users' rights so as to remove an application's ability to make deep system changes. This category of utility includes the free DropMyRights applet from Microsoft.

Still other types of programs, such as the free VMWare Player, install a distinct, encapsulated operating system that includes its own browser. The cordoned-off browser is completely detached from your regular computing environment. For more information on all these types of damage-mitigation security programs, see Erik Larkin's "Disarm Net Threats" (find.pcworld.com/56458).

Windows Vista introduces several security updates that work along some of the same lines. But no one thinks software vulnerabilities or zero-day exploits are going to disappear. Unfortunately, the established black market for stolen data and unwitting spam-senders all but guarantees that criminals will continue to find ways to profit from malware misery.

Nevertheless, David Perry, global director of education for Trend Micro, remains cautiously optimistic about the future state of Internet safety. "I believe eventually we will get the Web to the point where threats are just a nuisance," he says. "But that isn't coming this year." ■

Ryan Singel covers computer security as a San Francisco-based freelance author.

HERE'S HOW

CELL PHONE TIPS

CYRUS FARIVAR

Browser-Free Googling, Plus Five Other Cell Tricks

RIGHT BEFORE YOUR very eyes, your cell phone has morphed into a portable computer. Whether you're searching Google via text message, using SMS to make international calls, or e-mailing a voice message, these tips will help awaken your cell phone's inner PC.

TEXT YOUR GOOGLE SEARCH

FOR THE PRICE of sending a text message, you can unleash the power of the Google search engine without having to open a Web browser. You simply text **Googl** (46645) to get access to much of the search giant's most useful information, including the addresses and telephone numbers of businesses, word definitions, numeric and other conversions, weather forecasts, and even sports scores.

For example, if you want to look up the phone number of a local pizza joint to place a take-out order, text-message **Googl** the name of the business and its city and state, for instance **Zachary's Oakland, CA**.

A minute or so later, Google will send you a text message that will look something like 'Local Listings: Zachary's Chicago Pizza 5801 College Ave Oakland, 94618 510-655-6385' (see **FIGURE 1**). To save time, enter the zip code instead of the city and state. To look for more general information, text something like **pizza 94618** to receive the names, addresses, and phone numbers of all the pizzerias in that area. (This is especially handy when you're in a city or neighborhood you're unfamiliar with and you're jonesing for a double espresso.)

Google's ability to send you word definitions via text message helps you compose just the right message to send with a bouquet of flowers you're ordering, and it also can assist in adjudicating tense games of Scrabble. To use it, text **Googl** with the command **define:** followed by the word (with no space between), such as **define:qindarka**. How else will you ever find out that there are precisely 100 qindarkas in a single Albanian lek (which, oddly enough, is also the name of that country's national vegetable)?

You can text Google for all sorts of conversions, too. If you want to convert pounds to kilograms, for example, or liters to quarts, or even see the number of miles in a light-year, text **Googl** and enter something like **2 liters in quarts**. You'll receive a text back with the answer faster than you can say '2.1133764188651876'. To convert foreign currency at the going exchange rate, text **$100 in euros** (the three-letter abbreviations for currencies also work, such as **100 usd in eur**).

Google has many other options for fast lookups from your phone. To find out the forecast for a specific region, text **weather** and the city name, such as **weather Peoria**,

IL. And during last summer's pennant races, I almost wore out my phone's dial pad using Google to check scores. To find out how your team is doing, simply text its name, such as **Dodgers**, and you'll see what's going on in Chavez Ravine.

Depending on your cell-phone service plan, sending a lot of text messages to Google may launch your monthly bill into the stratosphere. Check to see if your service provider offers any special deals for high-volume texting.

If you use Google Calendar to keep track of your day-to-day appointments, you can send yourself SMS reminders of the events you have listed. First, sign up for a calendar at www.google.com/ig. Once you have signed up and logged in, you can add your upcoming activities to your online calendar.

To set alerts for the events, click *Settings* at the top right of the page, choose *Notifications*, scroll to the bottom of the page, and enter your country, phone number, and cell phone provider (see **FIGURE 2**). Google will then text you a verification code to enter on this page. After you enter the code, check the boxes for event reminders at the top of the page. Once you have entered events into your Google Calendar, you will receive a text reminder for each of your upcoming events. Alternatively, you can ask Google to send a daily agenda, which includes all of that day's events.

FIGURE 1: SKIP THE BROWSER and search Google using only your cell phone to retrieve the information you need via text message.

