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PCWORLD



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YET FOR TV, DVD, MUSIC



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SimpleTech

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CDW 554573

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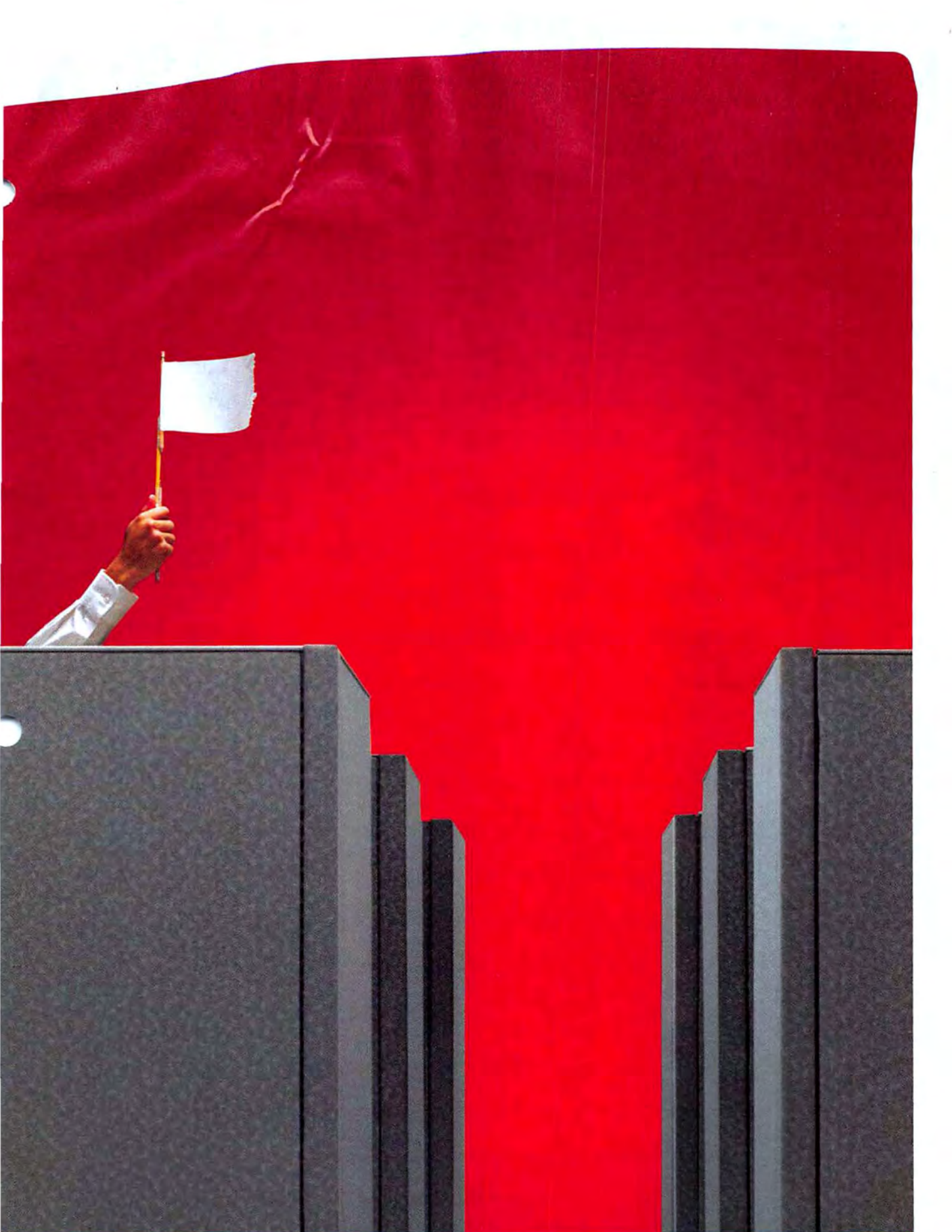
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– Joel Santo Domingo, PC Magazine

"The new G5 iMac is the finest personal computer I've ever used, hands down. Nothing comes close. If you have ever thought of switching from a Windows-based PC to a Mac, this is the deal-clincher. It is simply a stunning machine both to look at and to use."

– Mike Wendland, Detroit Free Press

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iPower CEO & President



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CUSTOMER TESTIMONIALS

I was pleasantly surprised that tech support got back to me quickly and their answers were courteous, accurate, and succinct. Great!
- Alan

I am very impressed with how fast you got back to me, I feel great knowing that I can e-mail you with a problem and know that I will receive a response within minutes.
- Susan

I can say without reservation that I have never received better support. Everything you did was timely and error-free.
- Bob

I just wanted to tell you how pleased I am with the software, training, and speed. It was much easier than I thought, and I could not be happier! Thanks!
- David

I'm really impressed with the fast service you guys provide and the polite way you deal with what must seem very basic questions to you. Brilliant service! Thanks!
- Sarah

I now have a few sites with you guys and believe me, I know the quality of your service, and it is a pleasure dealing with you. Your company is tops. Thanx again.
- Dusty

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TROUBLESHOOTING TIPS

66 Five-Minute Fixes

Computing hassles sometimes seem as numerous as snowflakes—but at least each one isn't different. In fact, many common glitches are easy to correct if you know what to watch out for and how to proceed. We present a cornucopia of quick, lasting fixes for problems involving Windows, printers, networks, Office files, input devices, Outlook Express, browsers, monitors, PDAs, and more.

Cover photography by Kevin Candland



PC WORLD

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FEATURES

ENTERTAINMENT PCs

76 Entertainment PCs Take Center Stage

The age of the multimedia PC has arrived. Loaded with Windows Media Center Edition 2005, these machines enable you to listen to radio, watch and record TV, play CDs and DVDs—and even get some work done, using a wireless mouse and keyboard. We rounded up nine entertainment PCs for in-depth testing and identified two Best Buys.

RELIABILITY AND SERVICE

99 Readers Rate the Manufacturers

In this installment of our yearly survey, over 42,000 *PC World* subscribers told us which products and vendors are the most dependable. See what they had to say about the best and worst desktops, notebooks, printers, cameras, wireless gateways, and audio players; and learn which companies will help you out of trouble.



ON THE COVER



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TELL US WHAT YOU THINK

Visit www.pcworld.com/pcwininput and rate this issue—you could win a 6.1-megapixel Kodak EasyShare DX7630 digital camera, which sells for about \$400. You'll need the subscriber number from your mailing label to take this survey online. The site explains the official rules and also tells how to participate in the drawing if you're not a subscriber. You can enter from December 11, 2004, through January 14, 2005.

COMING UP IN FEBRUARY

It's a Phone—No, It's a PC: And it fits in a pocket. These wireless data devices pack serious power.

Network-Attached Storage: How it works, why it beats other methods, and how and what to buy.

Best Ways to Use the Web: Get what you need online faster by using these Google and IE rivals.

TV Tuners for Your PC: We compare products that let you view and record TV while you work.

NEWS & TRENDS

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Is the sweeping anti-junk law working? Our experiment produces less-than-ideal results.
- 24 **The Price of Virus Protection Rises**
Though updating your Symantec or McAfee tool costs more, security-suite fees remain flat.
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Belkin's Pre-N wireless router and card provide impressive performance and extensive range.
- 28 **Google Stumbles With Desktop Search Tool**
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- 30 **Plugged In**
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Guard your PC with a router's hardware firewall.
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Recover files deleted from flash RAM devices.

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– October 5, 2004

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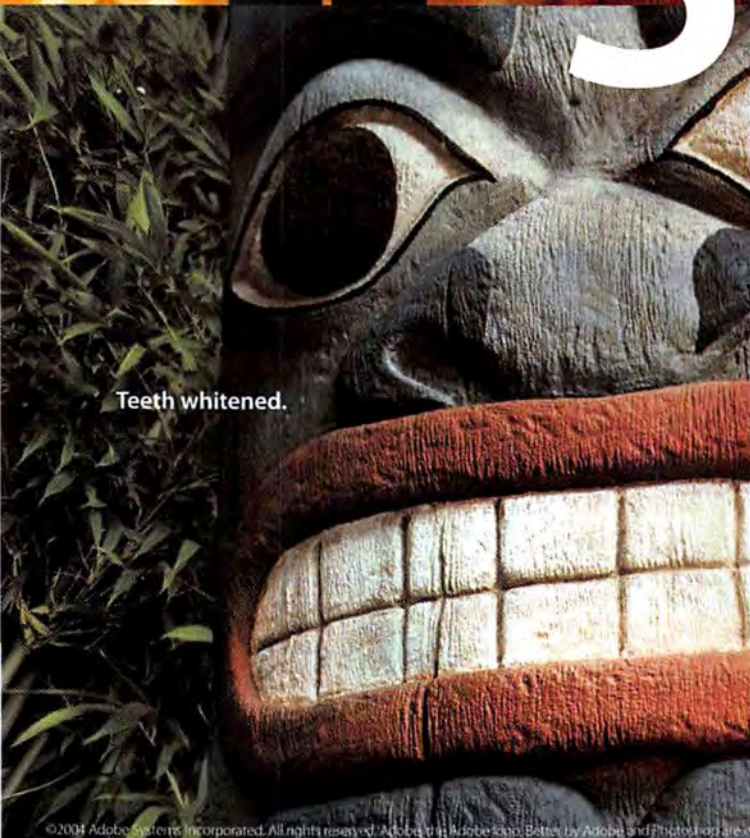


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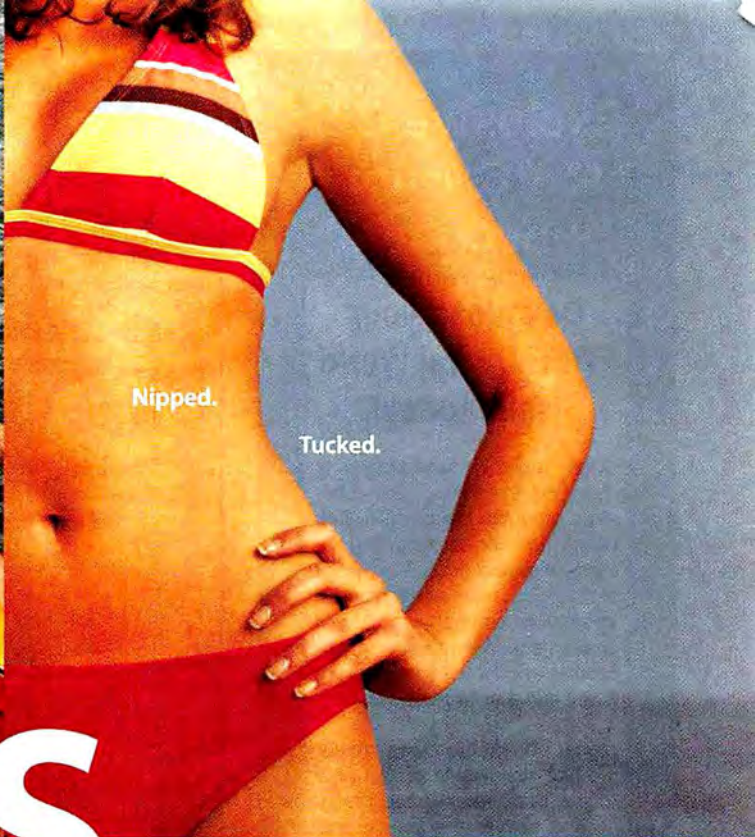
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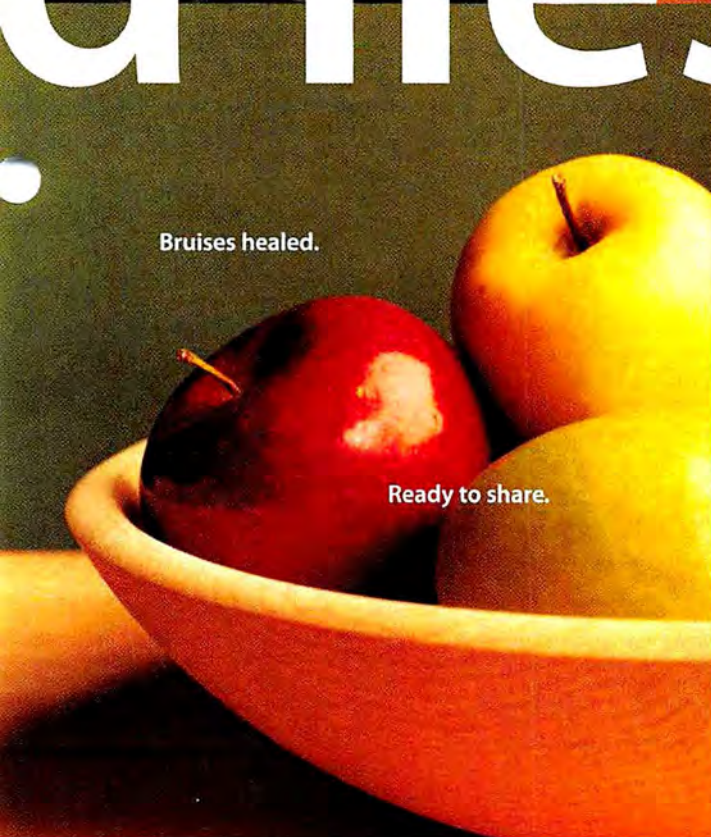
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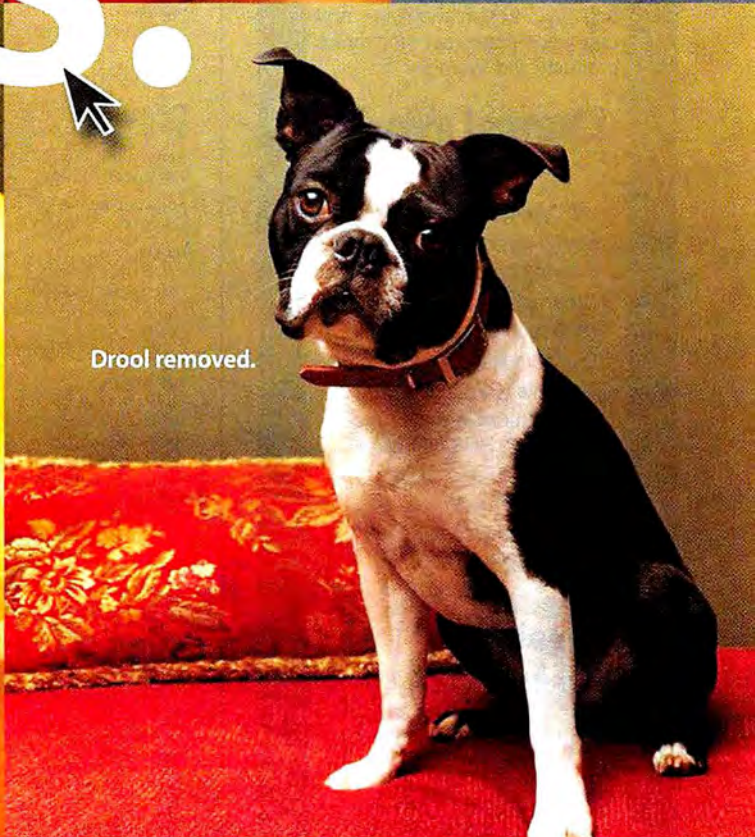
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MAIL:
PC World Editorial
501 Second St. #600
San Francisco, CA
94107

STAFF E-MAIL
ADDRESSES:
To contact any PC
World staff member,
simply format the
address as follows:
firstname_lastname@pcworld.com

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PERFORMANCE ANALYSTS Tony K. Leung,
Chen Xing Wang

SENIOR TEST CENTER COORDINATOR
Julian Weatherby

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Julio C. Giannobile

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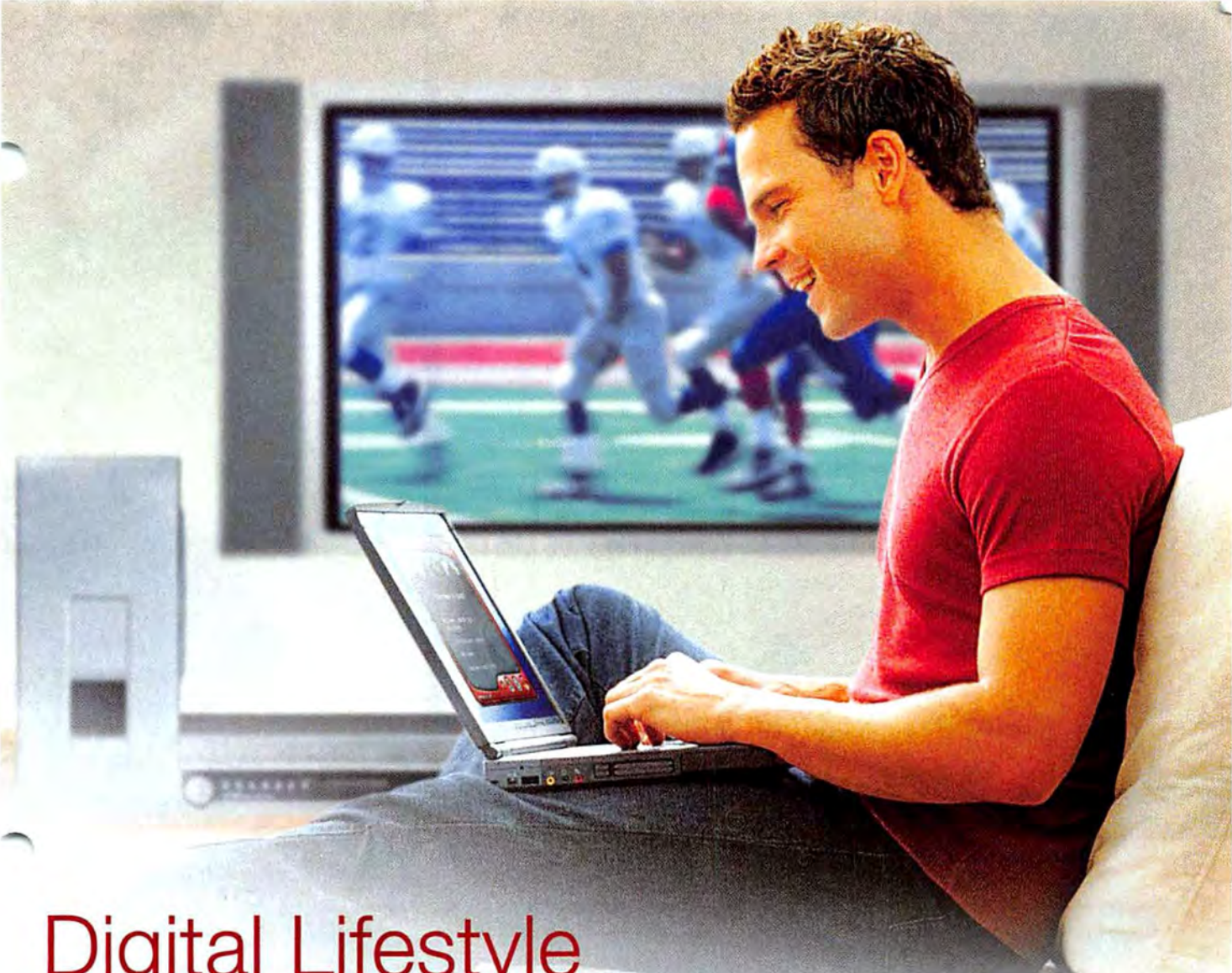
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PRIVACY WATCH:
privacywatch@pcworld.com

WINDOWS TIPS: scott_dunn@pcworld.com

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Rating the Makers Behind the Products

Searching for great support? Join the club—and check out our survey results.

IF YOU KEEP ONLY ONE THING IN MIND as you shop for tech gear, you might repeat this mantra: *I'm not just buying a product, I'm buying a company.* Service and support matter as much as features and specs. But how can you tell which vendors will be there for you when you need them?

You could ask a friend or two about the experiences they've had. Or 42,000 friends—that's how many subscribers took our Reliability and Service survey, the basis of this issue's "Readers Rate the Manufacturers" (page 99). Ranking 47 companies for product dependability and support, it's one of the most valuable stories we'll publish all year.

Much has changed since our first such report. Back then, we surveyed readers via a state-of-the-art fax system—hey, it was 1994—and vetted 44 PC companies, from Ambra to Zeos. (Only ten of those manufacturers still sell systems in the United States.)

Today, we conduct the study over the Web. And though fewer big PC vendors remain out there, it goes way beyond the box: We ask subscribers to rate desktops, notebooks, printers, cameras, audio players, and Wi-Fi gear. "Just like with cars, you don't buy these products based solely on service," says Executive Editor Ed Albro, who has shepherded this annual report since 2000. "But it's a way to decide whether an option should be in or out."

RUNNING THE NUMBERS

THE WORK BEHIND the article kept us busy for months. The study was conducted by Research Results, a survey firm that worked closely with our research manager, Lisa Huck. Ed's editorial team included senior associate editors Grace Aquino and Kalpana Ettenson, plus longtime contributor Laurianne McLaughlin, who



LISA HUCK (left), Kalpana Ettenson, and Lynd Bacon are among PC World's survey team members.

wrote this year's feature. And Tracey Capen, executive editor for reviews, played a consulting role. (Scores from the survey are factored into the recommendations we make on our *Top 100* charts.)

This year, we called on additional expertise in the form of research firm Lynd Bacon & Associates, which helped us redesign the survey from the ground up for accuracy and precision. President Lynd D. Bacon and his staff "use state-of-the-art statistical techniques—as good as they get," says Lisa, herself a Reliability and Service veteran. In other words, they worry about matters like multivariate statistics and psychometrics so you don't have to.

Many of the vendor shortcomings that rankle today's respondents—from flaky components to endless waits on hold—were sources of dissatisfaction back in

1994. But one issue is new: offshoring. As tumbling prices have squeezed profit margins, many manufacturers have responded by moving support operations to India and other countries where tech savvy is plentiful and labor is cheap.

"Offshoring is complex, because there's politics and national pride involved," says Ed. "The bottom line is that it's hard enough to deal with a PC headache, so people want someone who can explain the fix clearly."

But language wasn't the only obstacle that subscribers reported with offshore help. We heard about reps who weren't knowledgeable about products, sounded as if they were reading a script, and weren't empowered to resolve problems in the buyer's favor.

These issues may have less to do with service that's offshore than with service that's outsourced—that is, provided by a third-party company.

For instance, it's tougher for reps to be truly on top of design and performance issues relating to the products they support when they don't even work for the manufacturer. And that's true whether they're in Bangalore or in Boise.

Ultimately, the best support reps are good communicators and good listeners. They know products inside and out, and they have the authority to make decisions. Even before offshoring and outsourcing, it was never simple to identify which manufacturers employ those folks. Our report can help, and that's one big reason why it's been a *PC World* mainstay for so long—and will be for years to come. ■

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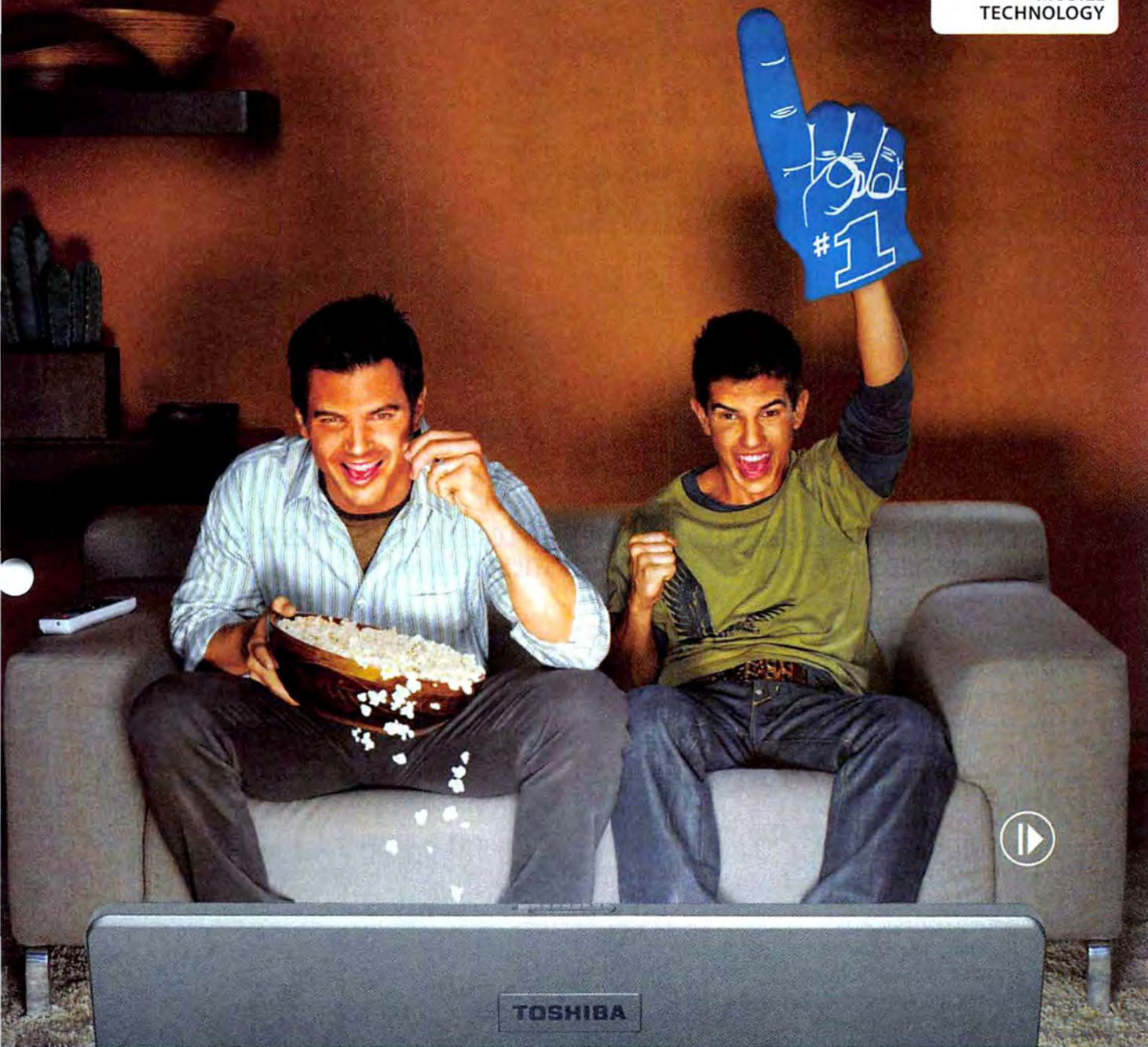


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NEWS & TRENDS

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Spam Law Test

A YEAR AFTER CONGRESS ENACTED THE CAN-SPAM LEGISLATION, OUR TESTS SHOW THAT UNSUBSCRIBING FROM MARKETING E-MAIL CAN STILL BE HARD. BY TOM SPRING

CLEANSING OUR inboxes of spam was supposed to get easier following passage of the nation's sweeping antispy law, the Controlling the Assault of Non-Solicited Pornography and Marketing (CAN-SPAM) Act. The law, which celebrates its first anniversary in January, requires (among other things) that recipients be allowed to opt out of being included in a marketing mailing list, simply by clicking a link on an e-mail notice from the marketer. In addition, the CAN-SPAM Act establishes harsh penalties for senders whose e-mail messages fail to meet its requirements.