MAKE CALLS VIA SMS

ANYONE WHO MAKES a lot of phone calls from outside the United States can use SMS (Short Message Service) to take advantage of cheaper rates. Two of my favorite SMS services are Call2.com and UK ISP Telecomplete's MyWebCalls.com. Both permit you to send an SMS message to their servers, which then either place the call (if you have previously registered the number you're calling), or call you back with a dial tone allowing you to enter the number manually.

Call2.com uses standard phone lines, while MyWebCalls.com is VoIP-based, which is cheaper but may be less reliable. Calling France on MyWebCalls.com is 1.4 cents per minute, while on Call2.com it's nearly 6 cents per minute.

After you register for either service, you text the number that the service assigns you (you may also need to enter a password). You could use the service to place domestic calls as well as international ones, but the real savings come when you place calls from outside this country. Browse to find.pcworld.com/56174 to read our review of three other VoIP-based services for cell phones.

TAKE NOTES WITH YOUR CAMERA PHONE

THE NEXT TIME you're heading to a meeting, leave your notepad (or your laptop) behind and have your camera phone record the minutes. The Qipit service (www.qipit.com) lets you convert the text in an image captured by a cell phone camera (or any other digital camera) into a PDF file (it will also be available as a JPEG). After you register for the service by giving your name, country, and e-mail address, you enter your cell number, service provider, and phone model.

The service indicates the quality of text ▶

FIGURE 2: SET YOUR GOOGLE Calendar to send you a text message to alert you about upcoming events, or to text you a complete agenda at the start of each day.

scans you can expect; for example, my Motorola Razr V3c rated only one out of three stars. After you take the photo, you e-mail it to the service (copy@qipit.com for black-and-white images, and color@qipit.com for color), and it is added to your list of files. As of this writing, the service is free, but it's limited to 25 documents per account, and it supports only JPEGs with a minimum resolution of 1.3 megapixels. You pay only the cost of an MMS (multimedia) message. (Note that you can also send the service images to be scanned and converted via e-mail.)

CALL 411 FOR FREE

FOR BETTER OR worse, most people have more occasion to look up information than to take notes with a phone. A more traditional way to find information about a business than texting Google (see the first tip) is to use your telephone company's directory-assistance service, aka 411. However, most cell phone service providers charge $1 or more for each 411 call you make. Fortunately, you have a free alternative: 1-800-FREE-411.

Just as the name implies, a quick call to the number puts you through to an automated voice-recognition program (similar to the old-fashioned 411) that asks for the city, state, and name of your listing. The catch is that before the service gives you the number, you have to listen to a

FIGURE 3: FIND OUT WHERE YOUR FRIENDS ARE—and let them know where you can be found—by having the free Dodgeball service send you a text message listing their location.

short advertisement. I tested the service by asking for "Mughlai," an Indian restaurant in New York City. While the service didn't at first understand "Mughlai" (pronounced MOOG-lie), it understood my second attempt, "Mughlai Restaurant," without any difficulty.

CONNECT WITH YOUR FRIENDS

YOU CAN EXTEND your social network to your cell phone via Dodgeball (www.dodgeball.com), a free online service—with 15,000 members and growing—that allows you to broadcast your location to

friends by sending a text message to the service. Instead of calling or texting each of your friends individually to say that you're at the local pub cheering for your March Madness picks or commiserating over your alma mater's early exit, you can send a single message and let Dodgeball do the heavy lifting.

After you sign up for the service using your Google log-in, you set up a profile that asks for your home city and gender (you can choose not to specify the latter), as well as your cell phone number and service provider, plus the number or e-mail address you want your messages sent to (you can also choose to receive photos, though this option is turned off by default; see **FIGURE 3**). Once your friends have signed up, you add them as "friends" in your profile. The next time you're out and about, you send Dodgeball a text with the message '@Joe's Bar and Spa' to let your buddies know that you're grabbing a quick beer and a slow rubdown. The message they receive will include the address of the location where you checked in. Plus, your friends' pals will automatically be notified if they're within ten blocks of your vicinity. ■

Cyrus Farivar is a freelance technology journalist based in Oakland, California. He writes for The Economist, National Public Radio, *and* Engadget.

SEND VOICE-MAIL MESSAGES VIA E-MAIL

NOW YOU CAN send voice messages to anyone without ever having to dial their number. The free Pinger service (www.pinger.com) lets you record audio messages that the service then delivers as e-mail attachments.