TESTING THE LAW

FEW PEOPLE seriously expected CAN-SPAM to discourage the prolific no-name offshore spammers. However, in a test



in which we signed up for and then attempted to opt out of receiving marketing e-mail from 100 heavily trafficked U.S. Web sites, we were surprised to discover that when we tried to unsubscribe, sever-

al of the best-known sites—among them Amazon.com—continued to send us e-mail after the ten-day grace period that the law allows had expired.

Overall, we were unable to stop e-mail from 15 of the sites

(or from their partners) without resorting to calling their media-relations representatives. Our investigation also revealed that the spam law's sometimes vague language makes it difficult for users to

stop getting unwanted e-mail.

The CAN-SPAM Act stipulates that all marketing e-mail messages must include both an easy-to-locate opt-out link and the sender's postal mail address. The law also requires that commercial e-mailers—as well as their marketing partners—honor opt-out requests within ten days of receiving them.

To test how well the business community at large is complying with CAN-SPAM, we visited the Web pages of 100 leading firms in various industries, including retail, travel, media, and financial services. Using a unique e-mail address at each site, we signed up for at least one newsletter offered there. As soon as the e-mail started to flow, we unsubscribed from all the lists.

The results weren't entirely disappointing: 78 of the companies sent messages that adhered to CAN-SPAM requirements, and honored our requests to stop receiving e-mail. Seven other companies sent us messages that lacked a physical postal address, but they did honor our opt-out request.

The addresses we used to sign up with the other 15 companies, however, continued to receive e-mail long after we tried to unsubscribe from the mailing lists. Two of the firms associated with those inboxes failed to include an opt-out mechanism in their e-mail; a third had an opt-out link that didn't work. Eight others continued to send us e-mail more than ten business days after

we exercised their opt-out option; and we received e-mail from marketing partners of another four sites. (For a com-

TEST REPORT

OPT-OUT SCORECARD

THE RESULTS, by the numbers, of our investigation into the effectiveness of the one-year-old CAN-SPAM law.

■ Web sites where we signed up for e-mail and then opted out: **100**

■ Companies that, along with their marketing partners, honored our opt-out requests (the mailbox we used for the account was empty after ten days): **85**

■ Companies (out of the 85) that honored opt-out requests but sent e-mail lacking a postal address: **7**

■ Companies that sent e-mail more than ten days after opt-out: **8**

■ Companies whose marketing partners continued to send e-mail: **4**

■ Companies whose e-mail didn't include an opt-out link: **2**

■ Companies whose included opt-out links didn't work: **1**

plete list of the companies we signed up with, our methodology, and our test results, see find.pcworld.com/45618.)

When we asked companies about our difficulty in opting out, the responses varied. For example, Amazon.com, which continued to send e-mail after our opt-out request, acknowledged the error. A spokesperson blamed a technical aberration, which the company tells us has since been corrected.

Similarly, Internet Broad-

casting Systems, which partners with television stations to publish local news Web sites, said that its failure to include an opt-out link with its Career Tips newsletter (a weekly e-mail) was an oversight. The company has since added such a link to the newsletter, which we received when we signed up for mail from Boston's ABC affiliate, WCVB-TV.

THE FOG OF CAN-SPAM

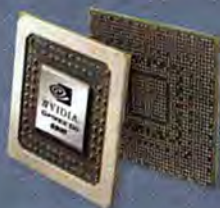
OUR EXPERIENCE with several of the Internet businesses that continued to send us e-mail after we notified them that we wanted to unsubscribe illustrate the sometimes confusing aspects of CAN-SPAM. For example, we had no trouble opting out of the newsletter we had requested at the travel site Sidestep—but then two weeks later we began to receive a second newsletter that we had never signed up for.

Sidestep spokesperson Kristen Evans said the company had erred in sending the second newsletter, owing to a glitch introduced during a site upgrade. Recently, Sidestep made unsubscribing from its mailings easier, with a new Web page you reach when you click the opt-out link in a message.

David Sorkin, a professor at the Center for Information Technology and Privacy Law in Chicago's John Marshall Law School, says that it's unclear whether Sidestep violated CAN-SPAM by sending us the second newsletter af- ▶

IN BRIEF

Product Pipeline



GRAPHICS ON THE GO: A new mobile graphics chip from NVIDIA promises to bring the 3D gaming power of desktop computers to muscle-car laptops. NVIDIA's GeForce Go 6800 mobile graphics chip is available now in beefy 17-inch widescreen systems from Alienware, Falcon Northwest, Voodoo PC, and other vendors of high-end portables range in price from about \$2250 to more than \$4500. A ProStar notebook carrying the GeForce Go 6800 ran our Doom 3 test (on a high-quality setting, at 1024 by 768 resolution) at 32 frames per second—pretty impressive for a portable.

MICROSOFT VERSUS QUICKBOOKS: Microsoft is entering another accounting arena with its Microsoft Office Small Business Accounting software. Slated to ship in the second half of 2005, Office SBA is designed to work with Microsoft Office 2003 and an updated version of Microsoft Outlook 2003 with Business Contact Manager; eventually all three products will be sold in a new Office bundle code-named Magellan. A public beta of Office SBA is available at find.pcworld.com/45552.

ter we unsubscribed from the first one. "There are still many aspects of CAN-SPAM that are very much gray," Sorkin says.

CRYING UNCLE

MEANWHILE, our experience with FreeLotto.com was typical for the sites where signing up for e-mail produced scores of messages from third parties. To be eligible for the daily prize drawings held at FreeLotto.com, we had to agree to receive marketing e-mail from FreeLotto's parent company, PlasmaNet, and other marketing partners. But despite our repeated use of opt-out links in messages from FreeLotto, PlasmaNet, and their partners, we continued to get mail four weeks after unsubscribing.

When we contacted PlasmaNet, a spokesperson told us that we hadn't opted out correctly. To unsubscribe from all PlasmaNet-related e-mail, the spokesperson said, we should visit PlasmaNet's Web site and update our marketing preferences there. We followed these instructions; but at press time some two weeks later, the account we used for PlasmaNet was still receiving about 12 e-mail messages a day, down from a peak of 60 a day.

ADDRESS UNKNOWN

EVERY FIRM THAT didn't include a physical postal address in its e-mail messages said it considered itself exempt from CAN-SPAM because of a provision in the law that has become the subject of debate.

For example, Tribune Interactive marketing services

manager Rebecca Prazak says the company's weekly Metro-mix entertainment newsletter is exempt from the postal-address requirement because it is editorial, not commercial e-mail—even though it does include ads. But Anne Mitchell, president of the Institute for Spam and Internet Public Policy, an Internet public policy advisory group, says that a newsletter with ads that gener-



In October 2004, 80 percent of e-mail traffic was spam—up from 60 percent at the beginning of the year.

ate income could be construed as commercial e-mail and for this reason should include the snail-mail address. (Full disclosure: *PC World's* newsletters, which contain advertising, include both an opt-out link and a postal address.)

Disagreements over what types of e-mail CAN-SPAM governs aren't uncommon, say lawyers at the Federal Trade Commission, one of the agencies responsible for enforcing the law. Many conflicts stem from a provision that exempts "transactional" or "relationship" e-mail—for example, messages that confirm online purchases, recall products, or relay information of interest to members of an organization—

from most of the law's terms.

The CAN-SPAM Act explicitly permits transactional messages to include advertising.

A CONFUSING LAW

"BASED ON THE queries I've received from marketers, some e-mail senders are finding it challenging to understand how the act applies to their messages," says Michael Goodman, an FTC lawyer.

been minimal. According to e-mail security firm MX Logic, in October 2004 only 4 percent of all unsolicited commercial e-mail complied with the law, and 80 percent of all e-mail traffic was spam—up from 60 percent at the beginning of the year.

"CAN-SPAM has been a complete failure when measured against the porn, prescription drug, and Nigerian bank scam e-mails that still make it into our inboxes," says Jim Nail, principal analyst at Forrester Research.

Some observers say that antispam laws in the United States have only driven the worst abusers of commercial e-mail overseas. In fact, Internet security firm Sophos found that the proportion of global e-mail originating in China and Hong Kong rose from 6 percent in February 2004 to 12 percent just six months

later. Korea's share during the same period shot up from 6 percent to 15 percent.

Sorkin says that minor missteps by businesses like Amazon and Sidestep are not the real cause of spam.

"The problem is with the unscrupulous," Sorkin says. "But if Amazon can't comply 100 percent of the time, I suspect other reputable companies are struggling."

As hopes fade that laws can reduce the burgeoning levels of spam, other approaches are moving to center stage. In January 2004, Microsoft chairman Bill Gates predicted that technology would win the battle against spam by 2006. Our fingers are crossed.

The FTC planned to issue, in December 2004, rules defining when the primary purpose of an e-mail message is commercial versus transactional. Goodman says that this should help marketers more clearly understand when and how a newsletter (such as the ones we received that omitted a postal address) must comply with CAN-SPAM.

THE BIGGER PICTURE

WHILE CAN-SPAM has given Internet service providers and state and federal authorities new tools to prosecute illegal spammers—some of whom have already gone to jail or paid substantial fines—its impact on spam overall has

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CONSUMER ALERT

The Cost of Virus Protection Rises

SYMANTEC, MCAFEE HOPE RAISING VIRUS-DEFINITION FEES WILL MOVE USERS TO SUITES.

GASOLINE AND MILK aren't the only things that cost more these days. The cost of keeping your antivirus software current has been rising, also.

But while leading antivirus software vendors Symantec and McAfee have been hiking annual subscription fees for stand-alone products, they've kept those charges flat for product suites that bundle antivirus utilities with firewall, intrusion-detection, and spam-control software. The idea is to encourage customers to move over to these suites.

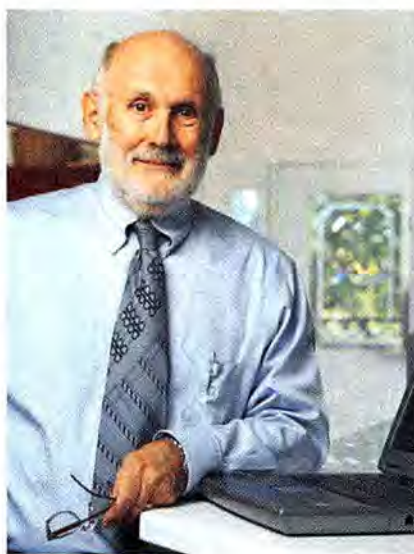
FAST-RISING FEES

LAST FALL, for example, Symantec increased to \$20 the price that Norton AntiVirus and Norton SystemWorks owners must pay for an annual subscription to antivirus-definition and software updates. The \$5, or 33 percent, increase over last year's renewal fee followed similar increases in previous years.

However, the annual cost of updates for the company's Norton Internet Security suite remained at \$30, merely \$10 more than the renewal fee charged for the stand-alone antivirus product. (Norton Internet Security retails for around \$70, compared with \$50 for Norton AntiVirus.)

"We wanted to provide an attractive price differential with Norton Internet Security and to encourage customers to move up," says Laura Garcia-Manrique, product management director for Symantec's consumer group.

McAfee officials say they want to encourage adoption of their \$70 Internet Security Suite, as well. McAfee charges \$20 for yearly subscription renewals to its \$50 stand-alone VirusScan package, and \$30 for Suite renewals.



SIDNEY STAROBIN paid just \$30 to replace Norton AntiVirus 2002 with the 2005 version.

ing to upgrade to new software instead.

Sidney Starobin, a retired pediatrician from Mashpee, Massachusetts, paid only \$30 to upgrade his old copy of Norton AntiVirus 2002 to the current Norton AntiVirus 2005 software—that's just \$10 more than it would have cost him to renew his antivirus definitions for the older software. "They really try to get you to buy a \$70 product [Norton Internet Security 2005]," Starobin says.

SUITE DEALS?

BUT UPGRADING to a security suite may not be the best course for most people. We've discovered that such suites generally offer inferior protection to that provided by best-of-breed stand-alone applications (see find.pcworld.com/45546). And budget-conscious computer users can easily obtain good, no-cost firewalls (find.pcworld.com/45548) and spam-fighting utilities (find.pcworld.com/45550).

Competition may eventually drive down antivirus prices. Microsoft bought antivirus technology from Romanian company GeCad Software SRL in June 2003 and has said it intends to enter the market.

The message for PC users: Shop around—and don't let software vendors pressure you into getting a suite.

—Paul Roberts

DIGITAL CAMERAS

Brighter Previews for Your Pictures

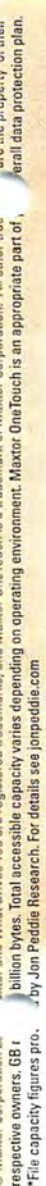
EVEN WITH GREAT SHOTS, the previews shown on some LCDs on the back of cameras can look grainy and washed out. If this drives you nuts, check out Epson's new products with Photo Fine technology: the \$399 L-500V camera and the \$499 P-2000 photo viewer (find.pcworld.com/45536). LCDs equipped with Photo Fine have a pixel density of 212 pixels per inch (256 ppi on



were impressive: Colors looked brilliant, images were crisp and smooth, and the screen maintained a good field of view at most angles.

—Grace Aquino

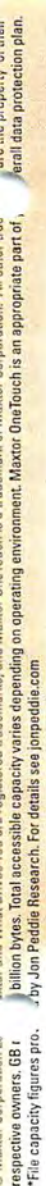
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File capacity figures pro-
spective owners. GB i
Total accessible capacity varies depending on operating environment. Maxtor One Touch is an appropriate part of,
by Jon Peddie Research. For details see jonpeddie.com

NETWORKING

New Wi-Fi Nearly Doubles Speed

BELKIN'S PRE-N LINE ALSO DRAMATICALLY IMPROVES RANGE—EVEN FOR B AND G GEAR.

WIRELESS networking products are never modest in their performance claims. However, Belkin's new Wireless Pre-N Router (\$150) and Notebook Network Card (\$100) promise—and deliver—dramatically faster speeds and much better range than their fastest 802.11g predecessors.

Not only is the new gear compatible with 802.11g and 802.11b equipment, in our tests 802.11g clients actually performed better on a network based upon the Pre-N router. (The Pre-N name refers to the 802.11n standard that is still in development. More on that later.)

This impressive performance wouldn't matter if you used a wireless network only to share broadband Internet access (which tops out at 1 to

1.5 mbps) and were happy with the range of your existing setup. But Belkin's Pre-N products would clearly benefit users who want to move large files, stream video, or extend the range of their home or small-office Wi-Fi network.

SPEEDY TRANSFERS

IN OUR TESTS transferring data between a PC connected to the Pre-N router via ethernet and an IBM ThinkPad R40 notebook equipped with the Pre-N PC Card, throughput speeds from a distance of 10 feet were between 37 mbps and 42 mbps, with an average of 40 mbps. When we ran the same tests with a network using Belkin's own 802.11g router and PC Card, throughput ranged from just 13 mbps to 23 mbps, with an average of



BELKIN'S Pre-N networking gear improves speed and range by using three antennas to transmit data.

20 mbps. (See the chart.)

When we moved the notebook some 50 feet and several rooms away from the PC and router, the Pre-N throughput declined, as we would expect. Speeds ranged from 12 mbps to 33 mbps, with an average of 20 mbps. But the 802.11g PC Card and router could not transfer data at all.

However, when we replaced the 802.11g router with the Pre-N router, the notebook with the 802.11g card was able to connect from 50 feet, though at speeds we'd expect from the slowest Wi-Fi standard, 802.11b. And when we connected an 802.11g notebook to a network that otherwise included all Pre-N equip-

ment, the network didn't slow down in an informal test.

The Pre-N products achieve their performance gains mostly by using technology called MIMO (Multiple Input Multiple Output), in which a number of antennas transmit many unique data streams in the same frequency channel (other Wi-Fi products transmit data in a single stream in a single channel).

Belkin says it calls the products "Pre-N" because some implementation of MIMO is almost certain to be the basis for the IEEE's upcoming 802.11n standard, the successor to today's 802.11a/b/g standards. Certified 802.11n products likely won't appear until early 2007. When they do, it's possible that Belkin's equipment will be incompatible with the certified gear.

But if you want to improve your net's speed or range, we see no reason to wait the two-plus years until the 802.11n standard is finalized.

—Yardena Arar

TEST REPORT

PRE-N WI-FI DELIVERS SPEED, RANGE

IN OUR TESTS, a network using Belkin's Pre-N router and Notebook Network Card transferred data significantly faster than one using the company's high-speed 802.11g equipment.

NETWORK ROUTER/ADAPTER	10 feet apart		50 feet apart	
	Throughput range (mbps) ¹	Average throughput (mbps)	Throughput range (mbps) ¹	Average throughput (mbps)
Belkin Wireless Pre-N Router/Notebook Card	37 to 42	40	12 to 33	20
Belkin High-Speed Mode Wireless G Router/Notebook Network Card	13 to 23	20	Unable to transfer	Unable to transfer



¹Lowest and highest throughput observed in 20 trials. **HOW WE TEST:** Tests were conducted in a private home with no other wireless network detected. For each test we connected the router to an IBM NetVista desktop running SuSE Linux and installed the PC Card in an IBM ThinkPad R40 notebook running Windows XP Home Edition with Service Pack 2. We then used FTP to send and receive roughly 50MB of data between the notebook and the desktop. We repeated these transfers at various specific positions at each distance.

Wireless Pre-N Router/Notebook Network Card

Belkin

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\$150 Router, \$100 Notebook Card

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DESKTOP SEARCH

Google Stumbles With New Desktop Tool

BETA SEARCH APP CREATES VULNERABILITIES THAT MAY THREATEN YOUR DATA'S SECURITY.

GOOGLE WANTS TO help you effectively access the piles of information you store in the documents, e-mail messages, Web pages, and contact lists stuffed on your PC. And who better to help you than the most popular search engine on the Net, right? Not so fast.

Though it lacks a few features, the beta version of Google Desktop Search (find pcworld.com/45630) does give the same satisfying results for your PC that Google.com provides for the Web. But as it's designed now, GDS also delivers a potential security nightmare, say industry experts.

Google is not the only powerhouse focusing on desktop search. AOL, Microsoft, Mozilla, and Yahoo are all working on their own versions.

SEARCH'S PLUSES

GOOGLE'S TOOL downloads and installs itself in no time at all, and lets you generally select the types of files you want to include. GDS then sets out to build an index of your entire electronic existence. It operates in the background, so you can continue working. Indexing 20GB of data—not including Adobe PDF files, which the GDS beta does not index—took a little more than an hour on my PC.

After the indexing is done, a simple double-click launches GDS, which offers the same look and feel that millions of Internet users have come to



know by using Google.com.

And that's where the thrill ended for me. To be fair, highly specific searches returned accurate results, just as they do on Google.com. But when you look for files or e-mail that may be years old, whose details are now sketchy, you may be less able to target searches properly, and anything less leaves you wading through piles of Word documents and

as fast as you can type, and your results are sorted according to file type and date.

SECURITY MINUSES

ONE THING Copernic's tool doesn't include is secure Web pages. In my book, that's a good thing, since such pages (with URLs that begin with *https*) include things like online banking statements and e-commerce sites containing your credit card information. But unless you indicate otherwise either at installation or later, GDS includes it all, even though such pages are supposed to be secure and accessible only if you have entered the correct user names and passwords for your protection.

GDS also provides cached

to its cache—after you've gone through the security handshakes. (Go to Preferences to turn off this ability if you miss it in installation. Note that any secure pages GDS already has in its index remain there, but they are hidden from search results unless you choose to include them once again.)

Moreover, GDS stores its painfully complete index in one convenient location on your hard drive with no encryption or password protection—a hacker's and worm writer's dream come true.

"[GDS] puts the index of your data in a well-known place on your hard drive," says Stephen Green, principal investigator of the Advanced Search Technologies Group at Sun Microsystems. "It's only a matter of time before there is a spyware application or a worm that sends your Google index to a site somewhere."

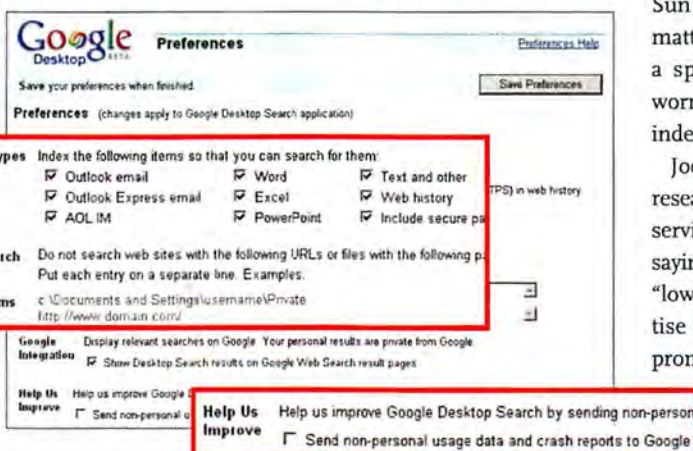
Joe Stewart, senior security researcher at Chicago security services firm LURHQ, agrees, saying GDS's unsecured index "lowers the bar for the expertise needed to find and compromise sensitive data."

Google has not responded to our multiple requests for

comment on these issues.

GDS works fairly well as a search engine for your desktop. But there are other free search tools with equal or better functionality, without the potential privacy and security hassles I saw in this beta.

—Dan Verton



GO TO THE Preferences page to select which types of files you'll allow GDS to cache. You can also opt not to send Google reports.

instant messaging hits even when you know you're looking for a spreadsheet.

I preferred the free Copernic Desktop Search tool (find pcworld.com/45632). It works

access to PGP-protected hard drives. How does GDS circumvent the safeguards for such protected data and Web sites? Simple: The tool adds all viewed documents and pages

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PLUGGED IN

STEVE FOX

A New PC for \$185—Really

PLUS: NET-BASED TV TRIALS, AND VIRUSES BRANCH OUT TO LINUX.

SUPERCHEAP PCs ARE BACK

The Buzz: How much would you expect to pay for a fully functional PC with a 10GB hard drive, 128MB of DDR RAM, a keyboard, a mouse, a modem, four USB ports, Windows, and a suite of basic apps? Try \$185, or \$249 with a 15-inch CRT monitor. AMD, in association with international partners, is readying the Personal Internet Communicator, a fat-paperback-size machine that's part of its "50x15" initiative, intended to outfit half the world's population with computers by 2015. Primarily targeting first-time buyers, the



PIC runs on AMD's Geode GX500 processor and a specially developed Windows CE-like operating system dubbed Windows XC.

Bottom Line: Microsoft's Steve Ballmer recently conjectured that sub-\$100 PCs would remove the temptation to pirate software (or at least OSs) worldwide. How ironic: The PIC might just hit that price point if it used Linux.

WHERE TV IS HEADED

The Buzz: You already have broadband, and perhaps you're considering using those same Internet pipes to make phone calls with VoIP. Well, get ready for TVIP, or television over Internet Protocol. Microsoft's IPTV service—currently in international trials (including with SBC in the United States)—aims to deliver TV to any device over phone lines and some programming on demand. Many European companies are running pilots of their own, and according to FCC chair Michael Powell, virtually every major U.S. telco is working on a TVIP offering.

Bottom Line: TVIP is inevitable. The storage capacity is available, as are a host of advanced compression algorithms and enough off-the-shelf hardware to hold down set-top box costs. Factor in a slew of existing customers, and you have a captive (and receptive) audience.

VIRUSES FOR LINUX

The Buzz: One classic computing myth has it that Linux is virus-proof. The reality: Linux is vulnerable. But just as the infamous outlaw Willie Sutton robbed banks because "that's where the money is," virus writers target Windows because that's

HERE\NOW

1 PODCASTING: Pick up broadcast music and talk shows on your audio device—even if it's not an iPod (ipodder.org).

2 MAP24.COM: Zoom in, out, and around dynamic 3D maps that will make you forget MapQuest and Yahoo Maps.

3 KONFABULATOR: This indispensable Mac utility brings handy "Widgets" to the Windows world for the first time (konfabulator.com).

4 DELICIOUS: Share your bookmarks on this "social bookmarking" service; discover worthwhile new sites and blogs that like-minded folks are viewing.

5 MYFI: Get XM satellite radio piped to a \$350 portable (not car-bound) gizmo (xmradio.com).

where the people are. Linux is gaining traction, however, and attention-seeking malware purveyors are starting to generate Linux-oriented exploits. For instance, a recent bogus e-mail, claiming to be from the Red Hat Security Team, offers a "critical patch" that is actually a highly destructive Trojan horse. You can expect this trend to grow as migration to Linux accelerates.

Bottom Line: Linux was due for some attention, but Windows is definitely still the big (Swiss) cheese.

Contributing Editor Steve Fox covers buzzworthy products, ideas, and trends. Contact him at steve_fox@pcworld.com. Visit find.pcworld.com/31643 to see more Plugged In columns.



CRAZY TECH

Rewind Your Life

NEVER MISS A PRICELESS moment again—that's the premise behind Deja View's Camwear 100, a \$400 wearable camera that clips onto your hat or your glasses to capture everything you see. When you witness something of interest, press a button and the Camwear will dump the previous 30 seconds of video onto a 64MB

SD card inside the base unit that's good for about 16 half-minute clips. Kind of a neat idea, but we're betting that a lot of those 30-second clips will include 25 seconds of people pointing at the goofy guy with the camera on his head. For a closer look, see find.pcworld.com/45568.