After you sign up for the service, you set up your address book on the site (you can import your existing contacts from Gmail, Outlook, and most other large e-mail services). Pinger provides you with your own local voice-mail number that you can use to send and receive messages. Call your number, speak the name of the person you wish to leave a message for, say your piece, and you're done. The recipient is able to listen to

the message without having to sit through long and unnecessary option instructions or canned greetings.

Further, you can send the same message (such as a party invitation) to a group of people at one time. Each person on the other end will get a text message alerting them to a new voice-mail message they can retrieve by calling the number it lists. Recipients can reply to the voice message simply by pressing 1, or they can forward the message to someone else. Another neat feature: All of the voice messages you send and receive are archived at Pinger.com and are accessible from any computer—useful for leaving voice notes to yourself.

INTERNET TIPS

SCOTT SPANBAUER

Mine the Net for the Latest Research and Knowledge

MANY'S THE COLLEGE professor or high school teacher who, reaching the end of a seemingly well-researched paper, must stifle a scream upon reading the sole listed source: Wikipedia. It's not just that the community-generated encyclopedia (www.wikipedia.org) lacks authority as an information source. Though Wikipedia, Encyclopaedia Britannica (www.britannica.com), and other general-purpose reference works supply good overview information, serious research rarely relies on this kind of secondary source.

The hunt for knowledge requires up-to-date research, breadth, thoroughness, and depth beyond what the summary articles in an online (or print) encyclopedia can provide. Usually you have to visit your local library to find the best primary source material—but you may also be able to access those sources from your PC at the office, at home, or on the road.

JOURNALS ONLINE

FOR ANY ARTICLE in the newspaper about the latest discovery in atmospheric research, computing, economics, phys-

ics, psychology, or the like, the reporter is probably relying on newly published research in one of thousands of peer-reviewed scientific journals. *Peer review* means that the articles are assessed for accuracy and methodological soundness by committees of other scholars who work in the same field. Google Scholar (scholar.google.com) is a good place to start a quest; entering a search phrase there yields links to thousands of articles, books, and Web sites (see **FIGURE 1**).

In addition, you can browse and search the sites of journal publishers by subject or by journal title. Elsevier's ScienceDirect (sciencedirect.com), for example, offers articles from more than 2000 journals, and search and personalization tools are available if you register as a guest user. Blackwell Publishing's Blackwell Synergy (blackwell-synergy.com) is a site that offers over 850 journals, and Springer Science and Business Media (springer.com) has more than 1500. Unfortunately, these publishers provide the full text of most of their journals only to subscribers, locking out researchers who are easily daunted.

You may not need to crack open your wallet, however. Many of the subscribers to these services are corporations, hospitals, and libraries, so you may have access to the knowledge trove at your office, or through your local library, where you can print articles or download them as PDF files (bring a USB thumb drive). If a sub-

scribing institution allows you to connect to its resources via a virtual private network, you can access research from just about anywhere. My local public library even allows me to access its massive Infotrac and EBSCOhost databases (each of which offers the full text of thousands of journals and reference works) over the Internet when I use my library card.

TECH INFO SAFARI

TECH BOOK PUBLISHER O'Reilly and Associates offers the full text of more than 5000 titles (its own, and those of two dozen other publishers) through its Safari Books Online service (safari.oreilly.com). Many of Safari's books relate to business and desktop software, but the service focuses on information technology for high-tech professionals. If you regularly need to access the latest prim-

FIGURE 1: GOOGLE SCHOLAR HELPS YOU find the latest research in peer-reviewed journals, books, and Web sites.

ers or references for Unix, programming and scripting languages, or system administration, a Safari subscription could be worth the monthly fee, which starts at $15 and allows you to read up to 120 books per year. If that's too expensive, you'll find thousands of free electronic books at the Open Source Books section of the Internet Archive's Text Archive (find.pcworld.com/56252). ∎

ANSWER LINE

LINCOLN SPECTOR

How Do I Get Malware Off My PC Once and for All?

? MY PC CAUGHT a spyware infection that replicates itself even after I've deleted it from the Windows Registry. I've tried all the spyware-removal tools I could find, but I am still unable to get rid of it.

Myron Oglesby, Rockaway, New Jersey

IF SCANNING WITH multiple antispyware programs doesn't remove it, try using Windows' System Restore feature (note that Windows 2000 lacks System Restore). Click *Start•Programs* (or *All Programs*)•*Accessories•System Tools•System Restore.* Choose *Restore my computer to an earlier time,* click *Next,* pick the earliest Restore Point available on the displayed calendar, and follow the prompts.