—Tom Spring

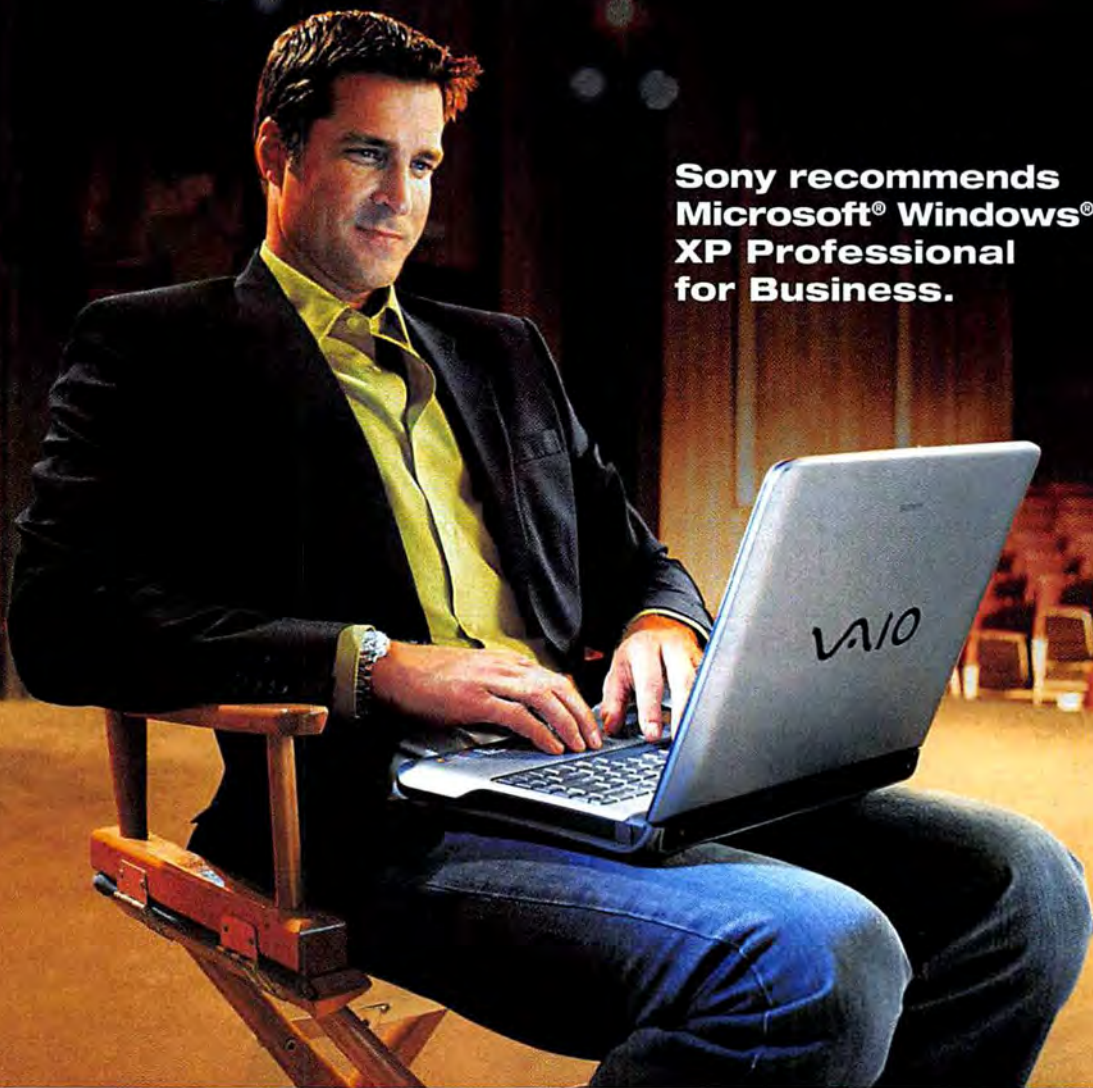


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READERS' FAVORITE STORES

I WAS SHOCKED to see the Poor rating for Staples in the chart "Best Buying Advice: Web Stores Whip Retail" ["Best Places to Buy," November]. Maybe my Staples, in Waltham, Massachusetts, is a big exception. But its excellent advice and technical information, as well as out-of-the-ordinary helpfulness—especially in this era of the vanishing and usually ignorant or unwilling salesperson—are amazing, and they bring me back there for all of my technical purchases.

Marian Kaplun Shapiro, via the Internet

I THINK AN INJUSTICE was done by leaving out NewEgg.com from your review in the online section. It is one of the biggest online stores to sell technology and consistently receives positive reviews

from customers. NewEgg consistently offers products at a value unmatched by brick-and-mortar stores. Its selection is huge, the shipping is very cheap, and it lists detailed information as well as having a solid return policy.

Steve Baird, via the Internet

Editor's response: We wish we could have covered more online stores, but we wanted the story to focus on buying advice, so we limited ourselves primarily to national chains and a few large online retailers. We have covered NewEgg and similar online stores in previous articles and will do so again.

—Eric Dahl

DON'T REWARD WORM WRITERS

I READ YOUR ARTICLE "Biography of a Worm" [November] with great interest. I was appalled, however, that the alleged writer of the Sasser worm (Sven Jaschan) is being recruited by a German firewall firm. I believe that such an irresponsible action encourages others to write malicious code in hopes of gaining lucrative employment. The computer security industry should make it a policy never to hire anyone convicted of writing mali-

cious code. Taking this step would undoubtedly reduce the number of individuals tempted to try such a career path.

Matt Basham, Phoenix

XP'S SERVICE PACK 2

RECENTLY I MADE the worst mistake of my computer-enhanced life—I downloaded XP Service Pack 2 ["Is XP's Fix Safe?" *News and Trends*, November]. When I first got my current PC, it ran quietly, smoothly, and fast. With each Microsoft update, it ran slower and slower. XP SP2 crashed my computer completely. It took my younger son (our family computer guru) two weeks to get it back up and running—a job that, after I'd tried everything else, involved wiping the hard drive and installing everything all over again.

Chuck Ambrogio, Severn, Maryland

WIRELESS INTERFERENCE

THANKS FOR "The Ultimate Wireless Guide" [November]. Because I live in a dense urban environment, I often "see" as many as six other networks from my living room, and everyone uses cordless phones. This means my router and wireless card occasionally encounter interference. Whenever the wireless card attempts to reestablish communication with the router at such times, my keyboard and mouse freeze for periods of up to 4 seconds. I often yank the wireless card from my laptop so I can get work done.

Ken Danko, San Francisco

MORE DISK SEARCHERS

YOUR ARTICLE ABOUT software that searches computer hard drives ["Find Files Fast," November] left out the best program of all: DiskMeta (www.diskmeta.com). Its free version is fast, simple to use, and extraordinarily accurate.

Ken Sperandio, via the Internet ▶

LETTER OF THE MONTH

Adware From the PC Repair Shop?

STEPHEN MANES'S *Full Disclosure* column on adware on new PCs ["Buy a Computer, Get Adware for Free!" November] reminded me of the time I took my laptop to a local mom-and-pop computer repair shop in Norfolk, Virginia.

The shop fixed the problem; but when I got my laptop back, I found that the desktop had about 15 new icons on it, for things like "Sign up for MSN" or

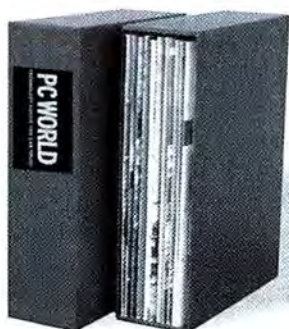
"5000 free hours of America Online."

It's no longer enough that Windows itself installs a bunch of sales pitches on your desktop; now, when you arrange to have your computer fixed, you get ads installed by the repair shop!

What's the next step—Coca-Cola ads slipped into your car when you drop it off for an oil change?

Danny Barnes, via the Internet

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LETTERS

YOUR ARTICLE missed a great freeware file search tool: Copernic's Desktop Search. It allows almost instantaneous search of files, e-mail, photos, music, videos, contacts, and favorites, and customization.

Bill Woll, Venice, Florida

LONGER THAN YOU THINK

WITH REGARD TO "How Long Can a File Name Be?" [*Plugged In*, November]: A "file name" can be 255 characters long—but that includes your name for the file *plus* the path! Thus, a file called "Draft" in the My Documents folder actually has a file name of "C:\Documents and Settings\Henry\My Documents\Draft."

Excessively long file names can result in mysterious file behavior (files suddenly can't be copied, deleted, moved, backed up, or renamed). For instance, you may have moved a file much deeper within the directory structure so that its name exceeds 255 characters. Shorten the name by deleting lots of characters or by moving the file to a higher folder level.

Henry J. Lee, via the Internet

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

CORRECTIONS

FOR OUR DECEMBER *News and Trends* story "Fast RAM Provides Low Value," the Doom 3 game test was run at 640 by 480 resolution and 32-bit color depth. The memory test at 512MB with standard memory was a single result.

In our December feature "Entertainment to Go" (in the "Focus on TV" sidebar on media players), we should have said that we looked at IRiver's PMC-120.

In November's *News and Trends*, the story "Is XP's Fix Safe?" should have said that Eset's NOD32 antivirus program, in its current version, is compatible with SP2. Also, the article "AMD Value CPU Is No Athlon" should have said that the new AMD chip was tested on a system from Monarch Computer.

In November's *Top 15 Desktop PCs*, the photo was of the HP Pavilion A650e.

PC World regrets the errors.



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A Computer Is a Terrible Thing to Waste

Don't let your obsolete tech gear sit in the attic—or worse, end up in a landfill.



I'M NOT PROUD OF THIS, but here's what I recently discovered stashed in a corner of my basement, right next to the high school yearbooks and stacks of vinyl LPs: two old tower PCs, two CRT monitors, a nonfunctioning multifunction fax/copier/scanner, a cell phone the size of a Kleenex box, a single-disc CD player, an elderly but willing inkjet printer, and a PDA that long ago lost its will to hot-sync.

Naturally, I never intended to create a refugee camp for discarded digital devices. It just sort of evolved, primarily because I wasn't sure what to do with the

old stuff. Nobody I knew wanted it, and the local charities I usually donate to generally don't take technology equipment.

I'm clearly not the only one harboring a gadget graveyard. In addition to the electronic clutter in garages across the land, plenty of businesses have storerooms stocked with ancient equipment.

Throwing the stuff out, though, can be worse than stockpiling it. According to the Environmental Protection Agency, the average CRT monitor or TV contains about 4 pounds of lead, and most electronic devices contain mercury, cadmi-

um, and other hazardous materials. Currently, according to the EPA, electronics account for about 1 percent of all solid waste, but most research suggests that the percentage is increasing every year.

MANUFACTURERS HELP

THE GOOD NEWS? Hardware makers and other companies are finally starting to help stem the flow of electronic waste. Many have established programs that make recycling easier for consumers and that offer incentives such as discounts on new purchases for customers who recycle.

Last summer, Office Depot worked with HP to offer free electronics recycling to the public for a limited time—all you had to do was drop off your device at a local store. Companies such as Dell, Gateway, and IBM provide recycling services, too.

HP, which historically has been proactive in electronics recycling, will recycle just about any PC, monitor, printer, scanner, fax machine, or handheld device—including equipment made by companies other than HP. You simply fill out an online form (find.pcworld.com/45292) and pack the hardware up. At \$13 to \$34 per item, the service isn't the cheapest solution around, but the convenience is hard to beat: Just leave the box on your doorstep, and rest assured that your hardware will be reused or recycled for parts.

If you have your own collection of outgrown tech gear languishing in a hall closet, start the new year right and clean house. Chances are that you have something someone can use. Even if you don't, it's worth spending a few minutes—and maybe a few bucks—to dispose of those dormant devices responsibly. ▶

First take inventory of what you have in storage. Separate the things that work from those that don't, and gather all the documentation and components you can find. Don't worry if the devices have minor problems; in some cases, facilities will do minor repairs or upgrades.

Obviously you shouldn't even think of handing over a computer—or anything else that might store private information about you—without wiping the entire hard drive clean. (And remember, simply deleting the sensitive data doesn't make it unrecoverable from the hard drive.)

Some refurbishers or recycling services might offer to wipe the hard drive for you, but unless the company is run by your mom, my advice is to do it yourself. Visit find.pcworld.com/45294 for some utilities that will eliminate all traces of you.

There is a downside to wiping the drive completely: Most charities and nonprofits

don't have the resources to replace deleted operating systems and other software. If you have either a restore disc for the computer or your original copy of the OS, you can help by reinstalling the software or by including the disc with the PC.

FREE TO A GOOD HOME

ONCE YOU'VE COLLECTED and cleaned your hardware has-beens, you can focus on getting rid of them. The easiest approach is to find a company that specializes in placing or recycling used equipment and let that group handle the details, even if it ends up costing you a few dollars.

A helpful place to start your search is the National Recycling Coalition (find.pcworld.com/45328), which offers an extensive database of recyclers and refurbishers, listed by state. Another useful site is TechSoup (find.pcworld.com/45296), which lists recyclers, refurbishers,

charities, and other resources by region.

Check with your community's waste management department, as well. Many cities and towns schedule times when you can drop off electronics and other unwanted equipment; some even provide occasional curbside pickup service.

Got an old cell phone, PDA, or other small electronic device whose service is no longer required? ReCellular, a Michigan-based company, collects and refurbishes or recycles unwanted devices, donating most of the proceeds to charities. Return any retired cell phone to a local pickup spot (go to find.pcworld.com/45560 for a list of locations near you), and it'll be refurbished, reused, or recycled, according to marketing director Mike Newman.

And don't forget that disposing of some recent tech products could yield you a little cash. Auction giant EBay is doing its part to encourage consumers to sell ▶

PRIVACY WATCH



Kill Really Stubborn Spyware With This Tool

THE FRUSTRATING THING about spyware is how astonishingly persistent some of the nasty little apps can be. You think that you've cleaned them off with a squirt of some reputable anti-spyware

utility; but the next time you boot up, they're back again. If you want to get rid of them permanently, who you gonna call? HijackThis.

HijackThis (find.pcworld.com/44710) is a free tool of last resort, something you should turn to only after you've exhausted both Ad-Aware (find.pcworld.com/33071) and Spybot Search & Destroy (find.pcworld.com/42052)—and a full system antivirus scan as well. But if your PC has been infected with spyware, HijackThis can look deep within the places in Windows where spyware apps dig in their roots, and help you figure out how to yank the weeds.

HijackThis is different from a lot of anti-spyware apps. It doesn't attempt to identify which code it thinks is spyware, and it won't offer to remove the bad stuff automatically. To use HijackThis effectively, you'll probably need advice from experts, unless you can spot a spyware program by the names of its Registry keys and DLL files. One good resource is the large group of dedicated volunteers on the TomCoyote Forum (find.pcworld.com/44712).

Because it's a powerful tool, HijackThis could kill a critical part of Windows, rendering your PC unbootable. Your best course of action

is to perform a full system backup beforehand. If you're running Windows XP, at least create a system restore point so that you can back out of any changes you make. To do this, click *Start•Programs•Accessories•System Tools•System Restore*, select *Create a restore point*, click *Next*, and follow the instructions.

Running the program is easy: Double-click *HijackThis.exe*, and then click the *Scan* button in the lower-left corner to start the

analysis. The program gives you an inventory of everything it has found in 34 different locations where spyware can live. Click the *Save Log* button (it replaces the *Scan* button after the scan is complete) to create a text file of your results. Post that file, along with a description of your PC's symptoms, on the message board at TomCoyote Forum or another forum dedicated to spyware.

Getting rid of the spyware-related entries in HijackThis isn't always equally easy. After a volunteer makes a recommendation, rerun HijackThis and fill in the check boxes next to the entries that the volunteer recommends you delete. When you click the *Fix Checked* button, those Registry entries get deleted—but sometimes those keys can be restored the next time you reboot. In those circumstances, the volunteers will give further recommendations.

Using HijackThis can be tricky, but when a really nasty strain of spyware invades your system, you'll be glad you have it.

—Andrew Brandt

HijackThis looks
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ON YOUR SIDE

Software Incompatible With Phone

I BOUGHT FutureDial's SnapSync software and cable to transfer my Outlook contacts from my PC to my Sanyo cell phone, which was listed on the software's compatibility list. When the software didn't work, I asked the company's tech support staff for help, but that didn't fix it. Tech support finally authorized me to return the CD and cable for a refund, but it's been over a month now and I haven't received a dime. What can I do?

Tony Hays, Atlanta

On Your Side responds: FutureDial spokesperson Bruce Brunger says that although Hays's cell phone, the Sanyo SCP-6400, did appear on the SnapSync software's compatibility list, the company later discovered a technical limitation that affected the compatibility of the drivers and the software for that model.

FutureDial subsequently removed the Sanyo phone from its list of compatible phones, and has issued Hays a refund.

—Stephanie Layton

their outgrown computers for reuse. The company's PC Selling Center service (pcsellingcenter.ebay.com) lets you obtain a detailed description of your computer (using an online tool provided by *PC World*) and a quote of its value, print prepaid shipping labels, order shipping

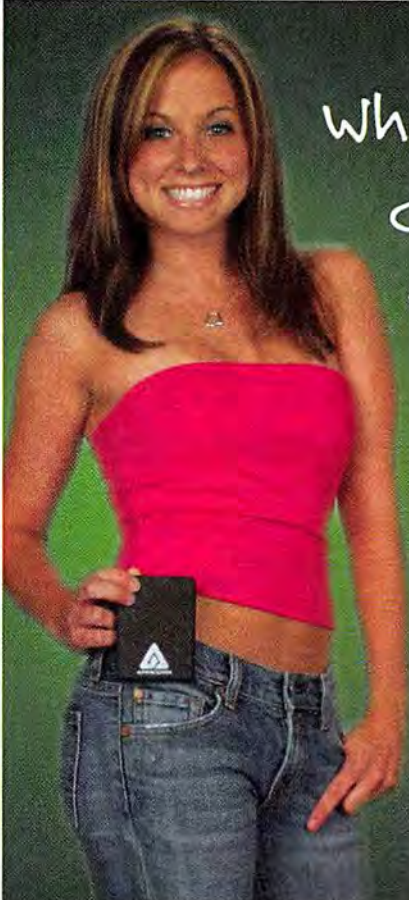
materials, post a listing, and arrange for pickup, all with just a few clicks. David Stern, senior category manager of systems at EBay, says, "When we surveyed our customers, we found a tremendous demand for systems that are between one and three years old. So it made sense to

help sellers reach out to that community."

As for my own collection of idle tech tools, I discovered a nearby recycling center and cleared out my electronic castoffs within a few hours. Some of the devices—like the CD player and the printer—even got a new lease on life, finding a home at a nonprofit after-school program.

It's a win-win solution: You get rid of stuff you don't need, help a good cause, and do the environment a favor. But remember, the longer your computer sits idle, the less useful it becomes. So Happy New Year—and happy recycling. ■

Anne Kandra is a contributing editor, Andrew Brandt is a senior associate editor, and Stephanie Layton is an editorial assistant for *PC World*. You can send e-mail to them at consumerwatch@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.



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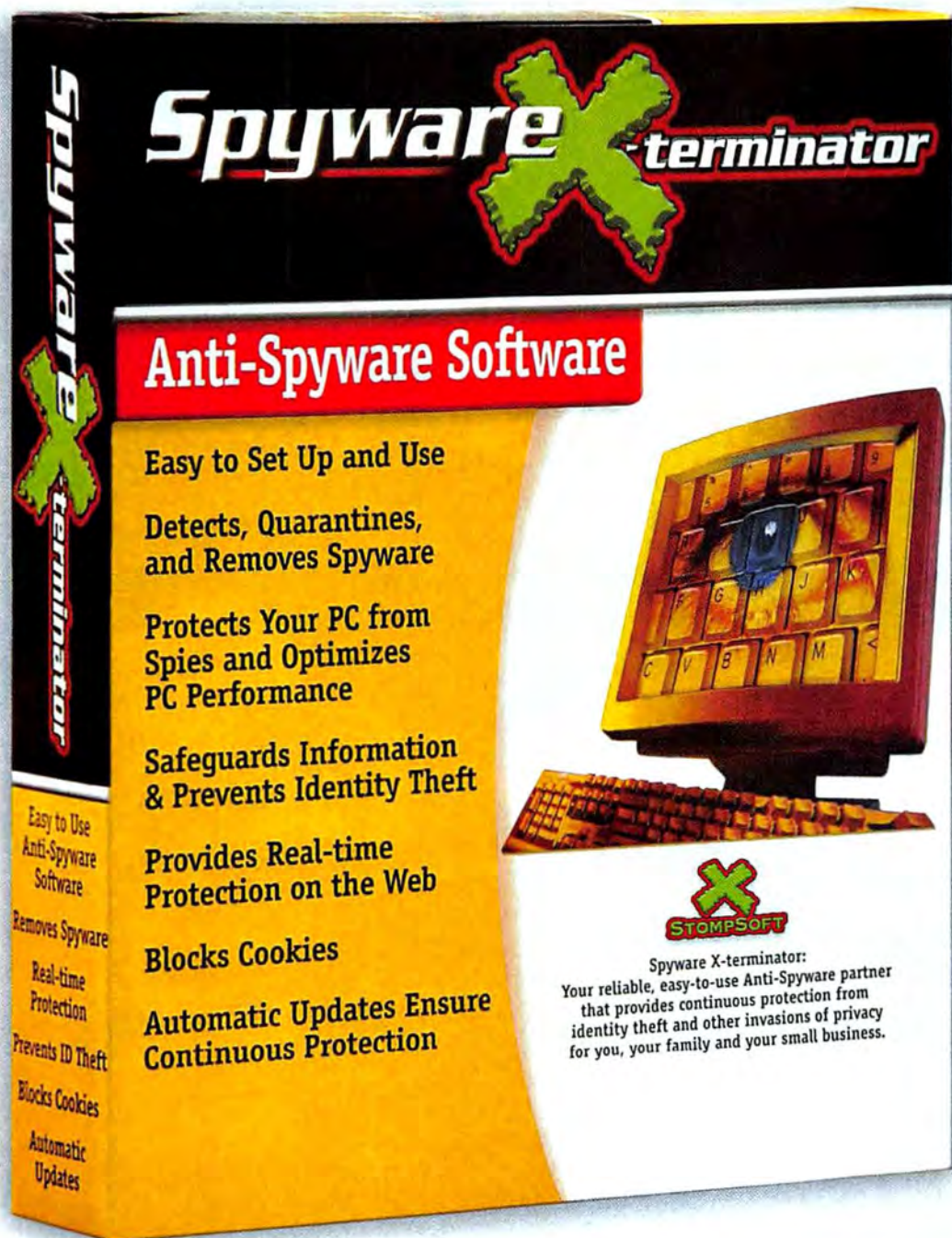
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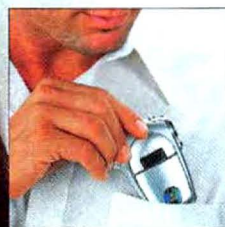
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STEVE BASS

Your XP Service Pack 2 Survival Guide

Steve knows how to handle Windows XP's latest bug fix and security update.

GIVE ME A CHOICE between chopping onions and installing Service Pack 2 for Windows XP, and I'll be in the kitchen in a nanosecond—either way I'll be crying. I finally managed the upgrade, but not without a few bumps that I'll show you how to avoid.

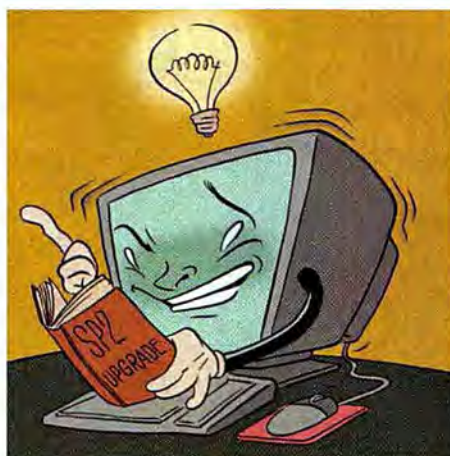
There are enough good things about SP2 to make the upgrade hoops worth jumping through. SP2's strength is behind the scenes: more protection against Internet thugs. For instance, the new ActiveX warning in Internet Explorer—called the Information Bar—alerts me whenever a site tries to download software to my system. But the browser's new pop-up blocker is too little and way too late. (The free Google Toolbar is a better pop-up popper; go to find.pcworld.com/44870 for the download.)

Before you take the upgrade plunge, breathe deeply, clear your mind, and follow these suggestions.

Save this phone number: To its credit, Microsoft provides free chat, e-mail, and phone support for problems that make you want to cry. The toll-free number is 888/772-4357; visit find.pcworld.com/44878 for other SP2 installation details.

Get the CD: Microsoft recommends that you use Windows XP's Automatic Update feature, which will download SP2 in the background while you're on the Internet. I prefer upgrading from the company's SP2 disc so I can upgrade my notebook, too, without another download. The CD arrived four days after I ordered it. Browse to find.pcworld.com/44880 for the disc (head for the 'order a CD' link).

Prepare your PC: Update all your critical applications before loading SP2. Most vendors have released SP2-compatible versions of their programs. (Check find.pcworld.com/44882 for known application conflicts.)



spyware is a common cause of installation problems, so update your firewall, antivirus, anti-spyware, and other security programs, and then do a complete scan with each one.

Not using antivirus software? Scoot on over to find.pcworld.com/44884 to try Trend Micro's free, Web-based HouseCall. For anti-spyware, visit find.pcworld.com/44886 to download the free Spybot Search & Destroy. SpywareGuide.com's X-Cleaner is an online spyware-blasting alternative (find.pcworld.com/44888). If you find spyware or a virus, remove it and then reboot your system.

Back up: I can't emphasize this enough: Back up your system before you load SP2. Go to find.pcworld.com/44890 to buy Norton Ghost (about \$70), or get a copy of Acronis's \$50 True Image (find.pcworld.com/44892). Then back up your data on an external USB drive or to CDs.

Disable your auto-start apps: Turn off all the programs running in the background on your system, including your antivirus program, spyware monitors, screen savers, and system utilities. They may throw

SP2 for a loop. Browse to find.pcworld.com/44894 to download WinPatrol, a free tool that temporarily disables background programs. Once everything's off, install SP2 and then use WinPatrol to re-enable the programs. If you have a finicky PC, Microsoft advises you to boot your system in Safe Mode before installing SP2 (not a bad idea). To get to Safe Mode, press <F8> just before Windows loads.

Finally, grab something to read, or get ready to take a snooze. SP2 can take 2 hours or more to install. And be careful—it may look as if the upgrade has frozen. SP2 is actually doing lots of shoveling and shuffling, so don't interrupt it.

You may see a nagging Windows Security Risk warning pop out of the system tray. I actually like the feature because it warned me that Grisoft's AVG, my anti-virus program, was disabled. AVG had updated itself and wanted a reboot, something I hadn't done yet.

The alert might indicate that you don't have a firewall installed, or that yours is disabled; you'll get nagged until you enable a firewall. I told SP2 that I'd do my own firewall thing, but it duly ignored both my response and my firewall. Also, SP2 will definitely be unhappy if you disable Windows' Automatic Update feature. Open Control Panel, click or double-click *Automatic Updates*, and then uncheck *Turn off automatic updates*. You can also activate SP2's update protection (along with its antivirus and firewall features) via Control Panel's Security Center applet. Go along to get along, I say. ■

Contributing Editor Steve Bass is the author of PC Annoyances, published by O'Reilly. Contact him at homeoffice@pcworld.com.

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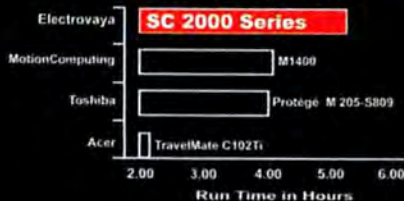


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BUGS & FIXES

STUART J. JOHNSTON

Fix Windows XP SP2 Installation Woes

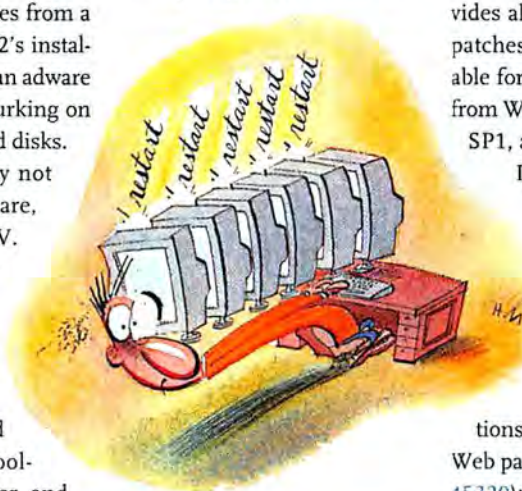
Plus, patch serious security holes in Windows and Internet Explorer.

LOTS OF FOLKS who have installed Windows XP Service Pack 2 have run into an annoying glitch that causes their PCs to restart repeatedly. Microsoft has a patch to fix the problem, which arises from a conflict between SP2's installation program and an adware application that is lurking on many PC users' hard disks.

Many people may not realize that the adware, Total Velocity's T.V. Media, is on their system. T.V. Media displays ads in Internet Explorer in exchange for letting you download and use a search toolbar, a memory meter, and speed enhancement programs for dial-up Web browsing. You get to use the software for free as long as you watch the ads.

But if you install SP2 with T.V. Media present, your PC gets caught in a maddening cycle of constant restarts. Avoid the aggravation and fix the problem *before* upgrading to SP2. Pick up Microsoft's patch at find.pcworld.com/45314. The patch will take care

of the compatibility issue, but won't remove or block the adware. If you aren't using the free software (or weren't aware that you had it in the first place), I recommend re-



moving it. Go to find.pcworld.com/45316 to see Total Velocity's removal instructions.

MORE IE AND WINDOWS FIXES

MICROSOFT HAS ALSO posted four new patches that take care of six critical security holes in IE and Windows. If you're running Windows XP with SP2 installed, none of the flaws affect you. But if you

haven't upgraded to SP2 yet, you should install the patches.

One is a cumulative update for IE (find.pcworld.com/45318) that addresses three new critical holes and provides all previous IE security patches. The update is available for all operating systems from Windows 98 through XP SP1, and for all versions of IE from 5.01 forward.

The other three patches do the following: (1) fix security flaws in the way Windows 2000, NT, and XP SP1 start applications found on a malicious Web page (find.pcworld.com/45320); (2) update how Windows XP without SP2 handles zipped files (find.pcworld.com/45322); and (3) mend the way in which Windows versions 98 through XP SP1 will render Windows Metafiles and Enhanced Metafiles, which are graphics data embedded in graphics files (find.pcworld.com/45538).

Sure, these are a lot of bugs to patch. But a clever interloper could exploit any of these flaws to take over your PC, perhaps even stealing files or erasing your hard disk. ■

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

IN BRIEF

Dell Adapter Recall

DELL IS RECALLING 990,000 AC power adapters for some Inspiron, Latitude, and Precision laptops that the company sold between September 1998 and February 2002. The adapters may be fire hazards, though no fires or injuries have occurred. To determine whether you have a defective adapter and to participate in the replacement program, head to find.pcworld.com/45324.

Toshiba Recalls Laptop Memory

TOSHIBA IS replacing faulty memory modules in many of its Dynabook, Portégé, Satellite, and Tecra notebooks. A defective module may cause the system to crash, lock up, or corrupt undetected memory data. Toshiba provides software to check your laptop for the defective memory and will send a replacement if necessary. For more information, call 866/544-1325 or browse to find.pcworld.com/45356.

PATCH REALPLAYER SECURITY HOLES

REALNETWORKS PATCHED three security holes in RealPlayer 10 and 10.5 (version 10.5 with update number 6.0.12.1056 is not affected by this) and RealOne versions 1 and 2 that could permit an attacker to take over your PC. Get more details and the software updates at find.pcworld.com/45326.

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.

IBM recommends Microsoft® Windows® XP Professional.



IBM ThinkPad X40

GO with IBM Think Express Program

IBM Think Express models are configured and priced with small to medium-size businesses in mind.

IBM rated #1 in tech support for desktops and notebooks by PC Magazine readers. PC Magazine 17th Annual Reader Satisfaction Survey – July 14, 2004

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MOBILE TECHNOLOGY

IBM ThinkPad R51 Ultimate Value

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0¹ – Strongest security as a standard feature (Excluding IBM models with Integrated Fingerprint Reader)
- IBM Access Connections – switch between wired and wireless connections

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor 715 (1.50GHz)²
 - Intel® PRO/Wireless Network Connections 802.11b/g³
- Microsoft Windows XP Professional⁴
- 14.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM⁵
- 30GB hard drive⁶
- Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength
- 1-yr system/battery limited warranty⁷

NavCode 288380U-M537

THINK EXPRESS MODEL PRICED AT

\$1,299*

\$46/mo for 36 months

SuccessLease for Small Business⁸

ServicePac⁹ Service Upgrade⁹

3-yr Depot Repair #30L9192 **\$132**

IBM ThinkPad X40

Our thinnest and lightest

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0 – Strongest security as a standard feature
- IBM Rescue and Recovery™ – One-button recovery and restore solution

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor ULV 1.1GHz
 - Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 20GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard¹⁰
- Only .94" thin¹¹
- 2.7-lb travel weight¹²
- 1-yr system/battery limited warranty¹³

NavCode 2386A4U-M537

THINK EXPRESS MODEL PRICED AT

\$1,499*

\$53/mo for 36 months

SuccessLease for Small Business

Our ultraportable notebook has never been easier to carry.

Trains. Planes. Automobiles. Three reasons not to lug around a heavy notebook. So, when you're away from the office and working wirelessly, use an IBM ThinkPad™ X40 notebook, with Intel® Centrino™ Mobile Technology (on select models). They're our thinnest, lightest¹¹ notebooks ever. Yet, they're really big on features, like a full-size keyboard.¹⁰ Some models are just 2.7 lbs. Other models feature the longest standard battery life of any leading brand notebook²¹ (8-cell battery required, not shown). The IBM ThinkPad X40. Fast and powerful, in a surprisingly convenient take-home size.

You might want to keep an eye on it.

Ultralight weight. Longest-lasting standard battery.

Only on a ThinkPad.

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center. Calls must be received by 5pm local time in order to qualify for Next Business Day service. (10) Full-size keyboard: As defined by ISO/IEC 15412. (11) Thinness: may vary at certain points on the system. (12) Travel weight: includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. (13) Public network access limited: Subscription may be required and fees may apply. (19) SuccessLease: SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. (21) Battery Life: Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data as of 1/29/2004. Trademarks: The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, Rapid Restore, Rescue and Recovery, ThinkPad, Ultrabay, UltraConnect and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. ©2004 IBM Corporation. All rights reserved. Visit www.ibm.com/pc/safecomputing periodically for the latest information on sale and effective computing.

Take a look at some of our latest models. And get connected.



Why IBM ThinkPad Notebooks?

To make IBM ThinkPad® notebooks even more valuable, each one featured here can give you the efficiency, productivity and edge you need—and comes with all the following ThinkVantage™ Technologies:

IBM Active Protection System: Butterfingers, not! Select IBM ThinkPad notebooks now include airbag-like technology to help protect your hard drive from some damage caused by drops and jolts.

NEW! Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access Connections: Switch between wired and wireless connections.

Embedded Security Subsystem 2.0: Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private.

Access IBM: Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

IBM ThinkPad R51

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 725 (1.60GHz)²
- Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional¹
- 15" XGA TFT display (1024x768)
- 256MB DDR SDRAM³
- 40GB hard drive⁴
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength
- 1-yr system/battery limited warranty⁵

NavCode 183604U-M537

THINK EXPRESS MODEL
PRICED AT

\$1,449*

\$52/mo for 36 months
SuccessLease for Small Business⁶



IBM ThinkPad T42

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 725 (1.60GHz)
- Intel® PRO/Wireless Connection 802.11b
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- 1-yr system/battery limited warranty⁵

NavCode 2378R7U-M537

THINK EXPRESS MODEL
PRICED AT

\$1,599

\$58/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade⁷:
3-yr Depot Repair #30L9192 **\$132**



IBM ThinkPad X40

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor LV 1.40GHz
- Intel® PRO/Wireless Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM fullsize keyboard¹⁴
- 7.5-hr Li-Ion battery¹⁵
- 1-yr system/battery limited warranty⁵

NavCode 2386E9U-M537

THINK EXPRESS MODEL
PRICED AT

\$1,749

\$62/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
3-yr Onsite Repair/9x5/Next Business Day
Response #30L9195 **\$243**



(Monitor not included)

Why IBM ThinkCentre PCs?

Only IBM offers these features to protect your users, connect them, and keep them working. Each ThinkCentre™ desktop featured here can give them the efficiency, productivity and edge they need with the following ThinkVantage Technologies:

Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access IBM: Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of IBM resources and assistance.

IBM ThinkPad T42

IBM ThinkVantage Technologies:

- Integrated Fingerprint Reader – Your passwords at the tip of your finger.

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 735 (1.70GHz)
- Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 512MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty⁵

NavCode 2379R8U-M537

THINK EXPRESS MODEL
PRICED AT

\$2,179

\$78/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
4-yr Onsite Repair/Next Business Day
Response #69P9198 **\$299**

IBM ThinkPad X40 Solution Pack

IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook¹⁷

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor LV 1.40GHz
 - Intel® PRO/Wireless Network Connection 802.11b/g
 - Microsoft Windows XP Professional
 - 12.1" XGA TFT display (1024x768)
 - 256MB DDR SDRAM
 - 40GB hard drive
 - Integrated Gigabit Ethernet and modem
 - 7.5-hr Li-Ion battery
 - 3-yr system/1-yr battery limited warranty⁵
- Accessories Included:**
- ThinkPad X4 UltraBase Dock
 - IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 2382ECU-M537

THINK EXPRESS MODEL
PRICED AT

\$2,149

\$76/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
5-yr Onsite Repair/9x5/Next Business Day
Response #69P9200 **\$449**

IBM ThinkCentre A50 Tower form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- 256MB DDR PC3200¹⁸
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite™ Millennium license
- 1-yr parts limited warranty with 1-yr limited onsite service¹⁹

NavCode 814821U-M537

THINK EXPRESS MODEL
PRICED AT

\$649

\$23/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
2-yr Onsite Repair/9x5/Next Business Day Response #54P1859 **\$75**

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IBM recommends Microsoft® Windows® XP Professional.



(Monitor not included)

IBM ThinkCentre A50 Ultra small form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- Ultra small form factor – 74% smaller than a standard IBM desktop®
- 256MB DDR PC3200
- 40GB hard drive • CD-ROM
- Gigabit-Ethernet Integrated
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 1-yr limited warranty with limited onsite service¹⁷

NavCode 809021U-M537

THINK EXPRESS MODEL

PRICED AT:

\$829

\$30/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/Next Business Day
Response #54P1861 **\$132**

IBM ThinkCentre A51p Tower form factor (model not shown)

System Features:

- Intel® Pentium® 4 Processor 530 with HT Technology
 - Processor speed 3.0GHz
 - 800MHz FSB
- Microsoft Windows XP Professional
- Intel® Graphics Media Accelerator 9000
- 256MB DDR2 PC2-3200
- 40GB hard drive • CD-RW
- Gigabit Ethernet-integrated
- IBM Embedded Security Subsystem 2.0
- 1-yr parts limited warranty with 1-yr limited onsite service¹⁷

NavCode 842721U-M537

THINK EXPRESS MODEL

PRICED AT:

\$799

\$29/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4-hr Response
#54P1862 **\$239**



IBM eServer BladeCenter System Features:

- Flexible – full performance and manageability of traditional rack optimized platforms
- Infrastructure integration – help lower TCO and increase control
- Simplify – easy to deploy, easy to install, easy to manage

HS20

- Intel® Xeon™ 2.8GHz/533MHz FSB
- 40GB IDE/2GB DDR2 PC2100
- 3-year limited warranty

NavCode 8832LEX-M537

EXPRESS MODEL PRICED AT:

\$2,589

BladeCenter Chassis

- 7U rack mount chassis – up to 14 blades per chassis
- 2000W power
- Cisco Ethernet switch module

NavCode 86773EU-M537

EXPRESS MODEL PRICED AT:

\$7,289

\$258/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4 hr Response
HS20 #69P9517 **\$279**
BladeCenter Chassis 41L2736 **\$600**

IBM eServer xSeries 336

System Features:

- Leading performance with Intel's EM64T technology – 32 and 64bit simultaneous computing
- High Availability with redundant power and hot swap fans – Calibrated Vectored Cooling enables density and performance
- Simple Management with on board service processors and optional remote management support – take control of your server environment
- Intel Xeon 2.8GHz/800MHz FSB
- Two 73GB SCSI/2GB DDR2 PC3200

NavCode 88370EU-M537

EXPRESS MODEL

PRICED AT:

\$3,349

\$119/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
4-yr Onsite/9x5/4-hr Response
#69P9243 **\$609**



The IBM Infoprint® 1412

System Features:

- Enhance your system with Monochrome Laser/200 MHz processor
- Speed: Print up to 27 pages-per-minute (ppm)²⁰
- First page-out time as fast as 8 seconds²⁰
- Print quality: up to 2400 image quality
- 32MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 1-yr limited warranty¹⁷

NavCode 75P5759-M537

PRICED AT

BASE = **\$429**

NavCode 75P5760-M537

PRICED AT

NETWORK = **\$519**

250 Sheet Tray #75P6112 **\$92**

ServicePac Service Upgrade:
1-yr Onsite/9x5/Next Business Day
4-yr Response #29R5518 **\$47**

IBM InfoPrint Express Offerings:

Easy to buy. Easy to deploy. Priced right.

Special Edition InfoPrint® 1422n Express Bundle

System Features:

- Monochrome Laser/366 MHz processor
- Speed: Print up to 32 pages-per-minute (ppm)²⁰
- First page-out time as fast as 9 seconds²⁰
- Print quality: up to 2400 image quality
- Up to 64MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 1-yr limited warranty¹⁷

Bundle Includes:

- Duplex Capability
- Additional 250-sheet drawer

NavCode 75P6795-M537

PRICED AT:

\$879

\$32/mo for 36 months
SuccessLease for Small Business



MOBILE TECHNOLOGY

IBM Think Express Program:

We've configured and priced many of our products specifically for small and medium businesses. And best of all, they're available direct from IBM or through select IBM Business Partners.

IBM ThinkPad Accessories

Belkin Components: Universal Notebook Travel Surge Protector
#22P7127 **\$20**

Targus Wireless Optical Mini Mouse
#22P7438 **\$27**

IBM ThinkPad Carrying Case¹⁴ – Expander
#73P3587 **\$59**

ThinkPad 72W AC/DC Combo Adapter
#22P9010 **\$99**

ThinkPad Port Replicator II
#74P6733 **\$179**

IBM ThinkCentre Accessories

IBM UPS 500
#39L3477 **\$99**

IBM ThinkVision® L170p 17" Flat Panel Monitor with system purchase
#W9SPH80 **\$449**

IBM Server Accessories

IBM S2 42U Standard Rack Cabinet
#930745X **\$1,489**

IBM Rackmount XLV 3000VA UPS
#2130R30 **\$1,799**



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Calls must be received by 5pm local time in order to qualify for Next Business Day Service. (14) Full-size keyboard: As defined by ISO/IEC 15412. (15) Battery: These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone® 2002 BatteryMark™ Version 1.0 Battery Runtime Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc.; neither Ziff Davis Media, Inc., nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at ibm.com/pccvw/thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. (16) Size claims: are based on a comparison of chassis volume to the volume of IBM's standard desktop chassis. (17) Systems with limited onsite service: are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. (18) Certain IBM logo products: are not manufactured, warranted or supported by IBM; IBM logos and trademarks used under license. Contact IBM for details. (19) SuccessLease: SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. (20) Print speed: Exact speed varies depending on document complexity, system configuration, software application, driver and printer state. (21) Battery Life: Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data as of 1/29/2004. Trademarks: The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, ImageUltra, Lotus, NavCode, Rapid Restore, Rescue and Recovery, SmartSuite, ThinkCentre, ThinkPad, ThinkVantage, ThinkVision, UltraConnect, UltraBase, Ultrabay and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved. Visit www.ibm.com/pccsafecomputing periodically for the latest information on safe and effective computing.

NEW PRODUCTS

EDITED BY TOM MAINELLI

Inexpensive Video Editors Shine

These \$100 apps offer enough powerful features to make your next home movie a masterpiece.

VIDEO EDITORS

VIDEO EDITING applications can make desktop movie production fun and rewarding—or they can turn it into a job more aggravating than any other computing task around. I looked at shipping versions of Adobe's **Premiere Elements** and Pinnacle Systems' **Studio Plus 9** and found that both do a great job of capturing, editing, and burning movies to disc. **Premiere Elements**, however, is the clear winner for advanced users and for people who want room to grow.

Adobe's **Premiere Elements** is a new, \$100 application that closely resembles the company's \$700 **Premiere Pro**. **Premiere Elements** cannot use

multiple timelines or nested sequences, batch capturing, surround-sound editing, and some **Premiere Pro** color correction tools. But like **Pro**, it can accommodate up to 99 video and audio tracks within a single project file.

Pinnacle Systems' **Studio Plus 9**, which also costs \$100, differs slightly from Pinnacle's \$80 **Studio 9**. Most notably, the **Plus** version can handle two video tracks (**Studio 9** manages one), so it permits picture-in-picture and chroma-keying (superimposing a portion of one video on another, the way a meteorologist does).



PINNACLE STUDIO PLUS 9 shows captured video clips in a large menu; from here, you drag the clips into either the program's storyboard or its timeline.

CAPTURING FEELING

NATURALLY, BOTH applications capture footage from a MiniDV camcorder; in fact, Adobe cautions that **Premiere Elements** is meant exclusively for MiniDV footage (usually an AVI file). When I tried to import MPEG files from the

you just drag them into the storyboard or timeline. The storyboard lets you arrange clips with ease, and you can switch back and forth between it and the timeline. Though **Premiere Elements** doesn't have a storyboard, it can detect scenes and send them directly to the timeline.

Sony DCR-DVD301 camcorder (see next page), both applications slowed to an unusable pace and frequently crashed.

Like most video editing applications, **Studio Plus** automatically splits footage into clips based on the camcorder's embedded time code;

Studio Plus adds a Smart-Movie function that requires almost no decision making: You just choose a style (for example, "soft and romantic"), enter a title and some closing credits, and hit a button. The result is a serviceable movie; and if you don't like it, you can make changes in the timeline.

Premiere Elements ships with more than 300 video and audio effects and transitions,



ADOBE PREMIERE ELEMENTS' interface is friendlier and more attractive than **Premiere Pro**'s; it presents how-to information in a special pane.

- 52 VIDEO EDITING SOFTWARE**
Adobe Premiere Elements, Pinnacle Systems Studio Plus 9
- 53 VIDEO CAMERA**
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most of which have an incredible range of adjustability, including keyframing for applying effects over time. Studio Plus, however, ships with just 20 effects and 186 transitions; Many other effects, transitions, and additional features appear within its interface, but with padlock icons next to them—a nettlesome way of letting you know that you can't use them unless you purchase them first (effects packs run \$6 to \$40).

Premiere Elements has 33 DVD menu templates; the application will automatically generate DVD menu markers, or you can set them manually in the timeline quite easily. You can customize only text, however: You can't modify the backgrounds that come from the templates, and you can't apply movement or audio.

Studio Plus comes with 45 DVD menu templates, a few with audio or motion. If you drag a menu into the storyboard or timeline, the application will ask whether you want it to generate menu markers automatically. Then you have to switch to the Make Movie section of the application to set disc-burning parameters. The process is easy, but not quite as easy as with Elements.

Video editing applications are notoriously finicky, and I ran into all sorts of problems

with these two programs. For example, Premiere Elements labored when attempting to process DV files, until I updated my graphics card driver (thereafter it worked fine). In addition, the application refused to recognize my system's internal Pioneer DVR-108 burner. Meanwhile, for its part, Studio Plus got hung up during the rendering process on more than one occasion.

When Premiere Elements works, however, it's inspiring.

The program's outstanding interface and sophisticated effects enable you to create some amazing movies.

Studio Plus is a great video editor for beginners, but it has

far less power than Premiere Elements, and the intrusive reminders to buy additional components give this application an annoying trialware feel.

—Alan Stafford

Premiere Elements

Adobe Systems

★★★★☆

Incredible power for the money; good for novices as well as people who expect to upgrade later.

Street: \$100

find.pcworld.com/45340

Studio Plus 9

Pinnacle Systems

★★★☆☆

Easy to use, and packs a decent set of tools, but chronically annoying, too.

Street: \$100

find.pcworld.com/45342

Big-Screened DVD Movie Maker

DIGITAL CAMCORDER

SONY'S LATEST camcorder, the **HandyCam DCR-DVD301**, is not much different from other DVD camcorders, except that it has a 3.5-inch screen (huge for a small camcorder). Despite having a built-in DVD burner, the DCR-DVD301 is fairly compact, includes Sony's excellent low-light modes, and takes great footage that

works in most DVD players.

If you want to ditch the dull parts and add a little flair to your videos, this HandyCam probably isn't your best choice. To import files from it into your PC, you have to use the included Pixela ImageMixer. The application generates either DVD-compatible VOB files, which few desktop video editors can read, or MPEG files, which cause editing programs to roll over and play dead.

The DCR-DVD301 is a great camcorder for people who don't have very much time to devote to editing the raw video



SONY'S HANDYCAM DCR-DVD301 has a huge screen.

they shoot. But if you have big plans for your videos, you're probably better off with a standard MiniDV camcorder.

—Alan Stafford

HandyCam DCR-DVD301

Sony

★★★★☆

Great video and a big LCD, but don't buy it if you plan to do much editing.

Street: \$1000

find.pcworld.com/45338

Lexmark MFP Falls Short on Copy Quality

MULTIFUNCTION PRINTER

LEXMARK REFERS to its **X7170** MFP as an Office Productivity All-in-One and has outfitted it with lots of features and a solid software bundle. But some documents that the \$249 unit produces won't make a very professional impression.

The X7170 feels sturdy, and in our tests it worked at a businesslike pace, printing color graphics at 1.5 pages per minute and text at 7.7 ppm, which ties for the fastest text speed mark we've seen recently from



THE LEXMARK X7170 offered decent prints at good speeds, but it faltered as a scanner.

an inkjet multifunction unit.

Alphanumeric characters looked fairly sharp, but text sometimes didn't align properly. Glossy photos retained details nicely, with vivid color.

The X7170's copying and scanning speeds were above average, and its expansive control panel and function buttons let you operate it easily without a PC. But when we

used the function buttons to make scans and copies, the text seemed jagged. Documents we made at the Normal quality setting were lackluster, and when we switched to Best quality, the copies turned out even worse.

Scans of photographs that we printed on glossy photo paper in Best quality mode looked awful and got worse when we swapped in the unit's optional photo ink cartridge.

The X7170 offers business-worthy speeds and acceptable printouts, but it fails to deliver copying and scanning quality that any office demands.

—Eric Butterfield

QUICK TAKES

A PC in Your Mac

SOME MAC USERS need apps that are still Windows-only, hence Microsoft's **Virtual PC 7** emulation software. Retooled to work with Mac OS X and the G5 processor, the app isn't always speedy, but it was remarkably stable in my trials of a shipping version. My Mac barely passed the program's steep system requirements, so Windows was slow to start up and shut down. But Virtual PC 7 performed well, without crashing. At \$249 for the Windows XP Pro version and \$219 for the XP Home edition, it's a bit pricey (if you already have an XP license, you can get it for \$129). For a Mac user who works in a PC environment, this app is a must.

find.pcworld.com/45348

—Rebecca Freed

X7170 Office Productivity All-In-One

Lexmark

★★★★☆

Strong business-oriented features and decent print quality, but poor scanning capabilities.

Street: \$249

find.pcworld.com/45344

NEC's Slick Wi-Fi Projector

PROJECTOR

THE WIRELESS-READY **LT265** DLP (Digital Light Processing) projector from NEC has a smooth, eggshell-white veneer that commands attention. I found much to like about this unit, but a few drawbacks too, including an overly complex wireless setup procedure.