Should System Restore fail to solve the problem, your next steps are to reboot your PC and press **<F8>** before your monitor switches resolution as Windows loads. At the resulting menu, select *Safe Mode with a Command Prompt,* and then pick your operating system. At the command prompt, type **C:\windows\system32\ restore\rstrui.exe**, press **<Enter>**, and try running System Restore from there.

If your PC is still infected after this, I must make like Dear Abby and recommend that you seek the assistance of a professional. Contact the support desks of your various security software vendors, one of which may have the solution.

For the community approach to support, download the free HijackThis from find.pcworld.com/56218 and run it to create a very technical report on your system's suspicious Windows behavior (see **FIGURE 1**). Post this report on one of the many Web forums frequented by people who may be able to make heads or

FIGURE 1: YOU GET A THOROUGH report on possible malware from HijackThis, but you may need an expert to make sense of it.

tails of it. Both TechSoup (find.pcworld. com/56219) and Spyware Warrior (www. spywarewarrior.com) have excellent forums with helpful participants.

If all else fails, back up your data folders and get ready to reformat the PC's hard drive and restore your system from a full backup. If you don't have an image backup of your drive, you'll have to reinstall Windows, install and update your malware protection, and restore your data

from the backup. See "Move All of Your Valuable Data to a New Partition" (find. pcworld.com/56220) for a list of the folders that likely contain your data. Instead of moving the folders (as that tip suggests), copy them to CDs, DVDs, or an external hard drive.

Of course, reformatting and restoring your drive is easiest if you've been using a backup program with good disaster-recovery features. Image backup programs such as Acronis's $50 True Image (find.pcworld.com/56223) and Symantec's $70 Norton Save & Restore (which replaces the company's venerable Ghost utility; find.pcworld.com/56224) are particularly adept at drive restoration, allowing you to restore the entire drive from a preinfection backup.

If you don't have a good system backup, reinstall Windows using the restore disc or Windows CD that came with your system, selecting an option that will destroy everything on your hard drive (a good idea in this particular case). You'll also have to reset your Internet connection, and reinstall, as well, all your hardware drivers and applications. To view our video tip on reinstalling Windows XP, browse to find.pcworld.com/56221.

Finally, once you have Windows and your programs back in place, you'll need to update all of your security utilities, and then scan the backup of your data folders with your antivirus program before moving the files back to your hard drive. ∎

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.

BRING UP A QUICK REPORT ON ALL YOUR DRIVERS

IT'S 10 P.M.: Do you know what drivers are running on your PC, and what starts them running? Windows' Device Manager provides full details on a particular driver, but this isn't helpful if you want an overview of all of them. In Windows XP Pro and Vista, it's easy to view info on all of your drivers, running and not:

Select *Start•Programs* (or *All Programs*)• *Accessories•Command Prompt.* At the prompt, type **driverquery /v /fo csv > dr.csv** and press **<Enter>**. When the prompt returns, type **dr.csv** and again press **<Enter>**. The report will open in Microsoft Excel (or the program you've set as your default spreadsheet).

OFFICE TIPS

ROBERT LUHN AND GUY HART-DAVIS

Get Ready to Work With Office 2007's New Formats

EVEN IF YOU don't plan to switch from your current Office apps, you'll have to deal with Microsoft's 2007 Office System because the people using it may be sending you files in the upgrade's new XML file formats. And if your company is rolling out Office 2007, you'll have to migrate your beloved settings and files from Office 2003, which can be easy, difficult, or impossible (some of your favorites may have been eliminated).

PREP YOUR 2003 APPS

REGULARS AT MICROSOFT'S update site (update.microsoft.com) have probably already downloaded and installed the company's Office Compatibility Pack for Word, Excel, and PowerPoint 2007 File Formats. The pack lets people who are using older Office versions open, work on, and save files in the 2007 Office System's native XML formats: .docx for Word, .xlsx for Excel, and .pptx for PowerPoint. Browse to find.pcworld.com/56206 to download and install the compatibility pack manually.

MAKE THE SWITCH TO 2007

BEFORE YOU UPGRADE, back up your data, including your custom templates, forms, and macros. Then insert your Office 2007 disc; and at the 'Installation You Want' screen, choose Upgrade earlier versions. Select Remove all previous versions if you want to delete your 2003 apps while retaining some of your settings, such as Word's custom dictionaries, Excel's custom lists, and Outlook's .pst file.

If you click Keep all previous versions, you'll do just that, Outlook excepted; you

can have only one version of that program on your system. To keep Outlook 2003, click the Installation Options tab and set Microsoft Office Outlook to Not Available. To install Outlook 2007 in
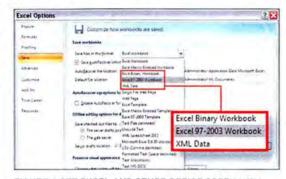
FIGURE 1: SET EXCEL AND OTHER OFFICE 2007 applications to save files in the older Office formats by default.

place of Outlook 2003, select Remove only the following applications and then check just the Microsoft Office Outlook box.

FOOLPROOF FILE SHARING

THE 2007 VERSIONS of Word, Excel, and PowerPoint can read just about any data file from their ancestors in Offices

97 through 2003, and they can save old files in one of Office's new XML formats. To do so, open the old file, click the Office button, choose Convert, and click OK. A new file will replace the old one. To create an XML version while retaining the older one, click Save As and choose the appropriate XML file type. You may need to close the document (or the Office 2007 app) to finish. Note that some elements (such as charts or embedded pictures) may change size or move around a bit in the converted version of the document.

Saving Office 2007 files in Office 97 through 2003 formats is a breeze. In Word 2007, for example, click the Office button and choose Save As•Word 97-2003 Document. All Office 2007–specific features will be disabled or hidden in these files. For details, click the Office button and select Prepare•Run Compatibility Checker.

If coworkers and clients insist on sticking with Office 2003 or an older version, you can avoid file-sharing hassles by setting Word, Excel, and/or PowerPoint 2007 to use the older formats by default. For example, to do so in Excel 2007, click the Office button, choose Excel Options, select Save on the left, and under 'Save files in this format' choose Excel 97-2003 Workbook (*.xls) (see FIGURE 1). ■

Robert Luhn is a former senior editor for PC World. Guy Hart-Davis is the author of numerous books, including Word Annoyances (O'Reilly) and Microsoft Office 2003: The Complete Reference (Osborne).

RASSLIN' WITH OFFICE 2007'S NEW RIBBON INTERFACE

THE NEW RIBBON interface is great, but it still could use a few tweaks.

Add your favorites to the Quick Access Toolbar: Click the drop-down button to its right; choose More Commands, select Customize on the left; and then, under 'Choose commands from', click Popular Commands. To add an item, select it and click Add. When you finish, click OK. For more options, select either Commands Not in the Ribbon or All Commands in

the 'Choose commands from' list. If your toolbar gets too big, check Show Quick Access Toolbar below the Ribbon at the bottom of the dialog box.

Find more commands: To summon the ribbon's powerful Developer tab (which is hidden by default), click the Office button and choose [Program name] Options at the bottom. Select the Popular category on the left, check Show Developer tab in the Ribbon, and click OK.

Six Savvy Ways to Get More Prints for Less Money

PRINTERS ARE CHEAP to buy, but expensive to use. Printer vendors may think that their ink cartridges and special paper are worth their weight in gold, but that doesn't mean you can't print on the cheap. You just have to know a few simple tricks.

Preview to print less: When printing pages from a Web site, use your browser's Print Preview function to ensure that you're getting just the information you need. Even if the site has a printer-friendly option, Print Preview lets you make sure the right margin won't be cut off (some Web pages are too wide for many printers): If necessary, adjust your layout orientation from Portrait to Landscape to cover the lost territory.

In Firefox, Internet Explorer, or Opera, open the Web page you want to print and click *File•Print Preview*. A new screen will pop up with the content shown in printer format; it will likely fill more than a single printed page. Note the page or pages you want to print, and click the *Print* button at the top of the Preview screen (or press **<Ctrl>-P**). In the resulting Print dialog box, enter the start and end pages in the Print Range boxes (the Pages button will be selected automatically when you enter the page numbers; see **FIGURE 1**).

Some printer makers, such as Canon, bundle free utilities with their printers—or make programs available for download—that let you print Web pages faster. Check your vendor's Web site for such a program; Canon's Easy-WebPrint utility is available at find.pcworld.com/56313.