The \$2495 projector's native

XGA (1024 by 768) resolution yielded sharp text and crystal-clear graphics images. Less impressive was my shipping unit's color handling: Images and video DVD colors looked muted; adjusting the image presets helped, but the results still weren't perfect.

Basic setup for the LT265 was simple, thanks to a host of connectivity options (including various jacks plus wired ethernet). The wireless setup was frustrating, however. I installed NEC's optional \$159 NWL-100A PC Card and discovered that neither the included manual nor the on-screen help provided adequate



NEC'S LT265 includes a PC Card slot so you can connect it wirelessly.

setup guidance (NEC says it plans to post extra help online).

Once configured, the wireless component did a significantly better job of Wi-Fi projection than earlier iterations. For optimum performance, you must access the projector via an established wireless-G network (direct notebook-to-

projector connections are slow and even more complicated).

The NEC LT265's multitude of features makes this model a good choice for various presenting situations. But its average color reproduction and overly complicated wireless setup detract from it.

—Melissa J. Perenson

LT265

NEC

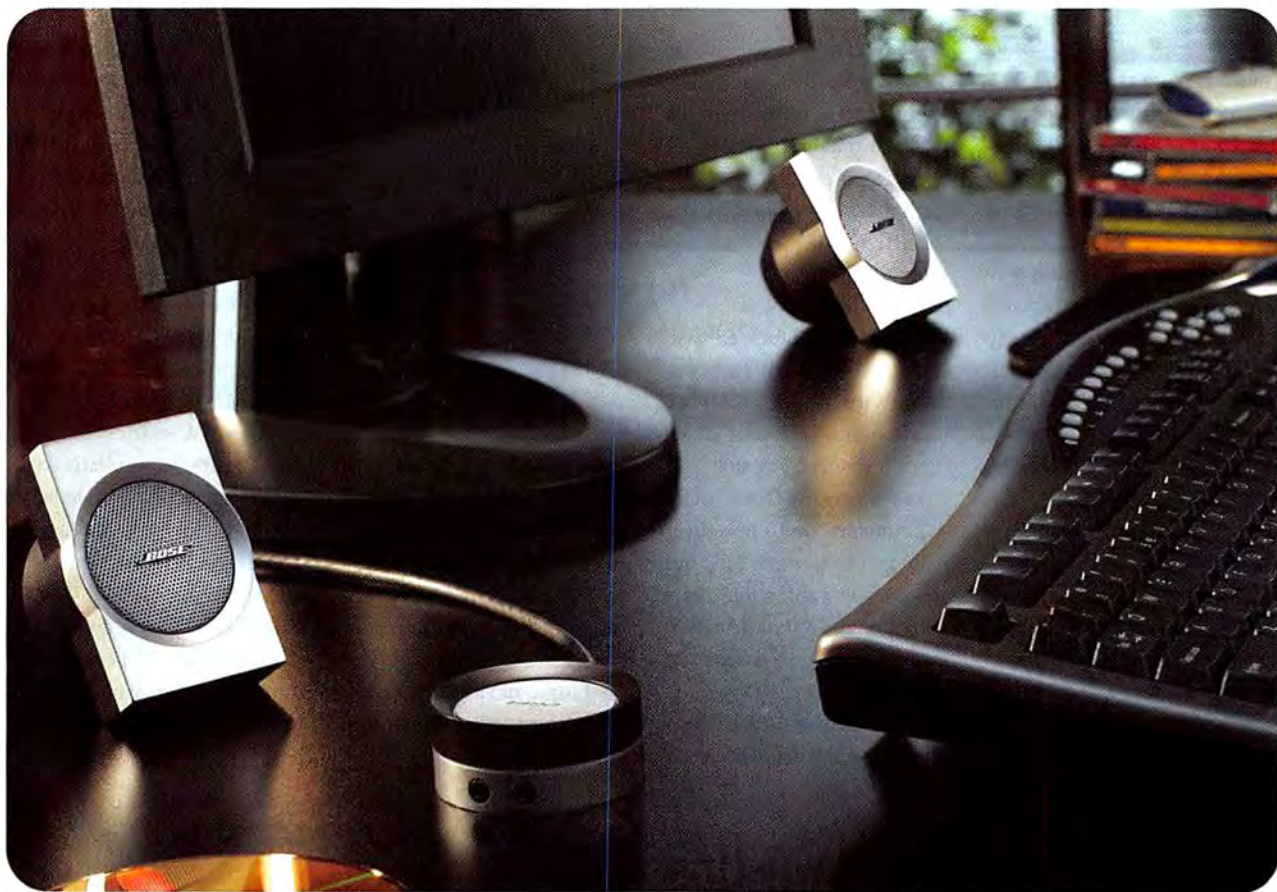
★★★★☆

Nice features, but documentation is poor and wireless setup tricky.

List: \$2495 (plus \$159 for optional NWL-100A wireless card)

find.pcworld.com/45352

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Sony Gets Down to Business

NOTEBOOK

TRADITIONALLY, SONY has created computer products that focus on fun and after-hours entertainment, but its latest VAIO B Series laptops come ready to tackle business.

I looked at a shipping version of a B Series notebook, the **VAIO VGN-B100B02**. Sony offers models of its configurable business-class notebooks only at smb.us.sony.biz, its small-business Web site.

VAIO VGN-B100B02

Sony

★★★★☆

Well-designed business notebook turns in stellar performance and has excellent battery life.

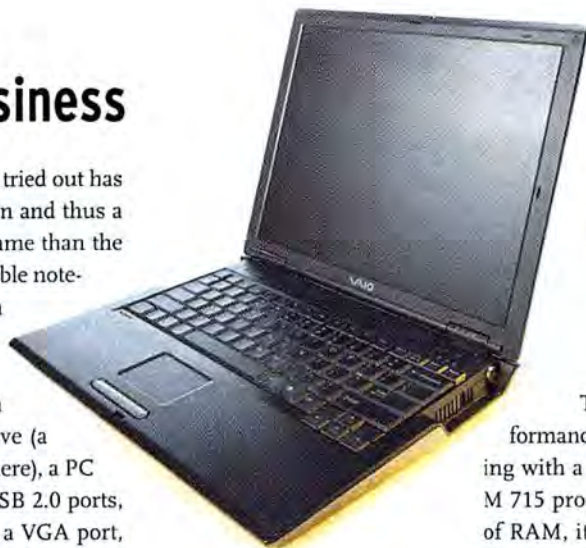
List: \$1600

find.pcworld.com/45336

The \$1600 unit I tried out has a 14.1-inch screen and thus a slightly larger frame than the typical ultraportable notebook. That extra girth gives it sufficient room to include a fixed optical drive (a CD-ROM drive here), a PC Card slot, two USB 2.0 ports, a FireWire port, a VGA port, modem and ethernet jacks, and a Memory Stick slot.

At 5.1 pounds (5.8 with its AC adapter), this sleek silver unit is fairly portable, but you'll likely want to tote along an optional \$200 port replicator in case you need access to a parallel port or DVI port.

The VGN-B100B02's keyboard is well laid out and easy



SONY'S VAIO VGN-B100B02 is the company's first business-class notebook product.

The B Series' performance wowed us. Working with a 1.5-GHz Pentium M 715 processor and 512MB of RAM, it earned a score of 72 on our WorldBench 5 test suite, besting all similarly configured notebooks we've tested. And its battery life is impressive, at just over 5 hours.

Overall, the VGN-B100B02 should satisfy business users who need lots of processing power and plenty of features in a portable package.

—Kalpana Ettenson

to type on. It has an 802.11g wireless on/off switch and two programmable launch buttons. The keyboard lacks a pointing stick, however: It's touchpad-only. Some users might miss the versatility of dual input devices, which are fairly common on business-class notebooks.

Peer-to-Peer for Grown-Ups

FILE SHARING

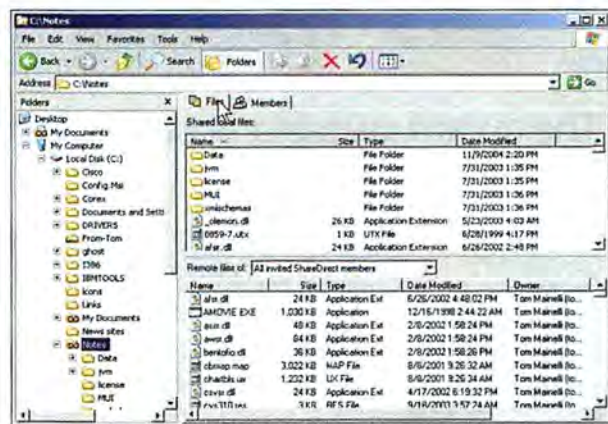
LAPLINK'S NEW **ShareDirect** offers a secure way for you to share files with coworkers—whether they are across the room or across the ocean.

ShareDirect is a combination application and service that offers a simple, Windows Explorer-based peer-to-peer method for sharing files between PCs running Windows

2000 or XP. By default, ShareDirect attempts to establish a direct client-to-client connection between the systems involved. Sharing occurs by invitation and applies only to the designated folder. You can create multiple shared folders, each with its own managed membership of sharers.

If the app can't establish a direct connection (for example, if a system is protected by a firewall), ShareDirect's Premium data-transfer service transports files via Laplink's relay servers. Whatever the type of transfer, ShareDirect encrypts all data to protect it from prying eyes.

I tested a shipping version of ShareDirect (version 1.0.61). Installation was fast and pain-



LAPLINK'S SHAREDIRECT app integrates with Windows Explorer.

less, and in moments I was securely transferring my files.

ShareDirect's subscription-based pricing is tied to how much data per month you plan to transfer to your PC from other members' PCs via Premium service; options range from 50MB (\$40 per year) to 3GB (\$250 per year). The \$100 Personal Network Edition I

tested offers three licenses, each with 400MB of Premium data transfers per month, and antivirus scanning of all files.

In a market dominated by insecure and anonymous P2P networks rife with malicious code, Laplink's ShareDirect offers safe, authenticated sharing between select users.

—Mary Landesman

ShareDirect

Laplink

★★★★☆

A safe way to transfer files among PCs that don't share a secure network.

Pricing: Subscription-based, \$40 to \$250 per year, depending on data-transfer volume

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ViewSonic

Indulge

New Tricks for Palm Tungsten, Dell Axim

P D A s

IF YOU'RE GOING to shell out at least \$400 for a handheld that isn't also a phone or a camera, you expect more than a plain-vanilla PDA. Both PalmOne's **Tungsten T5** and Dell's **Axim X50v** deliver that something extra—but they do so in notably different ways.

The biggest selling point of the \$399 Tungsten T5: It has 256MB of memory—almost four times as much space as its predecessor (the Tungsten T3) had, and the most we've seen on a PDA to date. Sure, you can always add storage by using the T5's SD slot; but you might need that for something else, such as a promised optional SD Wi-Fi card.

What's more, the memory is nonvolatile: Even if the T5 loses its charge, you won't lose any of your data. And 160MB of it is held in an internal flash drive: Plug the handheld in to any computer with plug-and-play support for a USB thumb drive, and you can access your stored files. (The T5's desktop software also supports HotSync-less file transfers for the internal drive, but you can add apps only by using HotSync.)

BIG DISPLAY, NO WI-FI

THE T5 FORSAKES the collapsible chassis that distinguished previous Tungstens, but it retains its predecessor's hand-

some, oversize (320 by 480) display. As a result, the T5 is a bit taller—though not dramatically so (4.8 inches versus 4.3 inches for the collapsed T3).

Powered by Intel's 416-MHz Bulverde XScale CPU, the T5



PALMONE'S TUNGSTEN T5 offers users a large display and a huge amount of storage space.

is a snappy performer. But my preproduction unit's battery life was adequate for only a day or so of intensive use, even without going online. I wish that PalmOne would add a removable rechargeable battery, not to mention Wi-Fi instead of Bluetooth for wireless Internet access—something that's become increasingly important for business use.

This is the first Tungsten

that doesn't ship with a cradle. Instead, you get a USB cable with a Hot Sync button. But the T5 should appeal to people who would like to use their PDA for storing lots of files. Others might take a fresh look at the T3, which now goes for \$50 less than it used to cost.

BETTER GRAPHICS

IF MULTIMEDIA—especially video and games—matters to you, try Dell's Axim X50v Pocket PC: Not only does it pack Intel's most powerful CPU for handhelds, the 624-MHz Bulverde, but it's one of the first mainstream PDAs



DELL'S AXIM X50v includes a dedicated graphics chip that makes for better multimedia.

with a dedicated graphics processor (the Intel 2700 with 16MB of graphics memory). It's also the first PDA to include version 10 of Windows Media Player Mobile, which permits playback of content from subscription services that support Microsoft's Windows Media Digital Rights

Management 10 technology.

The X50v has 64MB of RAM and 128MB of flash ROM; you can add more storage via the SD Card and CompactFlash slots. Wi-Fi and Bluetooth are built in. Battery life depends on whether you use the power-draining multimedia and wireless features. If you do, consider carrying a spare battery: The X50v's batteries are removable and rechargeable; the USB charging cradle has a slot for an extra standard (\$50) or double-strength (\$89) battery.

Dell is catching up with the competition in the industrial design of its handhelds. About the same size as the T5 but slightly heavier (6.2 ounces versus 5.1 ounces), the Axim X50v is sharp-looking in the style of HP's smaller IPaqs.

I played a racing game on a shipping X50v and was impressed by the smooth performance on the 3.7-inch 640-by-480 (full-VGA) screen. The handheld gets warm, however, and the Pocket PC won't replace anybody's Game Boy.

Still, the X50v delivers excellent Pocket PC performance, expansion, and connectivity in a sleek, \$499 package, reinforcing Dell's reputation for delivering the most PDA bang for the buck. (Dell also offers two less expensive X50 models, each having less memory, 320-by-240 screens, and slower Bulverde CPUs.)

The Dell's impressive update should delight any power Pocket PC user. The Tungsten T5, an evolutionary upgrade, will appeal primarily to people who want a Palm-based business handheld that can double as a portable storage device, and who don't insist on having out-of-the-box Wi-Fi.

—Yardena Arar

Axim X50v

Dell

★★★★★

Multimedia fan's dream Pocket PC has a dedicated graphics chip and great connectivity at a fair price.

List: \$499

find.pcworld.com/44728

Tungsten T5

PalmOne

★★★★☆

Big internal flash drive is a great plus, but so-so battery life and lack of Wi-Fi disappoint.

List: \$399

find.pcworld.com/45306

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New Steganos Pro: Less Anonymity Than Expected

PRIVACY SOFTWARE

BY RELYING ON intermediate proxy servers to camouflage your PC's IP address, **Steganos Internet Anonym Pro 7** claims it will keep your surfing anonymous. Unfortunately, my tests produced poor results that left me feeling exposed.

I tested a shipping version of the \$60 app and noticed a significant decline in my access speed after installing the program. Steganos warns that the app may slow access, but when I turned on the anonymizer, my connection seemed to grind to a halt.

The culprit turned out to be a default setting that was altering the proxy identity once per second. After adjusting the interval for changing identity to once per minute, I



STEGANOS INTERNET Anonym Pro 7 didn't always offer reliable info.

could surf, but my connection remained extremely sluggish.

Slow performance wasn't the only drawback of Anonym Pro 7. On several occasions the app assured me that it was preserving my anonymity—even when it was not.

For example, when I probed my PC using Sygate Online

Services' free security scanner (scan.sygate.com/probe.html), the Web site had no difficulty determining my system's actual public IP, though Anonym Pro 7 continued to report that my identity was secret.

Sygate's site uses standard http over port 443—the same PC port that secure Internet

sites employ in working with https. According to Steganos reps, http is not redirected to anonymizing proxies if it is used on any port other than the standard port 80. But the program never alerted me to this change, encouraging me to believe that I was surfing anonymously when I was not.

In the end, you're probably better off surfing unprotected than proceeding with an unwarranted sense of security.

—Mary Landesman

Steganos Internet Anonym Pro 7

Steganos

★★★★☆

App promises Web anonymity but delivers unreliable results.

List: \$60 full, \$50 upgrade

find.pcworld.com/45302

AutoSketch Makes 2D Drawings Easier

DRAWING SOFTWARE

YOU DON'T HAVE to be an architect or an engineer to need software that allows you to create precise drawings. Whether you're an office manager working on the floor plan of a new office, a contractor sketching out a renovation, or a homeowner working on a remodeling project, check out Autodesk's **AutoSketch 9**. The \$120 program is less expen-

sive and easier to use than the company's industrial-strength AutoCAD app, and it's compatible with AutoCAD's DWG file format. I tested a shipping version of AutoSketch 9.

The program's project wizard steps beginners through selecting the type of drawing to prepare and entering the project's units of measure and dimensions. Users with more experience can start drawing immediately from scratch or with predrawn templates.

The All-In-One Toolbar puts almost all the drawing tools you need in the workspace, rather than burying them in drop-down menus. If you've used drawing programs before, you'll find that many of

AutoSketch's tools behave in familiar ways. The number of tools is so extensive, however, that you'll need to consult the help files on occasion to take full advantage of them.

If you just want to landscape

your backyard, a less pricey tool can do the job—for home projects, Brøderbund's venerable 3D Home Architect (\$50) comes to mind. But if you regularly create precision line drawings and need AutoCAD compatibility, AutoSketch 9 is well worth the price.

—Rebecca Freed

AutoSketch 9

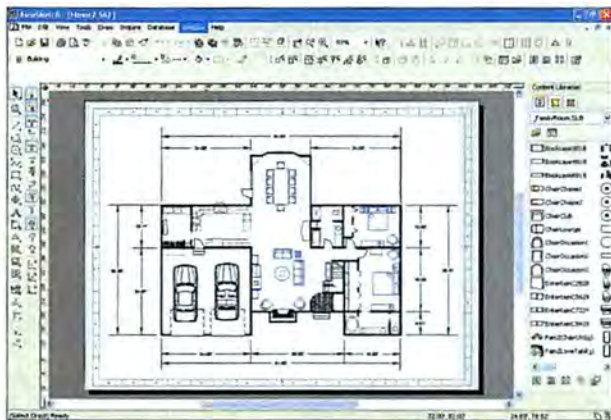
Autodesk

★★★★☆

Powerful 2D drafting program offers precise drawing tools at a reasonable price.

Street: \$120

find.pcworld.com/45304



AUTOSKETCH 9 OFFERS BEGINNERS a wide range of drawing tools.



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MyDVD 6: Better—but Not Best—Burning

AUTHORING SOFTWARE

SONIC'S **MyDVD Studio Deluxe 6** offers substantial improvements over previous editions of this easy-to-use utility, including a new interface and better video handling capabilities. Unfortunately, the prod-

uct lacks key features available in competing products, and at \$100 it seems a bit overpriced.

The most noticeable change from version 5 is the interface. A new tasks pane simplifies navigation, and Sonic has introduced guides to get new us-

ers up to speed more quickly.

The real meat of this upgrade, however, is its more-comprehensive and easier-to-use video handling. You can mix NTSC and PAL video and import all types of MPEG-4 video, such as DivX, QuickTime, and XviD. Also included are simpler, VCR-like EP, LP, SP, and HQ quality settings; true 16:9 anamorphic video capture and burning; and a convenient fit-to-disc record mode that eliminates the hassle of balancing compression versus quality.

DVD menu buttons are movable (at long last), though the menu title remains firmly rooted where one of the attractive menu templates puts it.

Regrettably, Sonic peppers

the suite with marketing offers, and some rough edges and missing tools lower its value. For example, the program has yet to offer MP4 encoding or image mounting—tools you'll find in competing products such as Ahead Software's Nero (\$100) and Roxio's Easy Media Creator (\$80).

Despite the advances that the app makes over its predecessor, Sonic's asking price (\$100 for new users and \$80 for upgraders) makes it too expensive for what you get.

—Jon L. Jacobi

MyDVD Studio Deluxe 6

Sonic

★★★★☆

Dramatically improved edition, but still lacks a few features found in comparable packages.

List: \$100 full, \$80 upgrade

find.pcworld.com/45300



SONIC'S MYDVD STUDIO DELUXE 6 has a new interface that makes using the program's improved video handling capabilities easier.

Good Scans Made Slowly

SCANNER

VISIONEER'S **Xerox 6400** is the first flatbed scanner bearing the Xerox brand name that targets photography buffs rather than office workers. The \$180 scanner did a solid job in my tests, generating high-quality photo reproductions that include ultrahigh-resolution scans. Its poky pace and limited photo-restoration talents make it hard to recommend unreservedly, though.

Xerox 6400

Visioneer

★★★★☆

Easy-to-use, high-resolution scanner has limited restoration tools and pokes along.

List: \$180

find.pcworld.com/45298

Like competing scanners from Canon, Epson, and Microtek, the 6400 is a 48-bit-color-depth model featuring one-touch function buttons, a built-in transparency adapter, and a software bundle that includes tools for editing and managing your images. But the USB 2.0-based 6400 is one of the few models in its class (Microtek's \$130 ScanMaker i320 is another) that offer an ultrahigh resolution of 3200 by 6400 dpi, which is great for making huge enlargements from slides.

The shipping version of the 6400 that I tested was a breeze to install and use. In test scans, image quality was generally good overall, but I often obtained even bet-

ter results by adjusting the default settings for contrast, brightness, and saturation.

The 6400's biggest drawback is its plodding performance. For example, it took nearly a minute to scan a color photo at 1200 dpi (Microtek's ScanMaker i320 finished the same scan in 30 seconds).

The 6400 also offers a few photo-restoration tools, such as scratch removal and auto

enhancement—both of which I used to correct prints marred by folds and faded color. Unlike some competing units, however, the 6400 won't allow you to use its tools to correct defects until you've finished scanning an image.

Fussy photo fans who prefer using photo-restoration tricks during scanning may prefer another model. But if restoration isn't your main goal and speed isn't critical, the 6400 may suit your needs.

—Richard Jantz

THE XEROX 6400 has a built-in transparency adapter along with one-touch function buttons.



PHOTOGRAPH: MARC SIMON



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MOBILE PROFESSIONAL

Gear Up!

Mobile professionals should settle for nothing less than the best

For Jason Burgess, the moment is frozen in time, and in embarrassment. The Louisville-based motivational speaker was just starting his presentation before a packed room at a prestigious Miami hotel when the slide projector simply froze. The bulb began to overheat and before his eyes on the big screen behind him, a slide went from yellow to brown to black, and then just disintegrated from the excessive heat.

That was 15 years ago, when mobile professionals had to rely upon static, 35mm slides to entertain and inform the audience. But that experience taught

Burgess a lesson he never forgot.

"Never trust anyone's equipment but your own," says a reflective Burgess. "And seeing

The InFocus LP540 redefines meeting room projection.

that you can only trust yourself, make sure the equipment you bring on the road is second to none in reliability. Make sure it is working properly. It sounds trite, but just imagine how it would feel if the slides you rely on so heavily are no longer available. How many people can carry on without them and still be effective?"

DON'T SKIMP ON QUALITY

Certainly a key element of an effective presentation is world-class projection technology, which is exactly what InFocus Corporation delivers (www.infocus.com).

Consider, for example, the LP540 business projector from InFocus. With its hallmark ease of use, wireless connectivity, flexible networking capabilities, and high-end features, the LP540 redefines meeting room projection and adds style to any business presentation.

The LP540 features a 12-language smart interactive display that quickly gives presenters the working status of the projector in real time so users always know when a bulb needs replacing and when the projector

is ready to be used. Other features include automatic keystone adjustment and automatic image synchronization with a computer. And users can be assured of sharp, crisp screen images with brilliant color saturation owing to the LP540's 1700 lumens. The LP540 also supports InFocus' LiteShow, the secure wireless connectivity solution to safely project ideas and concepts from PCs located anywhere in the projection room.

PERFECT SOLUTION FOR BUSINESSES AND CONSUMERS

And if you are in the market for a projector that offers a lifetime of value, the InFocus X1a offers a combination of image quality, dependability, and flexibility that is unmatched in the industry. In fact, the X1a is designed specifically for small to midsize businesses, SOHO settings, and for educators where convenience, value, and performance matter most.

The X1a weighs in at under 7 pounds yet has exceptional projection quality, making it ideal for uses such as MPEG integration; using QuickTime or Flash files in presentations; showcasing an advertising campaign on DVD; or demonstrating a new Web site. The X1a also boasts a 2000:1 contrast ratio and a 3000-hour lamp life for added value.

Meanwhile, Burgess practices what he preaches as he kicks off his 20th year as an avowed road warrior. He always brings along select information technology tools that keep him connected to the information he needs. These days that means traveling with a lightweight but rugged projector, a smart phone, and a PDA—all of which leverage today's wireless networking technologies for anytime, anywhere performance.

"Do your research carefully and then buy the best," Burgess advises. "That doesn't mean spending the most, bear in mind. Often the most expensive equipment is loaded with features you'll never use. Instead, buy smart."

■ For more information on these outstanding projection products or on other exceptional products, visit www.infocus.com.





When Communication is **CRITICAL**

The right technology is essential.

You have strategies to develop, people to lead, and presentations to share. Sometimes at a moment's notice. At times like these, your technology simply has to deliver. So you continually seek out the innovative tools essential for your company's success. And when it comes to large-format digital projection technology, you turn to InFocus.

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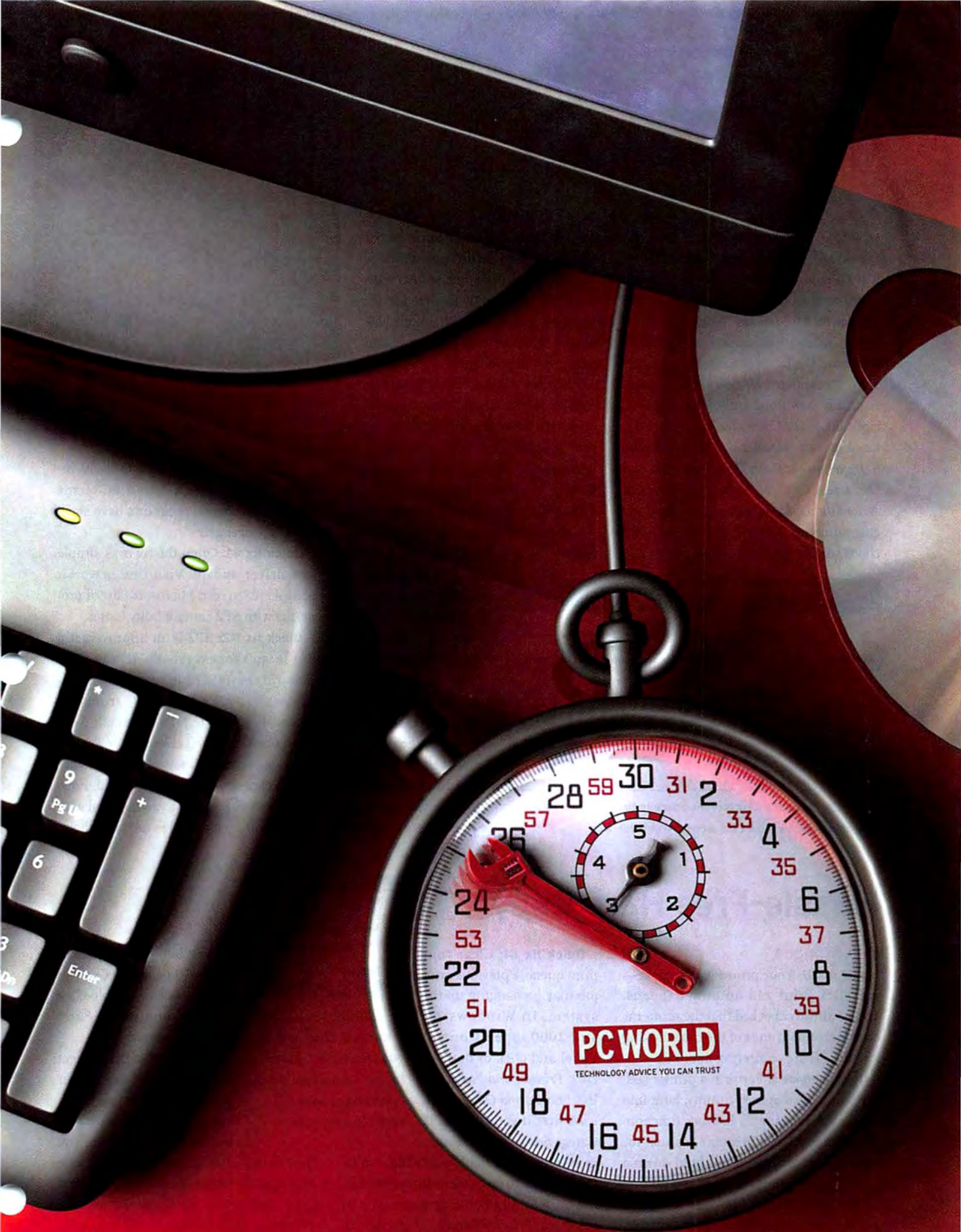
Rapid relief for balky PCs, stuck Windows, stalled networks, recalcitrant printers, and your other everyday computing hassles.

BY KIRK STEERS

IF YOU ASK ME, the worst thing about PCs is that things go wrong more often than Ben Affleck makes bad career choices. The best thing? The machines are usually pretty easy to fix. In fact, you can solve the most common hardware and software problems in just a few

minutes (though the actual repair time will vary from system to system). We've collected 37 lightning-fast fixes for a locked-up PC, a Windows update gone awry, a lost network link, a corrupted Word document, and the other glitches you're most likely to encounter. ►

ILLUSTRATIONS BY JOE ZEFF



Windows Treatments

A Stitch in Time

>> PROBLEM: Windows has become cranky. Sometimes applications don't launch, sometimes programs don't close, and sometimes they just don't work at all.

Quick fix #1: Go to the Windows Update site (windowsupdate.microsoft.com) to download the latest patches for your version. To configure Windows XP to automatically download and install updates, right-click *My Computer*, select *Properties*•*Automatic Updates*, and click *Automatic (recommended)*. In Windows 2000 and Me, open Control Panel, double-click *Automatic Updates*, make sure 'Keep my computer up to date' is checked, and choose one of the three options under Set-

tings. For Windows 98, go to the Windows Update site and download the Critical Update Notification utility.

Most Windows patches deal with security holes, but the update service also adds support for Bluetooth, Wi-Fi, the latest DirectX versions, and other new technologies.

Quick fix #2: Roll back Windows 2000 or XP to the last time your PC worked by launching in Safe Mode. Restart your PC and press <F8> to bring up the Windows Advanced Options. Select *Last Known Good Configuration (your most recent settings that worked)* and press <Enter>.

If that doesn't do the trick, you can restore even earlier settings in Windows

XP and Me by using System Restore. Click *Start*•*All Programs (Programs in Me)*•*Accessories*•*System Tools*•*System Restore* and choose *Restore my computer to an earlier time*. Click *Next*, select a recent date checkpoint (see **FIGURE 1**), and then proceed through the rest of the System Restore wizard.



Bad XP Prescription?

>> PROBLEM: Since you installed Windows XP Service Pack 2, your PC seems slower, and several programs have started acting strangely.

Quick fix #1: Often the fix is as simple as a driver update. Visit find.pcworld.com/45308 to read Microsoft's list of programs with SP2 compatibility issues.

Quick fix #2: SP2 is an improvement, but it isn't for everybody. (Go to find.pcworld.com/45212 to read Scott Spanbauer's "Is XP's Fix Safe?" from last November's issue.) To uninstall SP2, open Control Panel, click *Add or Remove Programs*, choose *Windows XP Service Pack 2*, and click *Remove*. Keep in mind, however, that any programs you installed with SP2 running may need to be reinstalled.

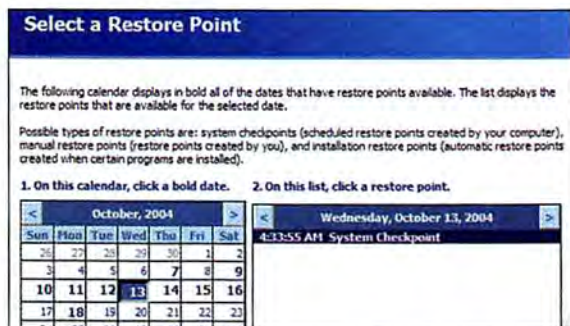


FIGURE 1: Fix your PC by travelling back in time. System Restore rolls back Windows to a time when it was error-free.

Hassle-Free Hard Copy

Bus Stopped

>> PROBLEM: Your printer is comatose—you click Print and nothing happens. You've already checked that the printer is on and that both ends of the cable linking it to the PC are securely connected.

Quick diagnosis: Perform a printer self-test using the diagnostic utility, built into the device, that checks its basic functionality. Refer to your printer's manual for instructions; typically you hold down a button on the printer while it's starting. If the test runs successfully, you know the trouble is with the connection or software.

Quick fix #1: Clear your print queue; a previous print job may be hanging up the system. In Windows XP and 2000, open Control Panel and click or double-click *Printers and Faxes* (select *Printers and Other Hardware* first if you're in XP's Categories view, or *Printers* in 2000). Click or double-click the icon for your printer to open the print-queue window. Clear any pending print jobs by selecting *Printer*•*Cancel All Documents*

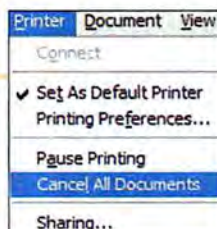


FIGURE 2: Clearing an old print job in the print-queue window may get your balky printer to start running again.

(see **FIGURE 2**). In Windows 98 and Me, open Control Panel, click or double-click *Printers*, and select *Purge Print Documents*.

Quick fix #2: Disconnect and securely reconnect your printer cable. If you're installing a USB printer and it's the first USB device you have used, check its listing in Device Manager for errors. In Windows XP and 2000, right-click *My Computer*, choose *Properties*, click *Hardware*, and select the

Network Reconnections

Severed Server

>> PROBLEM: Your computer suddenly loses its connection to the Internet.

Quick fix: If your PC connects through a Dynamic Host Configuration Protocol (DHCP) server—which means its IP address is automatically assigned by the server—the link between the server and your PC may sometimes become muddled. To restore it in Windows XP and 2000, click *Start•Run*, type `cmd`, and press **<Enter>**. At the command prompt, type `ipconfig /release` and press **<Enter>**. Then type `ipconfig /renew` and press **<Enter>**. For Windows 98 and Me, click *Start•Run*, type `command`, press **<Enter>**, type `winipcfg /release`, press **<Enter>**, type `winipcfg /renew`, and press **<Enter>**.

Home In on Your Wireless Net

>> PROBLEM: Your 802.11b or 11g wireless network worked great for a year but has suddenly slowed to a crawl, for no apparent reason. You've checked every setting and device on the network, and everything's functioning properly.

Quick fix: Other electronic devices may be stepping on your network's signal. Bluetooth networks, wireless telephones, and microwave ovens all operate in the 2.4-GHz frequency range of your network. If your wireless router or access point is located near one of these devices, try placing the products as far from each other as possible. To reduce interference from wireless phones, you can change the channel that your Wi-Fi network uses by going into the setup program for your router or access point.

Not-so-quick fix: Strengthen your Wi-Fi signal with a repeater such as the \$90 Wireless-G Range Expander from Linksys (find pcworld.com/45244; see **FIGURE 3**). If that doesn't work, get a wireless phone that operates at either 900 MHz or 5 GHz, which won't interfere with your network.

FIGURE 3: Improve your wireless signal with Linksys's Wireless-G Range Expander.



Device Manager button. In Windows 98 and Me, right-click *My Computer*, select *Properties*, and click the *Device Manager* tab. Look under the 'Universal Serial Bus controllers' listing for error messages. If you see a question mark, yellow circle, or red X next to the device's listing, you've got trouble. Click the device's name, choose the *General* tab, and look for error messages in the 'Device status' box.

An Uneven Tone

>> PROBLEM: The output from your laser printer is faded on one area of the page.

Quick fix: This commonly happens when the toner in your laser printer's cartridge gets low and becomes unevenly distributed throughout the cartridge. First, remove the cartridge from the printer and hold it level in front of you, with one hand on each end. Now rotate the cartridge slowly as if you were turning the steering wheel of a car, lifting and lowering each end about 4 inches. Doing this four or five times will redistribute the toner and may enable you to squeeze a substantial amount of printing out of the old cartridge before it needs replacement.



FIGURE 4: Your favorite Office app won't start? Fix it by clicking the Repair button.

Office Assistance

First Aid for Office Files

>> PROBLEM: All of a sudden you can't open a file in Word, Excel, Outlook, or another Microsoft Office application.

Quick fix #1: Click *Help•Detect and Repair* to launch a file-repair utility. Make sure 'Discard my customized settings and restore default settings' is unchecked, and click *Start*. If a file has been corrupted or something else is out of place, the program fixes the damage. Have your Office installation CD handy before you begin.

Quick fix #2: If an Office application won't start, open *Control Panel* and click or double-click *Add or Remove Programs*. Select the entry for Microsoft Office and then choose *Click here for support information*. Click *Repair* to reinstall all the apps (see **FIGURE 4**).

File Saver

>> PROBLEM: Sometimes your Word file opens but contains gibberish, and other times it doesn't open at all.

Quick fix: In Word 2002 and 2003, select *File•Open*, click the down arrow next to the *Open* button in the bottom-right corner, and select *Open and Repair*. If these steps don't repair the document, cut all its contents except the last paragraph mark, and paste them into a blank document. If this also fails, select *File•Open*, and in the 'Files of type' box, click *Recover Text from Any File (*.*)*. Then click *Open*. This recovers only the text without the formatting. If Word still can't open the file, click *Tools•Options•General*, check *Confirm conversion at Open*, click *OK*, and use the 'Recover Text' option again. ▶

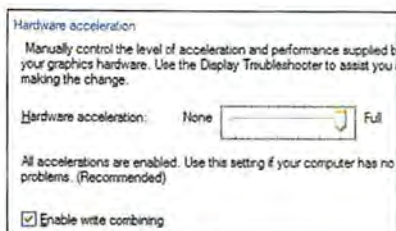


FIGURE 5: Fix a flaky mouse by slowing graphics hardware acceleration in Windows.

Keep the Input Flowing

Slow and Steady

>> PROBLEM: Your mouse pointer pops up all over the screen, like the target in a game of whack-a-mole.

Quick fix: You may have a conflict with graphics hardware acceleration. Right-click the desktop, choose *Properties•Settings•Advanced•Troubleshooting*, and select *Troubleshoot* in XP or *Performance* in 98 and Me. Move the slider next to 'Hardware acceleration' one notch to the left (see FIGURE 5). If your mouse now works fine, you can keep the setting there, but be aware that you've turned off some of the hardware-acceleration features that Windows uses to speed graphics.

Not-so-quick fix: To get rid of the conflict without slowing down your hardware, look for and install updated drivers for your graphics card and mouse.

Fluid Keystrokes

>> PROBLEM: You just spilled a cup of coffee on your keyboard.

Quick fix: First, switch to decaf. Then unplug the keyboard as quickly as possible and turn it upside down to keep the liquid from penetrating the keyboard's case. Let the keyboard dry for a few hours. (Okay, maybe that's not so quick, but it's probably faster than replacing a fried keyboard.) You can hasten the drying process with a fan or hair dryer, but don't use the dryer's warm or hot settings. For sticky liquids, pop the keys off one at a time by putting gentle upward pressure on both sides of each key, and clean it. Note that the spacebar, <Backspace>, <Shift>, and other large keys can be difficult to replace.

Get the Messages

Unwanted Protection

>> PROBLEM: Outlook and Outlook Express have gone Big Brother on you, preventing you from downloading program files and other e-mail attachments.

Quick fix #1: By default, recent versions of Outlook block you from opening certain types of attachments—including .exe and .vbs files—that are capable of infecting your PC with a virus or another intruder. To change this setting in Outlook, select *Tools•Options•Mail Setup•Send/Receive•Edit•Download complete item including attachments*. Another approach is to use the free Attachment Options utility; it gives you more granular control, letting you specify which types of attachments should be allowed to download with the message. Visit find.pcworld.com/45236 for the utility download.

Quick fix #2: If you are suffering the same restrictions in Outlook Express 6, the fix is simpler. Choose *Tools•Options•Security* and uncheck *Do not allow attachments to be saved or opened that could potentially be a virus* (see FIGURE 6).

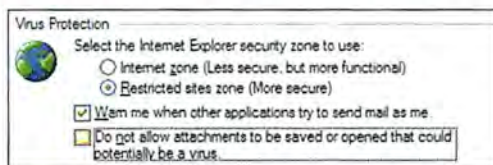


FIGURE 6: Take control of which attachments you can open in Outlook Express by unchecking this option.

PC Remedies

'It's Dead, Jim!'

>> PROBLEM: You turn on your PC and nothing happens; your screen is blank.

Quick diagnosis #1: Listen to your system. Do you hear the power supply fan or hard disk spinning? If all is quiet on the PC front, your machine may not be getting power.

Quick fix: Make sure both ends of the power cables to your PC and monitor are firmly seated in their sockets. Confirm that your surge protector is switched on; some protectors have fuses or circuit breakers that get tripped accidentally. Verify that the surge protector hasn't been zapped by an overcharge. If it has, you need a new one—even if the old device still powers your equipment—because you've lost your surge protection.

Not-so-quick fix: Test your PC's power supply with Antec's \$15 ATX Power Supply Tester (find.pcworld.com/45200; see FIGURE 7). If the power supply is bad, replace it.

Quick diagnosis #2: The disk whirs and the supply hums, but the monitor stays dark.

Quick fix: Your display's brightness and contrast settings may have been set inadvertently to their highest or lowest level, blanking your screen.

Not-so-quick fix: Connect your monitor to another PC or to a notebook computer. If the monitor works, the problem is with your PC or its graphics card. If it doesn't, it's time for a new display. If your hard disk, power supply, and monitor all check out, then you've left the realm of fast fixes.

Get a technician on the phone, or call your local PC repair shop to schedule a drop-off or a tech house call.



FIGURE 7: Antec's ATX Power Supply Tester.

Recasting the Web

Room for a View

>> PROBLEM: Your Internet Explorer 6 browser window is crowded with toolbars.

Quick fix #1: Make all your toolbars and the Windows taskbar disappear temporarily by pressing <F11>; this view is handy for displaying large images and Web pages that don't fit in a single cramped browser window. Press <F11> again to restore the toolbars and taskbar. To disable a toolbar, right-click it and uncheck its entry. (You

may have to uncheck 'Lock the Toolbars' first.)

Quick fix #2: Fit more toolbars on a single line: Right-click anywhere in the toolbar and confirm

that 'Lock the Toolbars' is unchecked. Place your mouse pointer on the vertical dotted line at the left end of the toolbar and drag it to the top of the screen. Slide each toolbar sideways to expose as many of its options as desired. Click the two greater-than symbols to expose any hidden icons. To make your browser toolbar even smaller, right-click it, choose *Customize*, select *No text labels* under 'Text options', and choose *Small icons* under 'Icon options' (see FIGURE 8).

Show Me the Way Home

>> PROBLEM: Your browser opens to a Web site you've never heard of rather than the one you set as your home page.

Quick fix: Download and run two free spyware detectors: Ad-Aware and Spybot Search & Destroy. Visit find.pcworld.com/45218 for the two downloads, or go to find.pcworld.com/45310 for the trial version of the \$40 PestPatrol. Browse to find.pcworld.com/45222 to read *Security Tips* columnist Andrew Brandt's advice from last October for combating spyware and other uninvited Internet pests.

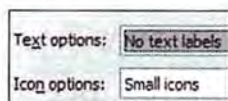


FIGURE 8: Save space in your IE browser toolbars by choosing 'No text labels' and 'Small icons'.



Balm for Your Handheld

Got Juice?

>> PROBLEM: Your PDA is running out of power, and there's no outlet to charge it.

Quick fix: Extend your PDA's battery life by conserving energy. If it has a monochrome screen, turn down or turn off the backlighting; if it has a color screen, use the dimmest setting you can tolerate. Shorten the idle time before the device automatically shuts down, and configure it to run as few applications as possible; the more running programs, the faster power dissipates. Reduce the frequency of automatic tasks such as checking your e-mail. And a Wi-Fi, Bluetooth, or cell-phone hybrid PDA is constantly scanning for signals, so if you have one, look in its controls or setup options for a way to minimize or completely shut down these functions when the device is not in use.

Slightly cumbersome fix: If your PDA uses removable batteries, carry an extra set. If it uses a rechargeable battery, bring a charger along. Chances are your PDA manufacturer offers portable devices for charging your unit in cars, planes, and other places.

Alternatively, you can use a battery extender to breathe new life into a drained PDA. The \$23 Emergency 9-Volt Power Adapter from Belkin (find.pcworld.com/45224) takes power from a standard 9-volt battery and runs or recharges your PDA (see FIGURE 9).

Get Yourself Connected

>> PROBLEM: Sometimes Windows XP doesn't recognize your Pocket PC device when you disconnect the handheld from the USB port and then reconnect it. This also happens when you turn the PDA off and on while it's connected to your PC.

Quick fix: This is a known problem in the Windows XP and 2000 operating systems, but Microsoft provides a fix: A software patch for each version of Windows is available from the Microsoft Download Center (find.pcworld.com/45312).

Your HotSync Has Sunk

>> PROBLEM: You can't hot-sync your PalmOne PDA.

Quick fix #1: Is the HotSync Manager running on your PC? Also, make sure your PDA cradle's connections are good.

Quick fix #2: A soft reset can fix all kinds of pesky problems. Gently press the reset button inside the hole on the back panel of your device, using an unfolded paper clip or your stylus. You'll have to reset its time and date.

Not-so-quick fix: If a soft reset doesn't handle the problem, try a system reset, an in-cradle reset, a power-down reset—or in the worst case, a hard reset, which erases all data and programs. See find.pcworld.com/45330 for more info. ▶



FIGURE 9: Belkin's Emergency 9-Volt adapter.

Sweet Sounds, Pretty Pictures

One Man's Whisper

>> PROBLEM: The audio CDs you make using Windows Media Player 9 blow out eardrums: One song whispers, and the next one screams.

Quick fix: The TweakMP Powertoy for Windows XP offers a number of useful tools for squeezing the most out of Windows Media Player 9. One of my favorites automatically evens the volume levels across different songs when you create an audio CD.

TweakMP is free, but while Microsoft created it, the company does not support it. Visit find.pcworld.com/45230 for the download. If you don't have Windows Media Player 9, you can download that program for free as well (find.pcworld.com/45232).

FIGURE 10: APC's USB Mobile Phone Charger.

Notebook as Cell Charger

>> PROBLEM: You'd like to charge your cell phone anytime, anywhere.

Quick fix: As long as you have a charged laptop PC with you, you can. USB cell-phone chargers draw current from the notebook's USB port, so you don't need any bulky power transformers. Devices such as the \$20 USB Mobile Phone Charger from APC (find.pcworld.com/45234; see FIGURE 10) coil up nice and snug to fit comfortably in a briefcase compartment or coat pocket. APC and other vendors sell a wide selection of chargers for many of today's popular cell phone models.

Optical Drive-Bys

Silence Isn't Golden

>> PROBLEM: Audio CDs won't play from your PC's optical drive.

Quick diagnosis: If your drive has a headphone jack on its face—usually just below the tray—plug in headphones, adjust the volume control next to the jack to a midrange setting, and play an audio CD. If you hear music, the drive is working.

Quick fix: Check the volume controls on your system's speakers, on the drive itself in Windows' Volume Control, and in the media player software. Double-click the speaker icon in your system tray, or click **Start**•**Programs** (All Programs in XP)•**Accessories**•**Entertainment**•**Volume Control**, and make sure that the Mute option in each category is unchecked (see FIGURE 11).

Not-so-quick fix: The audio signal from a CD travels from the drive to the sound card (or to the sound chip integrated on the motherboard) via a small cable—not the power cable or EIDE cable. Make sure this cable is securely connected at both ends.

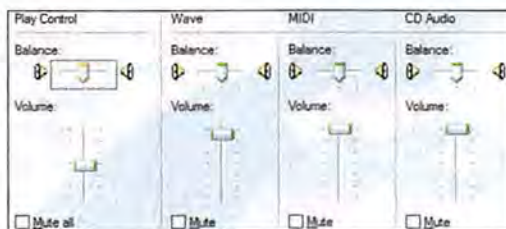


FIGURE 11: Windows' Volume Control is just one of the volume settings to check when fixing PC sound problems.

List All Modes

List of valid modes

800 by 600, High Color (16 bit), 60 Hertz
800 by 600, High Color (16 bit), 75 Hertz
1024 by 768, High Color (16 bit), 60 Hertz
1024 by 768, High Color (16 bit), 75 Hertz
640 by 480, True Color (32 bit), 60 Hertz
640 by 480, True Color (32 bit), 75 Hertz
800 by 600, True Color (32 bit), 60 Hertz
800 by 600, True Color (32 bit), 75 Hertz
1024 by 768, True Color (32 bit), 60 Hertz
1024 by 768, True Color (32 bit), 75 Hertz

FIGURE 12: Find the best refresh rate, resolution, and color-depth combination for your PC in Windows' Display Settings.

Looks Matter

Make Type Perfectly Clear

>> PROBLEM: The text on your LCD monitor looks coarse and indistinct.

Quick fix: In Windows XP, enable ClearType fonts. Right-click the desktop and then choose **Properties**•**Appearance**•**Effects**. Check *Use the following method to smooth edges of screen fonts* and select **ClearType** in the drop-down menu below it. In Windows 98, Me, and 2000, right-click the desktop, choose **Properties**•**Effects**, and check *Smooth edges of screen fonts*.

My Friend Flicker

>> PROBLEM: Your monitor has a slight flickering that tires your eyes.

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You may be able to set an even higher rate in Windows XP and 2000 by lowering your resolution and/or color depth. Click **Adapter**•**List All Modes** to see the refresh rates, screen resolutions, and color depths that your PC supports (see FIGURE 12).

Kirk Steers writes the Hardware Tips column for PC World.



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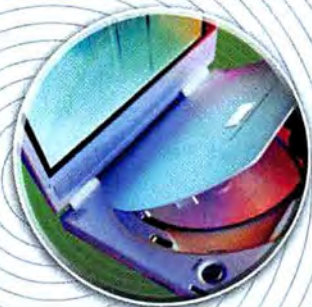
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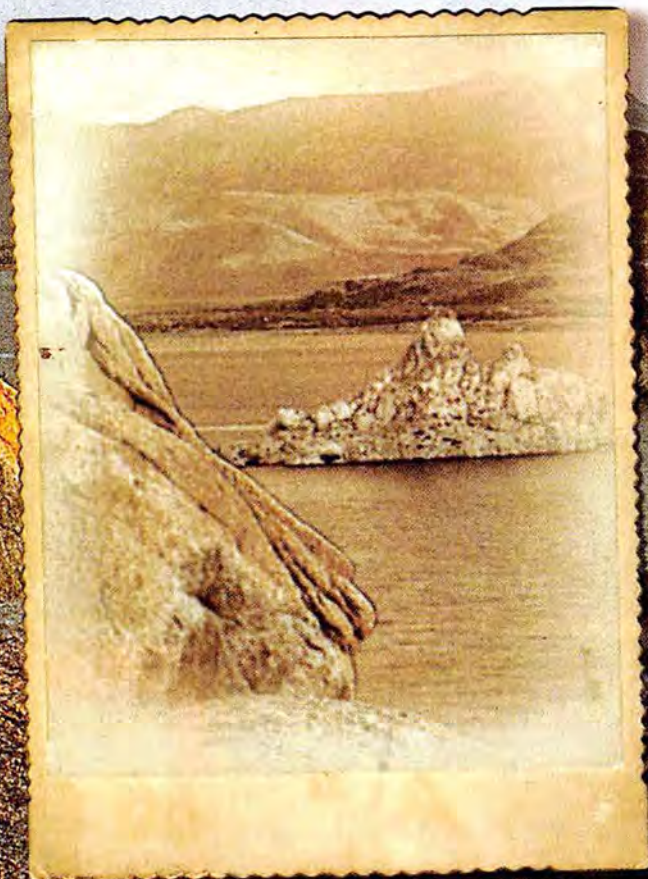
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Entertainment PCs

PCs are getting better than ever at tuning in TV, burning movies, playing music, and showing off photos. We test nine versatile new Windows Media Center machines. ►

BY CARLA THORNTON | PHOTOGRAPHS BY KEVIN CANDLAND

Take Center Stage



The image displays three different compact PC models side-by-side. On the left is the HP Media Center PC m1190n, a black and silver minitower with multiple drive bays and an HP logo. In the center is the Sys Technology MediaMax 'shoe box', a small black cube-shaped PC with a silver front panel featuring a digital display showing '10.7.7' and '3.20', and various control buttons. On the right is the Alienware DHS 5 component, a black rectangular unit with a silver front panel, a large circular volume knob, and a small digital display showing the date and time: '11/05/2004 FRI 12:06:26 PM'.