To reduce your ink usage further, select the *Properties* button and choose *Draft* mode under Print Quality (the wording and location of these options vary from printer to printer; you may have to click around a bit in your Printer Properties dialog box to find them). If color is not important to you, also check the *Gray-*

FIGURE 1: PRINT ONLY the pages you want by setting the page range in your Print Properties dialog box.

scale Printing button. Finally, click *OK*.

Print just the text: My favorite way to print a small section of text from a Web site is to highlight the text, click *File•Print*, and choose *Selection* under Page Range. Alternatively, you could copy the relevant text (press **<Ctrl>-C**), open WordPad (click *Start•All Programs•Accessories•WordPad*, though any word processor or text editor

will do), and paste the content there (select *Edit•Paste Special•Unformatted Text*). I usually have to do a quick format touch-up before I print, but I save quite a bit of ink and paper this way.

Skip the power strip: Do you switch your printer on and off from a power strip? Bad idea. When you shut a printer off, it parks its heads in a preconfigured place. But powering down via a power strip can bypass the normal shut-down process, preventing the heads from parking properly. This can dry the printhead out or cause it to clog. Always use your printer's own power switch to turn it off.

Prevent cartridge drying: Print cartridges have a nasty habit of drying out from disuse. Print a page (using your black and color cartridges) at least once a week to keep the cartridges fresh. There's no resuscitating a dried-up cartridge.

Know when to go off-brand: No-name printer cartridges are a few dollars cheaper than your printer manufacturer's refills, but the savings may come at the price of lower or inconsistent print quality. If you're printing drafts of text documents, off-brands can be a good choice. For printing photos, however, they generally produce fewer prints than brand-name cartridges do, and they fail to match the manufacturers' inks in print quality and fade resistance.
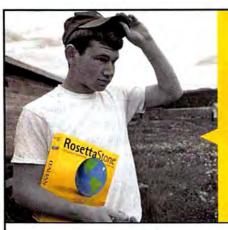
Refill kits may seem like a good way to cut printer costs; but they're messy, their print quality is inconsistent, and the refilled cartridge will hold less ink than a new cartridge from the original manufacturer will, which means fewer prints in the long run. ∎

Visit find.pcworld.com/56314 for more printer tips. Michael S. Lasky is a freelance writer and computer consultant in San Francisco.

SPEND A LITTLE TO SAVE A LOT ON YOUR PRINTING COSTS

IF YOU'RE LIKE me, you are always on the prowl for ways to reduce your ink and paper costs. The best helper I've found lately is FinePrint (find.pcworld.com/56203), a shareware utility that lets you print two, four, or eight pages on a single sheet. The package also has options to let you print colored text in black and skip printing graphics, among other buck-saving tools. The trial version places a watermark on each page; pay $50 (well worth it), and the watermark vanishes.

IF ONLY WARHOL HAD 4OVER...

Andy Warhol expressed himself in new, exciting ways. Now 4over lets you express yourself in great new ways too. We are the first printing company in the nation to have the Komori 10-Color Super Perfector Doublecoater. Express yourself in new exciting ways. Use 4over.

FULL BLEED

AVAILABLE **SILVER** PMS 877

WE'LL MATCH ANYBODY'S ADVERTISED PRICE AND WILL **BEAT** YOUR **QUALITY**

200 LINE SCREEN ON EVERY JOB

'Stochastic (FM) SCREENING

FREE UPGRADE 14pt > 16pt

0612-0012

4OVER, INC.
PERFECTING YOUR PROFITS
4OVER.COM

SUPER TRADE PRINTER

P: 877-782-2737 F: 877-972-9117
5900 San Fernando Road, Glendale, CA 91202

PC WORLD

New Tech Products? They're Evolutionary!

REVOLUTIONARY: YOU JUST knew you'd encounter that word in Apple's iPhone hype. But all you have to do to get past Steve Jobs's smarmy, congenital puffery on the occasion of the phone's unveiling at San Francisco's Macworld Expo back in January is to discard the initial *r*.

Evolutionary: That's the real word for the iPhone—as well as for pretty much all of the innovations announced the same week at the annual Consumer Electronics Show in Las Vegas. I haven't laid my hands on an iPhone yet. But Palm and Windows smart phones have long let you surf the Web, read e-mail, and play music and video. Better still, they often come with a real keyboard, not a toy on-screen version accompanied by boasts about its "predictive" software—a sure sign that the keyboard sucks. Talk about evolution: With Jobs, miserable keyboard decisions date back to the Apple II.

And plenty of current cell phones can take advantage of 3G networks that operate at higher speeds than Cingular's lethargic EDGE, which is the fastest network the iPhone supports. Unless I've missed something, there's only one big thing you will be able to do with an iPhone that you just can't do with the others: lock yourself into buying audio and video files from Apple's proprietary iTunes world. And apparently you'll have to do that from your computer, not conveniently on the phone itself.

When it comes to digital products, what's truly revolutionary is the rapid pace of evolution. Like the iPhone, the products introduced at this year's CES were about incremental strides, not leaps. With companies putting their product lines through multiple updates a year, the advances never stop. But many technologies have reached a point where improving on the basics is pretty tough.

PCs always get faster and cheaper, but "new" features are often just reworked

Some primal urge makes the industry hype even baby steps as breakthroughs.

versions of failed old ideas: Witness the touch screen on HP's new TouchSmart PC, which harks back to 1983's DOS-based HP 150. Inkjet printers, initially plagued by grainy or blurry output, are now so good that vendors compete on dubious features like LCD screens rather than basic output quality. Digital camer-

as, once no match for even throwaway film models, are now more than adequate for anyone but a pro, so sellers develop less-compelling technologies like face recognition to differentiate themselves.

Flat-panel TVs? Now that the best ones pack as many pixels as the best signal sources, manufacturers try to sell improvements most people probably won't ever notice except in side-by-side comparisons. High-def DVDs? They're as good as they're likely to get for awhile; about all that's left is a consolidation between the two competing standards.

If I had to bet on an up-and-coming technology from this year's CES, Ultra-Wideband connectivity would be my pick. Products are only beginning to arrive, but the specs suggest they'll be plenty fast and unlikely to cause interference with the equipment you already have. The most interesting UWB products I saw were Philips's system for cable-free HDTV hookups and Toshiba's wireless docking station for its new Portégé R400 laptop; wireless USB, which uses UWB to handle the wireless part, was everywhere.

But if you hear someone call UWB-based stuff "revolutionary," please remember that the new products are only replacements for wires, albeit faster wires than the ones used in the past. When somebody comes up with a system that wirelessly replaces the AC power cord, then we'll talk revolution. ∎

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.*

ILLUSTRATION: JOHN CUNEO

It Doesn't Take An Acrobat...

...To Get _Better PDF for Business_™. Today, information is key to the operation of any organization and the PDF has become the de facto standard for sharing and distributing information. PDF Converter Professional 4 is the first PDF software application created from the ground up for the business user. It delivers all the features that business professionals need in one easy to use application without all of the extraneous graphic design features.

PDF Converter Professional 4 creates 100% industry-standard PDF files at the speed of light. Combine different documents like Word, PowerPoint, PDF and Excel into one easy to navigate PDF document so you can improve your business communications by email.

Unlock information trapped in PDF files! PDF Converter Professional 4 instantly and precisely converts PDF files into Microsoft® Word or Corel® WordPerfect® documents, forms and spreadsheets.

What's more, you can even edit directly within your PDF files. You can add copy, delete, rearrange, even remove or change the position of charts or graphics. You won't find this rich combination of business-oriented functionality in any other PDF software product at a better price.

So stop bending over backwards and spending too much money.

To learn more visit www.nuance.com/BusinessPDF

Business PDF Features	PDF Converter Professional 4	Adobe® Acrobat® Standard 8
Suggested Retail Price	$99	$299
Create 100% industry-standard PDF files from any application	✔	✔
Save PDF files to fully formatted Microsoft® Word documents retaining images, layout and column flow	✔	
Save PDF files to fully formatted Microsoft® Excel or Corel® WordPerfect® documents	✔	
Make any PDF form fillable with one click	✔	✔
Secure and control documents with digital signatures and encryption	✔	✔
Convert image-only PDF files into fully editable documents	✔	

NUANCE
ScanSoft Imaging Solutions

Available at your favorite reseller: amazon.com CDW COMP USA DELL www.dell.com Insight Office DEPOT shi softchoice STAPLES

intel Leap ahead™

BRING ON THE MULTI-MEDIA, MULTI-YOU.

intel Core™2 Duo inside™

INTRODUCING INTEL® CORE™2 DUO. Intel's new Core™2 Duo desktop processor multiplies every type of multimedia entertainment you enjoy. Now you can experience performance up to 40% faster and over 40% more energy efficient – it's about being entertained on a whole other level. Learn why at **intel.com/core2duo**