CHOOSE YOUR FAVORITE SIZE: HP's Media Center PC M1050y minitower, Sys Technology's MediaMax "shoe box," and Alienware's DHS 5 component.

KICK OFF YOUR SHOES, settle back on the sofa with the remote control, and turn on your PC. Yes, your PC. Loaded with Microsoft's Windows XP Media Center Edition 2005 operating system, members of a new class of PC-based leisure machines promise to serve as your PC and home entertainment center rolled into one. A Media Center system lets you listen to radio, play CDs, watch DVD movies (or movies you've downloaded from the Internet), and view and record live TV. And you can get some work done, too, with a wireless mouse and keyboard.

Windows Media Center Edition is lots of fun to use—it's difficult to resist an interface that ties together so many pleasant diversions. Pausing

and recording live TV à la TiVo is a snap, as is arranging your digital photos in a slide show while a CD plays in the background. With the 2005 version you can watch one channel while recording another (or record two at once)—a big improvement. You also get a simple disc-creation program that enables you to burn songs, pictures, or TV shows onto a DVD right from within Media Center. The operating system's inviting main menu, which lists all your entertainment options—Play DVD, My Videos, My Pictures, My TV, My Music, and Radio—has not changed much from the previous version's. Neither has the pleasingly fluid way that Media Center moves between entertainment areas and responds to the remote.

We did experience a few disappointments with the OS, however. Inexplicable tinkering with submenus has made some of the applications harder to use. For example, you now have to leave Radio and drill down two menus under Settings to delete a preset station, a simple chore that you should be able to perform on the Radio screen. In My TV, you can no longer see the Record and Guide menu choices conveniently alongside a live window.

Media Center Edition needs additional fine-tuning, including a forward button for times when you hit the back arrow once too often. In addition, Media Center's refusal to notify you when TV listings have finished downloading from the Internet is annoying, and applications occasionally trip over one another. For in-

stance, CDs stop playing when you attempt to configure a network connection.

Should you make the leap to a Media Center PC, firing your DVD player, stereo receiver, and TiVo and putting all your entertainment eggs in one basket? These are PCs, after all. Will you be upset when a hard drive malfunction or system crash results in the loss of a month's worth of recorded *Law & Order* episodes? Will you be able to concentrate on *The Shawshank Redemption* while conscious that an unsaved spreadsheet lies waiting on the

screen underneath? You can't upgrade your TV as you can a PC, but you don't have to protect it against viruses, either.

If you're a trailblazer or if you own an old stereo and TV and have yet to buy a TiVo box, one of these PCs could be an adventure worth embarking on. Just don't forget that you'll want a broadband connection and, ideally, a home network to realize its media-sharing potential.

SEVERAL SHAPES AND SIZES

HOME ENTERTAINMENT PCs come in a variety of forms. Six of the nine systems we reviewed for this roundup are designed to look like electronics components rather than like desktop systems. Alienware's DHS 5, CyberPower's Media Center PC Limited Edition, and IBuyPower's Media-XP are handsome black boxes. ZT Group's Cisnet Media Center PC X6534 is a large brushed-chrome unit that's somewhere between a component and a desktop in size. Meanwhile, the Shuttle Computer XPC G5 8300MC and the Sys Technology MediaMax take a different tack, resembling large shoe boxes. None approaches the sleekness of a new DVD player, but

NEW WINDOWS FOR YOUR MEDIA CENTER PC



WINDOWS XP MEDIA CENTER EDITION 2005 is the latest version of Microsoft's entertainment operating system. For more information on this new OS that's ready to do the heavy lifting in your living room, go to find.pcworld.com/45566.

any of these units will look right at home in your living room. And only the hum of their system fans will give them away.

TRADITIONAL TOWERS

WE ALSO TOOK A LOOK at three units with traditional PC designs: the Gateway 820GM, a tower; and the HP Media Center PC M1050y and Medion M3Director 5100, both minitowers. Décor-wise, these machines may make more sense in a den or home office. But the well-mannered

Gateway—the quietest of the nine by far—could go in any part of your house.

All of the units we saw are powerful PCs equipped with fast Pentium 4 or Athlon processors, at least 512MB of memory, large hard drives, high-end graphics cards, multiformat DVD burners, memory card readers, and all the usual ports. These Media Center PCs earn their entertainment stripes by coming preinstalled with Windows Media Center Edition 2005 and a built-in TV/FM radio tuner card.

They have tons of audio and video ports—many have not only VGA and FireWire but also S/PDIF, S-Video, DVI, composite, and component video—to connect the latest equipment, from your camcorder to a plasma TV. Finally, to direct the action, each system comes with a remote control and an infrared receiver, usually a small USB unit. The latter includes infrared blaster cables that you affix to your cable box so you can change stations through the Media Center interface. ▶

TOP 100

TEST Center

ENTERTAINMENT PCs

HP AND GATEWAY SYSTEMS EARN BEST BUYS among these units, all of which run Windows XP Media Center Edition 2005.

	MEDIA CENTER PC	Features and specifications	Performance	Bottom line	
1	Alienware DHS 5 \$5578 (★★★★☆) find.pcworld.com/45194	<ul style="list-style-type: none">• 30-inch LCD TV• 128MB ATI Radeon 9800 Pro graphics• Klipsch ProMedia Ultra 5.1 speakers	<ul style="list-style-type: none">• 2.2-GHz Athlon 64 3500+• 512MB RAM• 250GB hard drive• 4X DVD±RW/-RAM drive	<ul style="list-style-type: none">• WorldBench 5 score: 92• Graphics: Outstanding• Sound: Outstanding• Design: Outstanding	The DHS 5 is our favorite full-size PC with a stereo-component design style. The high cost is due to the terrific LCD TV, which sells for \$3450 alone.
2	HP Media Center PC M1050y Best Buy \$5025 (★★★★☆) find.pcworld.com/45242	<ul style="list-style-type: none">• 23-inch LCD monitor• 256MB ATI Radeon X600 graphics• Klipsch ProMedia Ultra 5.1 speakers	<ul style="list-style-type: none">• 3.8-GHz Pentium 4 570• 1GB RAM• 400GB hard drive• 16X DVD±RW, 16X DVD-ROM drives	<ul style="list-style-type: none">• WorldBench 5 score: 96• Graphics: Very Good• Sound: Very Good• Design: Very Good	This well-equipped unit makes it simple for consumers who want to ease into the world of entertainment PCs. The fine monitor contributes \$2000 to the total.
3	Gateway 820GM Best Buy \$1650 (★★★★☆) find.pcworld.com/45196	<ul style="list-style-type: none">• 17-inch LCD monitor• 128MB ATI Radeon X300SE graphics• Gateway G-Max 2000 speakers	<ul style="list-style-type: none">• 3-GHz Pentium 4 530• 1GB RAM• 250GB hard drive• 12X DVD±RW drive	<ul style="list-style-type: none">• WorldBench 5 score: 90• Graphics: Very Good• Sound: Very Good• Design: Outstanding	Our second Best Buy has an attractive 17-inch LCD and 5.1 speakers. The 820GM is easily the quietest entertainment PC we tested for this roundup.
4	Sys Technology MediaMax \$1390 (★★★★☆) find.pcworld.com/45208	<ul style="list-style-type: none">• 17-inch LCD monitor• 128MB PNY Verto GeForce FX 5200 AGP graphics• Altec Lansing 120 speakers	<ul style="list-style-type: none">• 3.2-GHz Pentium 4 540• 512MB RAM• 120GB hard drive• 12X DVD±RW drive	<ul style="list-style-type: none">• WorldBench 5 score: 84• Graphics: Very Good• Sound: Very Good• Design: Very Good	The MediaMax looks more like a stereo component than any other PC here does, and it offers the bonus of stand-alone radio, DVD, and CD options.
5	Medion M3Director 5100 \$1599 (★★★★☆) find.pcworld.com/45250	<ul style="list-style-type: none">• 19-inch LCD monitor• 128MB NVIDIA GeForce FX 5300 graphics• Medion Flat Speakers 2018 speakers	<ul style="list-style-type: none">• 3-GHz Pentium 4 530• 512MB RAM• 200GB hard drive• 12X DVD±RW, 16X DVD-ROM drives	<ul style="list-style-type: none">• WorldBench 5 score: 80• Graphics: Good• Sound: Good• Design: Very Good	Available at Best Buy and Costco, this inexpensive minitower system covers the basics well. Only relatively slow performance holds it back.
6	CyberPower Media Center PC Limited Edition \$1769 (★★★★☆) find.pcworld.com/45228	<ul style="list-style-type: none">• 17-inch LCD monitor• 128MB NVIDIA GeForce 6600 GT graphics• Logitech Z-640 speakers	<ul style="list-style-type: none">• 3.4-GHz Pentium 4 550• 1GB RAM• 120GB hard drive• 16X DVD±RW, 16X DVD-ROM drives	<ul style="list-style-type: none">• WorldBench 5 score: 88• Graphics: Outstanding• Sound: Outstanding• Design: Very Good	The black aluminum case looks great in a living room, but the loud fans will make you think twice before installing this otherwise competent system there.
7	ZT Group Cisnet Media Center PC X6534 \$2599 (★★★★☆) find.pcworld.com/45252	<ul style="list-style-type: none">• 19-inch LCD monitor• 256MB ATI Radeon X700 graphics• Logitech Z-5300 speakers	<ul style="list-style-type: none">• 3.2-GHz Pentium 4 540• 1GB RAM• 160GB hard drive• 16X DVD±RW drive	<ul style="list-style-type: none">• WorldBench 5 score: 93• Graphics: Outstanding• Sound: Outstanding• Design: Very Good	This large, showy system runs a little too loudly for a quiet room, but it would work fine in a part of the house where you won't mind the slightly whiny fan.
8	IBuyPower Media-XP \$2247 (★★★☆☆) find.pcworld.com/45246	<ul style="list-style-type: none">• 19-inch LCD monitor• 128MB NVIDIA GeForce 6600 graphics• Creative Inspire P7800 speakers	<ul style="list-style-type: none">• 3.4-GHz Pentium 4 550• 1GB RAM• 250GB hard drive• 16X DVD±RW drive	<ul style="list-style-type: none">• WorldBench 5 score: 92• Graphics: Outstanding• Sound: Outstanding• Design: Very Good	Quiet and great-looking, this black-aluminum PC could pass for a stereo component, but it lacks the extras that would propel it to the top of our chart.
9	Shuttle Computer XPC G5 8300MC \$3037 (★★★☆☆) find.pcworld.com/45254	<ul style="list-style-type: none">• 17-inch LCD monitor• 256MB ATI Radeon X700 graphics• Logitech Z-680 speakers	<ul style="list-style-type: none">• 3.4-GHz Pentium 4 550• 1GB RAM• 250GB hard drive• 16X DVD±RW drive	<ul style="list-style-type: none">• WorldBench 5 score: 88• Graphics: Outstanding• Sound: Outstanding• Design: Good	A shoe box-size entertainment PC, Shuttle's XPC G5 8300MC can fit into spaces where larger units would never go. It's not very expandable, however.

CHART NOTE: Go to find.pcworld.com/10860 for details on PC World's Star Ratings. Go to find.pcworld.com/45362 for more information on products in this chart.

You shouldn't have a problem setting up the hardware for any of these entertainment PCs; the task isn't any more difficult than installing a VCR. The biggest hassle we encountered involved mapping the Media Center remotes to our Comcast satellite-TV box, a long and tedious process. Only two of the systems, the Alienware DHS 5 and the HP Media Center PC M1050y, had manuals that fully document how to set up the system, including how to integrate the PC into an existing TV-VCR-satellite arrangement. Clearly, most vendors expect buyers to be savvy PC users who can work with the software, rather than consumers who merely want a PC-based entertainment box.

We saw a range in performance scores. The HP Media Center PC M1050y, which came equipped with a 3.8-GHz Pentium 4 570 processor, was the top performer, earning a WorldBench 5 score of 96. Medion's M3Director 5100—which had the slowest CPU, a 3-GHz Pentium 4 530—got a mark of 80, about 17 percent less.

We noticed a clear difference in how the PCs handled radio tuning. Only the Sys Technology MediaMax's seek time was as fast as a traditional stereo's. The CyberPower and ZT Group PCs were almost as snappy, but the rest were excruciatingly slow, often taking up to 20 seconds to find the next station. Typing in a station and saving it as a preset worked much better.

YOU'LL FIND THAT SETTING UP A MEDIA CENTER PC ISN'T ANY MORE DIFFICULT THAN INSTALLING A VCR.

Speaking of entertainment options, we also checked out a Media Center laptop from Toshiba (see page 82) and a gaming system from Compaq (see page 88).

Alienware DHS 5

★★★★★

FROM THE COMPANY best known for branding its PCs with images of little green men comes the Alienware DHS 5, the most conservative-looking unit in our roundup. An imposing black box 17 inch-



es wide, 5.25 inches tall, and 18 inches long, the DHS 5 is slightly larger than a VCR; but it's a handsome PC that would look good in any room of the house. The front features a blue-ringed power button and a slot-fed multifunction DVD burner that also supports DVD-RAM. An LCD displays the time and date or the current music CD track. Front connections—

including an eight-in-one memory card reader, two of the PC's six USB ports, and a FireWire port—lie behind one spring-loaded door that blends seamlessly with the case. The rear provides the standard PC and entertainment connections, including coaxial TV, FM, DVI, and S/PDIF ports. One drawback is slow radio tuning, which plagued many of the units we saw.

The wireless remote receivers on most competing systems are separate USB units that dangle off the PC; but the DHS

5's sensor is built in, with two rear infrared blaster ports. The wireless Gyration keyboard we received, however, was too small for comfortable typing. Equipped with a 2.2-GHz Athlon 64 3500+ processor, 512MB of RAM, and a 250GB hard drive, the DHS 5 performed well in our speed tests, earning a WorldBench 5 score of 92—just 4 percent slower than the 96 claimed by this roundup's top performer, the HP Media Center PC M1050y, with its 3.8-GHz Pentium 4 570 CPU. The DHS 5 comes with a good user manual, a rarity among this group of entertainment PCs. Finally, Alienware went all out by including an outstanding 30-inch BenQ DV3070 LCD monitor with the DHS 5; the display adds \$3450 to the package's \$5578 price. find.pcworld.com/45194

CyberPower Media Center PC Limited Edition

★★★★☆

A BLACK ALUMINUM CASE with a concave front makes the CyberPower Media Center PC Limited Edition resemble an oversize CD player—not a bad im-

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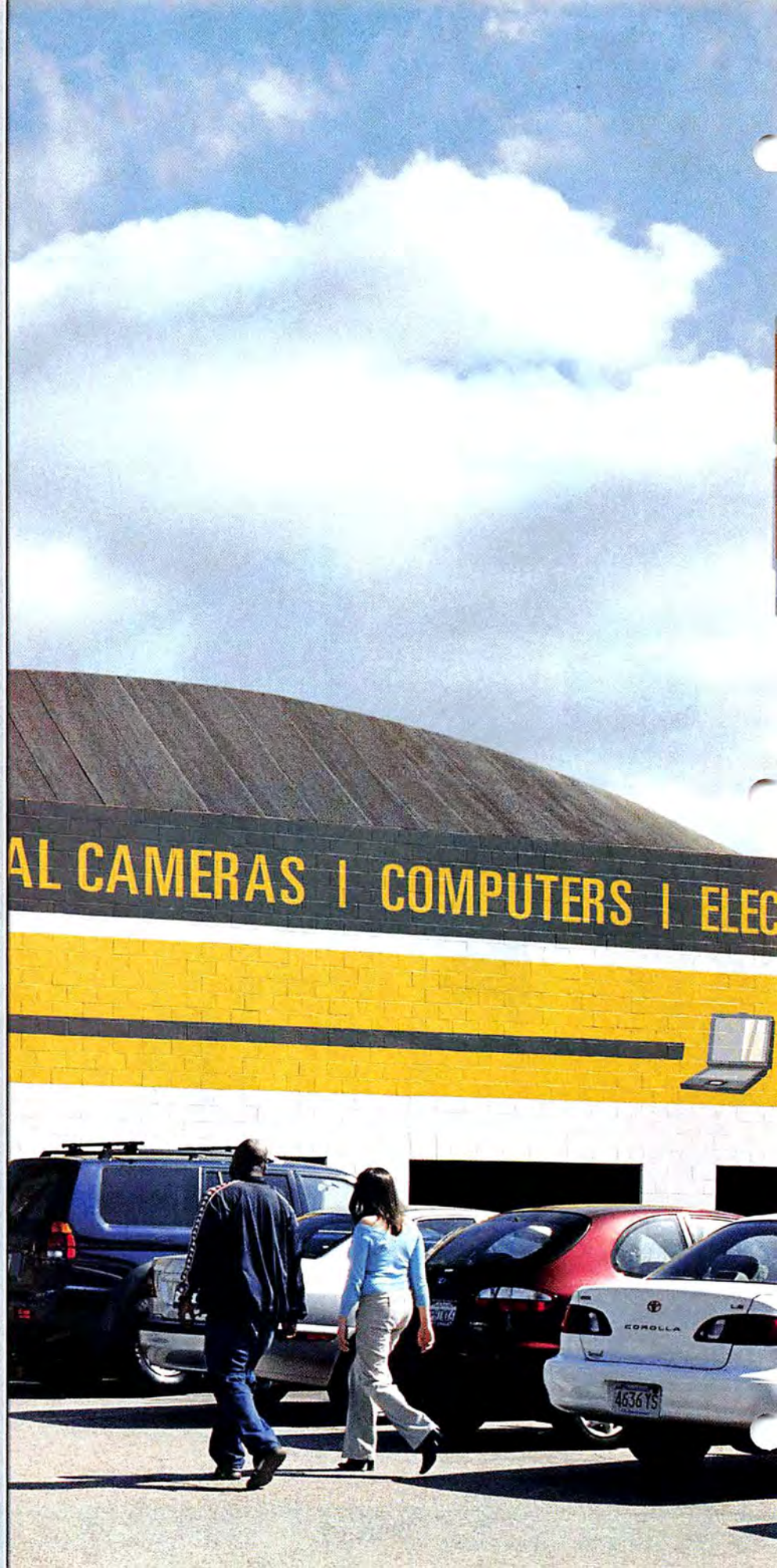


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pression for a system to convey when it has living-room ambitions. Measuring 6.75 inches tall, 16.75 inches wide, and 16.25 inches long, it shares this look with the iBuyPower Media-XP. On the front, a couple of inconspicuous spring-loaded panels conceal two of the unit's six USB ports, a multiformat DVD burner stacked atop a separate 16X DVD-ROM drive, and a seven-in-one memory card reader. The rear holds numerous standard PC and audio/video-in and -out connections.

Besides blending nicely with other components, the CyberPower handled Media Center applications with aplomb. Aided in our speed tests by a 3.4-GHz Pentium 4 550 processor and 1GB of RAM, the Limited Edition missed this roundup's median mark by only 2 percent, with a WorldBench 5 score of 88. We found that the TV and FM tuners worked well. This PC was one of the few in the group to provide quick FM tuning and a basic antenna, which you'll need to pick up radio sig-

nals. Only a couple of seconds elapsed between seeks, making the task of browsing stations a lot less painful than on most of the other entertainment PCs we tested.

The only major problem with placing

hybrid you'd want in your wall unit. Unfortunately, it probably wouldn't fit. Only lovers of muscle PCs are likely to be attracted by the look of this system's clunky tower case, which holds the big, slow-

THOUGH IT'S WONDERFULLY QUIET, GATEWAY'S 820GM IS JUST A BIT TOO LARGE FOR THE LIVING ROOM.

the CyberPower in your living room: its noise level. Use it there, and others within earshot may find the loud fans annoying.

The system's reasonable \$1769 price covers a 17-inch New Universe QL-711V LCD monitor, two optical drives, and a floppy drive. find.pcworld.com/45228

Gateway 820GM

★★★★☆

Best BUY WITH PRACTICALLY soundless operation, the Gateway 820GM seems just the kind of PC/entertainment

moving fans that make it so quiet. Nevertheless, for the office or family room, the 820GM is an excellent choice.

Our well-equipped \$1650 test unit came with a multiformat DVD burner stacked atop a CD-ROM drive and an eight-in-one memory card reader. The 820GM tops all the other PCs here with seven USB ports, offering one on the front along with two FireWire ports and headphone and microphone jacks. On our tests the 820GM, with a 3-GHz Pentium 4 530 processor and 1GB of RAM, earned a WorldBench 5 score of 90; that was the median score for this group and just 6 percent slower than the fastest machine's mark.

Our 820GM came with a handsome black-and-silver 17-inch FPD 1750 LCD monitor and a multimedia keyboard with useful word processing and Internet navigation buttons. We liked the straightforward layout of the Gateway-branded Media Center remote control, which places all the major functions in the two top rows. The unit's 5.1-channel speakers performed well. Like most of the other PCs here, however, the 820GM has a slow radio tuner; it also lacks a DVI connection for a digital LCD. find.pcworld.com/45196

HP Media Center PC M1050y

★★★★☆

Best BUY A SILVER MINITOWER with a black front panel, the HP Media Center PC M1050y is a top-notch entertainment center for displaying photos, watching television, and playing games in your den or home office, especially if you favor—or already have—HP peripherals.

The excellent manual makes setup easy, showing how to connect the PC to ►

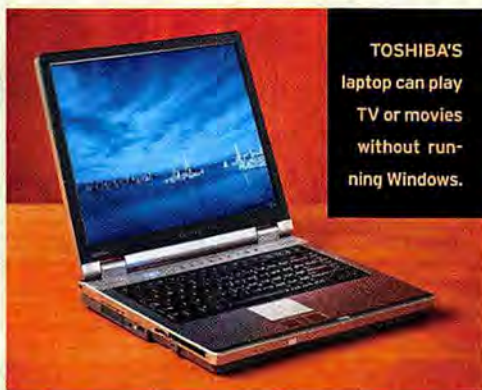
MEDIA CENTER LAPTOP

Mobile TV? Record and Take Along Your Faves With Toshiba's Qosmio E15

★★★★☆

HANKERING to take your recorded TV programs with you when you travel? Toshiba's \$2600 Qosmio E15 offers several advantages over any competing Windows XP Media Center Edition laptop we've seen. First, the TV tuner is built in, rather than added via a swappable bay module (although you do have to keep track of a short adapter cable for the coaxial connection). Second, you can watch live TV (but not pause or record it) or a DVD movie without starting Windows. The sound is terrific for a laptop, thanks to a robust set of Harman/Kardon speakers embedded in the upper corners of the keyboard.

The 7.9-pound Qosmio has most of the audio and video ports needed to connect other equipment, including the high-quality component ports, but you have to use the dongles that Toshiba provides. You also get S-Video-in and -out connections and a FireWire port; but the system has no DVI port for digital LCDs. A multiformat DVD burner is fixed on the right side. Our only complaint: The TV card lacks an FM tuner. find.pcworld.com/45360



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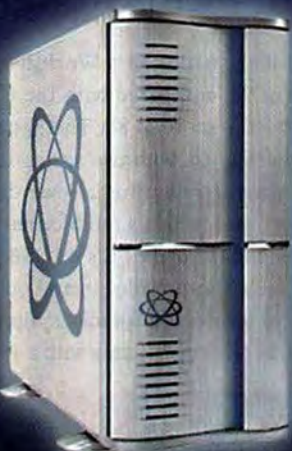
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Television looked really good on the bundled 23-inch HP F2304 flat screen, using the M1050y's DVI connection, although the fine monitor raises the overall price to \$5025. And the Klipsch ProMedia Ultra 5.1 speakers rocked along.

On the front of the unit, in addition to the eight-in-one memory-card reader, you'll find the Personal Media Drive bay, an internal dock for adding HP's 160GB removable hard drive (\$219 extra). The drive can serve as secondary internal stor-

either would look good in a wall unit, provided that you can spare a shelf at least 6.75 inches tall, 16.75 inches wide, and 16.25 inches deep, plus breathing room. The Media-XP we tested, however, lacked the second optical drive, the floppy drive, and the superior radio tuner of the CyberPower Media Center PC.

Nonetheless, the Media-XP offers a few advantages. For one thing, it's a quieter machine, an important consideration for the living room. In our speed tests, the Media-XP enjoyed a slight performance

ViewSonic Q190mb flat-panel monitor, plus a ViewSonic multimedia keyboard and optical mouse—all fine peripherals. We enjoyed the Creative Inspire P7800 7.1 surround-sound speakers and subwoofer, as well. find.pcworld.com/45246

Medion M3Director 5100

★★★★☆

THE MEDION M3DIRECTOR 5100 is a gray minitower that would suit a den or a small home office. Even with integrated sound—no fancy audio card here—the M3Director still packs plenty of aural punch. The unit can handle surround sound, though our configuration included only a 2.1-channel speaker system with a mini-subwoofer. The latter sounds great; you can control it with a volume wheel on the multimedia keyboard.

In every other respect, the M3Director is a fully functional Windows Media Center PC equipped with a TV and FM tuner (and a basic FM antenna); it was one of the few units in our roundup that could quickly find radio stations. An analog-only Medion MD7319 19-inch LCD came with our test system, even though it includes DVI for a digital LCD. ▶

POWERED BY A NEW 3.8-GHz INTEL CPU, HP'S MEDIA CENTER PC WAS OUR ROUNDUP'S TOP PERFORMER.

age or as an external drive connected to a USB port on another PC. On top, a CD storage bay doubles as a docking area for HP Photosmart digital cameras.

The M1050y provides all the video-in ports you could possibly need for camcorder downloads—FireWire, S-Video, and RCA—on the front so you don't have to fumble for them on the back. When they're not in use, they hide behind a sliding door. HP's wireless keyboard offers a volume knob and a set of optical-drive eject buttons, which we used frequently to pop discs quickly out of the DVD+RW burner and the 16X DVD-ROM drive. On the downside, like most of the entertainment PCs we saw, the system suffers from sluggish radio tuning.

Stoked by 1GB of RAM and powered by the roundup's fastest processor, a 3.8-GHz Pentium 4 570 CPU, the M1050y was our best performer, though not by much. It earned a WorldBench 5 score of 96, putting it just a few percentage points ahead of the pack. find.pcworld.com/45242

IBuyPower Media-XP

★★★★☆

THE IBUYPOWER MEDIA-XP is very similar to this roundup's CyberPower Media Center PC, with a few minor differences. Both are big, attractive black boxes with concave fronts. Though a bit chunky,

edge, too, turning in a WorldBench 5 score of 92, compared with the CyberPower PC's score of 88. The system is nicely designed, with two spring-loaded front panels concealing a seven-in-one memory card reader, a multiformat DVD burner, and two of the PC's six USB ports. The case's rear provides in and out connections for video and audio equipment.

Our \$2247 test PC came with a 19-inch

STACKABLES:
The Shuttle XPC
G5 8300MC (top)
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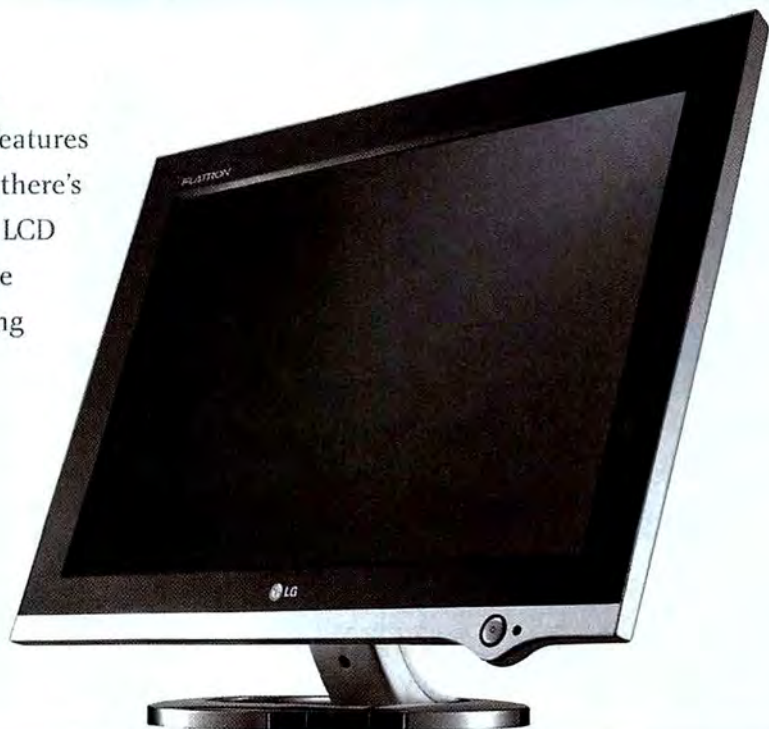
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Fairly compact, the M3Director measures 14 inches tall, 7 inches wide, and 16.8 inches deep. Its attractive black front panel features a multiformat DVD burner, a separate 16X DVD-ROM drive, and a media bay of additional slots and ports protected by a sliding door, which is one of this unit's coolest features. When released, it glides down out of sight into the case, revealing an eight-in-one memory card reader, a floppy drive, two of the unit's six USB ports, and a slew of audio/video-in and -out ports, ranging from a headphone jack to your choice of a four-pin or a powered six-pin FireWire port for downloading from your camcorder. At the base of the unit, backlit reminder icons identify your current activity—playing a DVD, watching TV, or listening to music.

The \$1599 M3Director earned a WorldBench 5 score of 80, placing it last in the group and 11 percent below the average. The unit came equipped with the slowest processor, a 3-GHz Pentium 4 530 (same as the Gateway 820GM), and 512MB of RAM. find.pcworld.com/45250

Shuttle Computer XPC G5 8300MC

★★★★☆

SHUTTLE COMPUTER'S XPC G5 8300MC is more than an entertainment PC—it's also a conversation piece. Looking a bit like an oversize toaster, this 13-pound black-and-silver unit measures 12 inches long by 7 inches tall by 8 inches wide and will fit just about anywhere in your house.

The \$3037 G5 8300MC's shiny chrome front camouflages a multiformat DVD drive and a seven-in-one card reader. At the base, behind a black drop-down door, are microphone and headphone jacks, two of the unit's four USB ports, and a FireWire port. On the back, the G5 carries most of the same standard PC, audio, and video connections as the other Media Center PCs here, including DVI and S/PDIF connections. And the G5 will have no problems running any Windows application: Equipped with the same 3.4-GHz Pentium 4 550 processor and 1GB of RAM as two other units in our roundup,

GAMER PC

Compaq's Muscular X Gaming PC

★★★★☆

MEDIA CENTER 2005 has a lot going for it, but it's not optimized for gaming. If you're looking for an entertainment machine of a different sort, X could mark the spot. Compaq's X Gaming PC GX5000Z is a brushed-aluminum tower that has performance and attitude to spare. You might not think first of Compaq when looking for a gaming PC, but I was very impressed with this computer. It just may change some people's attitudes about which machines are legitimately hot. The X is a high-end gamer: This system costs \$5429 with a fine 23-inch LCD monitor.

Stocked with a 2.4-GHz Athlon 64 FX-53 processor, 1GB of RAM, an NVIDIA GeForce 6800 graphics card, 256MB of graphics memory, and Windows XP Professional, our test system turned in a blazing WorldBench 5 score of 97, one of the highest of any desktop PC we've tested. The X really shone on our gaming benchmarks—it ranks among the top five performers we've tested in the past eight months.

This big tower has intimidating heavy-metal looks, including a glowing rear fan. The sculptured front features a vault-like door that swings up to reveal the drive bays (a DVD burner came with our unit) and a seven-in-one memory card reader.

A headphone port on the front would have been nice, but there are many things to like about the design, such as the six open drive bays, the tool-less case access, the removable motherboard tray, and the graphics card, which has two DVI ports for dual monitors.

For our review, HP sent its 23-inch F2304 LCD, which in addition to analog and DVI ports has an S-Video-in port. The picture over DVI is impressive, but serious gamers will want to bypass the built-in speakers in favor of a multichannel speaker system to stay alive in surround-sound-capable first-person shooters. find.pcworld.com/44206



COMPAQ'S GX5000Z gives players a thrill.

it earned a WorldBench 5 score of 88—just 2 percent below the median.

Like most other Media Center PCs we tested, the G5 was very slow at seeking radio stations. The other apps worked fine and looked good on the accompanying 17-inch Shuttle XP17 flat-panel monitor. For input, our unit relied on a Logitech Bluetooth keyboard and mouse. Music and movies sounded great on 5.1 surround-sound Logitech Z-680 speakers with sub-

woofer. The speaker system comes with a Digital SoundTouch Control Center desktop module that you operate with a handheld remote. find.pcworld.com/45254

Sys Technology MediaMax

★★★★☆

RESEMBLING A STEREO component more closely than any other PC here, the Sys Technology MediaMax entertains with knobs, buttons, and bouncing ►

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color gauges galore. In fact, this shoe box-shaped unit can act as a stand-alone radio. The MediaMax comes with two FM coaxial connections on the back, one for Windows Media Center and another for a front radio knob. Too bad the knob can't control radio tuning inside the Media Center. Likewise, the MediaMax's EZ-Cinema button lets you launch a basic Linux DVD and CD player without booting Windows, though EZ-Cinema didn't work reliably on our test unit.

Despite looking like a stereo component, the \$1390 MediaMax is a pretty good PC for its dimensions, just 7 inches wide by 9 inches tall by 13 inches deep. The front features a multiformat DVD burner. Two of the unit's six USB ports, plus a CompactFlash memory card slot, microphone and headphone jacks, a FireWire port, and a multiformat card reader, can be found on the sides. The rear has most of the audio/video-in and -out ports, including DVI, so you shouldn't have a problem connecting any of your favorite audio or video equipment. Our system came with an undistinguished 17-inch Planar PX171M LCD monitor.

The MediaMax handled all the Media Center applications with ease, particularly the Media Center FM radio tuner, which zipped through stations as fast as the front dial did. In our speed tests the MediaMax earned a WorldBench 5 score



SHELF PCs: ZT GROUP Cisnet Media Center PC X6534 (top) and IBuyPower Media-XP.

documentation is almost nonexistent. Even our Sys Technology representative had trouble explaining some of the features. find.pcworld.com/45208

ZT Group Cisnet Media Center PC X6534

★★★★☆

ZT GROUP'S Cisnet Media Center PC X6534 masquerades as a muscle stereo system. The most prominent feature on this machine's large, brushed-aluminum

gets lost under the couch cushions. An all-too-rare reset button is also welcome.

This model was one of the most solid entertainment units in our group, with zippy radio tuning and good handling of the other Media Center applications. It was also one of the largest overall, however, at 5.75 inches tall by 17.25 inches wide by 17.75 deep. And it was the noisiest; its cooling fans tended to whine, which is a sure way to pierce the quiet of a room.

Our review unit came with a nice set of 5.1-channel Logitech Z-5300 speakers; this set includes a subwoofer and a wired volume and quality-control handheld unit. Also bundled with the X6534 we received was a very good Logitech wireless mouse and keyboard.

On our performance tests, the Media Center PC X6534 earned a WorldBench 5 score of 93—a fine effort for a 3.2-GHz Pentium 4 540 system with 512MB of RAM, and the second-highest score in the group. A good-looking 19-inch Samsung SyncMaster 910T LCD monitor helped push the total package price up to \$2599. find.pcworld.com/45252 ■

Contributing Editor Carla Thornton covers laptops and other topics for PC World.

THE MEDIAMAX'S RADIO WAS THE FASTEST AT TUNING, AND IT CAN OPERATE WITHOUT WINDOWS.

of 84—the second-slowest in this group, but respectable for a 3.2-GHz Pentium 4 540 PC with 512MB of RAM. You might be able to goose that performance a bit by using the MediaMax's Magic Tuner, a combination volume/overclocking dial that's located on the front.

We have one major complaint to lodge against the MediaMax: It took us longer to figure out how to use this unit than any other system here. The multitude of front gauges and controls is confusing, and the

box is a snazzy blue backlit decibel meter.

The remainder of the front is taken up by a large spring-loaded panel. Press it, and the door dramatically descends to reveal a generous array of PC features, including a multiformat DVD burner; a seven-in-one memory card reader; two of the unit's six USB ports; and microphone, headphone, and FireWire ports.

In addition, the X6534 is one of the few units here to offer a volume control on the front—a handy feature when the remote

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January 2005



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Acer® EasyPort



Acer EasyPort Port Replicator III

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Acer AL1731

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- 1280 x 1024 native resolution
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- 20ms response time
- Silver/black color

Acer AL1731

\$329

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

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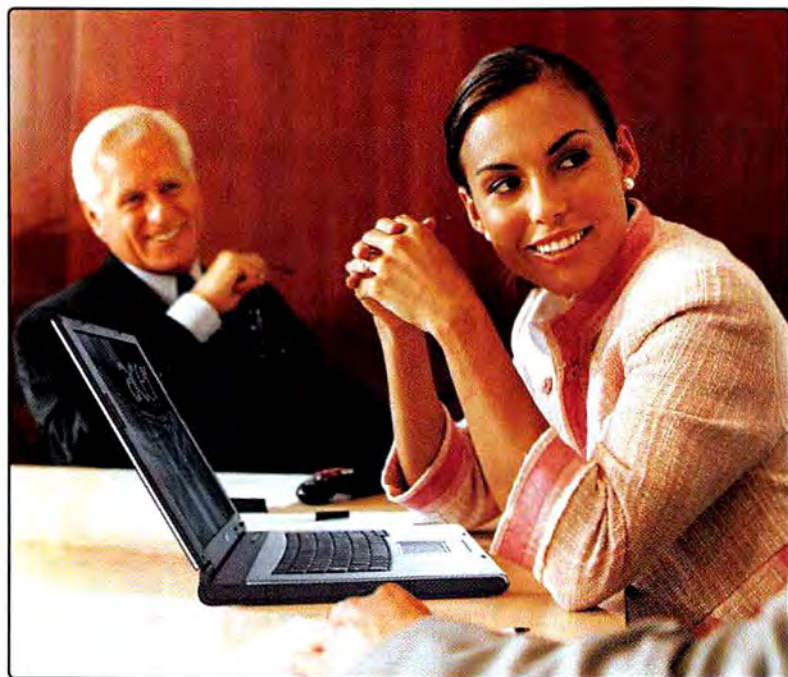


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512MB DDR266 SDRAM, 60GB¹ HARD DRIVE AND
15.0" XGA (1024 x 768) TFT DISPLAY.
(LX.T5706.026)

Acer TravelMate 2303WLCi-855-XP

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\$150 price cut!

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(1.50GHz, 512KB L2 cache, 400MHz FSB)
MICROSOFT® WINDOWS® XP HOME EDITION
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15.0" XGA (1280 x 800) TFT DISPLAY.
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Acer AL1715
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Acer recommends Microsoft® Windows® XP Professional.

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Let the Acer Aspire 1800 be your portable entertainment and creativity center. Play the latest games, watch your favorite movies, edit videos or use power-hungry productivity applications. You won't miss one show-stopping moment on the 17.0" wide-screen display, and thanks to the ATI® MOBILITY™ RADEON™ X600 chip, you'll experience new levels of graphics performance. Instead of being tied to your desk, enjoy the best in multimedia all around your home.



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- 80GB* hard drive
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- ATI® MOBILITY™ RADEON™ X600 graphics, 64MB DDR
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Now with
Microsoft® Windows® XP
Service Pack 2!

Acer Aspire 1804WSMi-XPP

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Performance Teamed with Practicality

Savvy users know that a wide-angle display can make work easier and enhance productivity. You'll see sharp text and crisp images on the Acer TravelMate 2700's 15.4" wide-angle LCD and have the convenience of viewing spreadsheets side by side on a single screen. Combining practicality with first-class performance, the Acer TravelMate 2700 is an excellent choice for small/home offices and small-to-medium businesses as well as government/educational institutions.

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- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 40GB* hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.4" WXGA (1280 x 800) TFT display
- ATI® MOBILITY™ RADEON™ 9000 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 2701WLCi-
XPP-SP2

\$1,099

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
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(LX.T6006.093)

Now with
Microsoft® Windows® XP
Service Pack 2!



15.4"-Wide
Display



Acer AL1714

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- 1280 x 1024 native resolution
- 350:1 contrast ratio
- 160° horizontal viewing angle
- 120° vertical viewing angle
- VGA signal connector
- 370 cd/m² brightness
- 14ms response time
- Black color

Acer AL1714

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Acer® Veriton® 7600GT Business Productivity Tool - Minitower



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB hard drive
- CD-RW drive
- 1.44MB floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty*

Acer Veriton 7600GT-U-P3201

\$899

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 CACHE, 800MHz FSB)

MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 7600GT-U-P3001

\$849

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 CACHE, 800MHz FSB)

MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer® Veriton® 5600GT Business Productivity Tool - Standard Desktop

The Acer Veriton 5600GT standard desktop offers the ultimate balance between space-saving design and expandability, all in a handsome deep-charcoal chassis.



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB hard drive
- CD-RW drive
- 1.44MB floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty*

Acer Veriton 5600GT-U-P3201

\$899

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 CACHE, 800MHz FSB)

MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 5600GT-U-P3001

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INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 CACHE, 800MHz FSB)

MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer 15.0" Flat Panel Display

A 15.0" LCD is appropriate when both space and budget are limited. It's suitable for most business applications as well as home activities, such as Web surfing and e-mail.



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- 15.0" TFT LCD
- 1024 x 768 native resolution
- 350:1 contrast ratio
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- 125° vertical viewing angle
- VGA signal connector
- 250 cd/m² brightness
- 25ms response time
- Black or beige color

Acer AL1511

\$229

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

Acer recommends Microsoft® Windows® XP Professional.

Acer® Veriton® 3600GT Business Productivity Tool - Compact Desktop

The compact form factor of the deep-charcoal Acer Veriton 3600GT makes it the perfect desktop solution when space is at a premium.



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB¹ hard drive
- CD-RW drive
- 1.44MB¹ floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty²



Acer Veriton 3600GT-U-P3201

\$899

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 cache, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 3600GT-U-P3002

\$849

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 cache, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

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Acer® AcerPower™ F2 All-Around Budget Performer

Proven technology, high-level reliability and expansion options help to make the AcerPower F2 minitower a sound investment for home, school or office needs.

- Intel® Pentium® 4 Processor or Intel® Celeron® D Processor
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- 256MB DDR SDRAM
- 40GB¹ hard drive
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- 1.44MB¹ floppy drive
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- 10/100 LAN
- One-year limited warranty²

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INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 cache, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

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A dependable CRT monitor is a great value for education, small business and home use, providing crisp text and graphics.



Acer AC711

- 17.0" CRT
- 16.1" diagonal viewing area
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- Black or beige color

Acer AC711

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Acer recommends Microsoft® Windows® XP Professional.

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor
- Intel® 855GME chipset
- Intel® PRO/Wireless 2200BG network connection
- Microsoft® Windows® XP Professional or
- Microsoft® Windows® XP Home Edition
- 40GB* hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.0" XGA (1024 x 768) TFT display
- Intel® Extreme Graphics 2
- 802.11b/g WLAN, 10/100 LAN, V.92 modem

Acer TravelMate 4000LCi- XPP-2MB

\$1,099

INTEL® PENTIUM® M PROCESSOR 710
(1.40GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
AND 512MB DDR333 SDRAM.
(LX.TS306.024)

Acer TravelMate 4000LCi- XPH-2MB

\$999

INTEL® PENTIUM® M PROCESSOR 710
(1.40GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP HOME EDITION
AND 256MB DDR333 SDRAM.
(LX.TS305.124)

Acer Notebook/Tablet Service Upgrades Protect Your Valuable Investment

Quality is built into every notebook and Tablet PC Acer makes, and each comes with a one-year standard limited warranty.¹ It includes 24/7 (excluding some holidays) hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. Extra protection is available with one of these upgrades:

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\$99

Prepays freight to and from Acer repair depot.
Excludes extension of International Traveler's Warranty.

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

2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002)

\$199

Prepays freight to and from Acer repair depot.
Excludes Extension of International Traveler's Warranty.

¹ When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

² For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.

For the name of a reseller near you or further information, please call Acer or visit our Web site:

800-571-2237

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READERS RATE THE MANUFACTURERS



Who builds **hardware** you can count on? How does **tech support** stack up? We asked

42,000

PC World readers about their **PCs, cameras, printers, and more**—and boy, did they give us an earful.

By Laurianne McLaughlin

INSIDE

101 Desktops

103 Notebooks

104 Printers

110 Digital Cameras

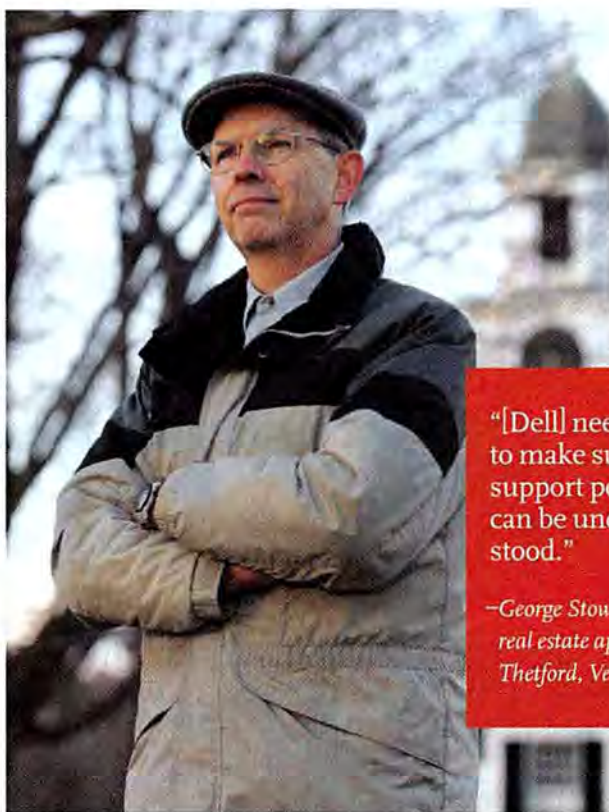
112 Wireless Gateways

114 Audio Players

WHEN YOU have a problem, you need a really good listener.

And when you have a misbehaving PC and you call tech support, a listener is the least you deserve, says George Stowell, a residential real estate appraiser in Thetford, Vermont. When he called Dell because his Dimension 8250 desktop's CD-RW drive began working only sporadically, the first few representatives that he reached seemed to be offshore—they were courteous but had heavy accents and were difficult to understand. What was worse, they seemed to stick rigidly to diagnostic scripts, instead of listening to him explain the fixes he'd tried.

"Everyone seemed to have a different idea of what to do," including fiddling with cables, settings, and diagnostics, Stowell says. Meanwhile, the problem kept recurring. "I was very disappointed," he says. "[Dell] needs to make sure its tech support people can be understood by the average person. They need to be better trained so they can think on their own instead of flying through scripted diagnostics." After making about six calls to Dell, Stowell finally reached a rep-



"[Dell] needs to make sure its support people can be understood."

*—George Stowell,
real estate appraiser,
Thetford, Vermont*

resentative who sent him a new drive, which worked fine.

Too many tech reps simply don't get the job done well—that message came through loud and clear from the participants in our Reliability and Service survey. Over 42,000 subscribers reported on the computer products they use at work and at home. We asked

them about their desktop and notebook PCs, printers, digital cameras, wireless gateways, and audio players. This year, we revamped our survey and used statistical analysis to calculate our results.

Overall, regardless of the product category, we found that as the PC industry continues to mature and as

many products become more reliable, phone service continues to frustrate users—with a few exceptions. IBM's notebook PC group focuses on service, and that showed in the high grades from satisfied owners. Independent, locally owned mom-and-pop stores also deliver great service, our readers said.

But no other big-name PC maker earned consistent better-than-average marks for service. Offshore support reps, who don't speak colloquial American English well, frustrated many PC owners. As for Compaq and HP, a few years after the companies' merger, many users continued to report disappointment with both brands.

With peripherals, the story is mixed. Owners of wireless gateways reported fewer setup headaches and gripes overall. Many printer owners, exception for Lexmark customers, reported generally good experiences. Digital cameras and MP3 players—the latter category a first-timer in this year's survey—garnered some software, ease-of-use, and design complaints but created fewer service headaches for our readers than did PCs. Overall, fewer people had to contact tech support for help with peripherals than did for help with PCs. As a result, we did not have enough responses to formulate service grades for many peripherals makers.

How We Conducted the Survey

WORKING WITH Lynd Bacon & Associates of Belmont, California, and Research Results of Fitchburg, Massachusetts, *PC World* surveyed more than 42,000 subscribers about their experiences with PCs, printers, cameras, gateways, and MP3 players. The online survey was open to our subscribers between April 1 and August 31, 2004. We limited reports to devices that were three years old or younger.

Lynd Bacon & Associates then used statistical analysis, including multivariate statistics and psychometrics, to determine which companies performed significantly better or worse than average over a number of measures.

In our charts, we arranged the companies with the most better-than-average scores at the top and those with the most worse-than-average scores at the bottom. When a vendor had both better-than-average and worse-than-average scores, we subtracted the worse-than-average scores from the better-than-average scores. When two or more companies received the same number of better-than-average or worse-than-average scores, we arranged the vendors alphabetically.

Go to find.pcworld.com/45354 for more-detailed scores.

Desktops: Service Disappointments

DELL DESKTOP PC owners like George Stowell expressed a sentiment that echoed frequently in this year's survey. Many PC users said that they like their computer's quality (in fact, Stowell has bought two

ful. (In our chart, we rank HP and Compaq separately because the merged company says it is maintaining two distinct brands with different characteristics and hardware.)

Owners of PCs from locally owned stores said the service they

received couldn't be beat. Customers gave mom-and-pop tech support high marks for professionalism, knowledge, and ability to resolve the problem. But remember: There's no guarantee that all independent stores provide excellent service.

However, the outsourcing of tech support to foreign countries by companies such as CyberPower, Dell, and HP/Compaq continues to be a hot-button issue for PC owners. Compaq, Dell, and HP desktop owners gave these companies below-average marks for phone support, with many respondents saying that the techs were difficult to understand and that it was hard to reach someone help-

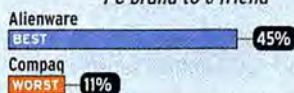
ful. (In our chart, we rank HP and Compaq separately because the merged company says it is maintaining two distinct brands with different characteristics and hardware.)

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Mom-and-pop customers said that they were slightly less pleased with reliability than with service. This probably happened because some local stores use more no-name parts than major-brand PC makers do, says Roger Kay, vice president of client computing at market research firm IDC. For example, 38 percent of participants in our survey who owned independent-store PCs reported experiencing a hardware or software problem with a system they bought. (We asked read- ▶

WOULD YOU RECOMMEND YOUR DESKTOP?

Percentage of survey respondents who would recommend their desktop PC brand to a friend



DESKTOP PCs

EMachines Owners Are Happiest Overall

MANY MPC COMPUTER OWNERS STRUGGLE with problematic PCs, while HP and Compaq owners encounter service problems.

COMPANY	RELIABILITY MEASURES					SERVICE MEASURES			
	Problems on arrival	Any hardware or software problem	Failed component	Failed core component ¹	Satisfaction with reliability	Phone hold time	Phone rating	Failure to resolve problem	Service experience
EMachines	●	●	●	●	●	●	●	●	●
Apple	●	●	●	●	●	2	2	2	2
Medion	●	●	●	●	●	2	2	2	2
Alienware	●	●	●	●	●	2	2	2	2
Dell	●	●	●	●	●	●	●	●	●
IBM	●	●	●	●	●	●	●	●	●
Independent sellers	●	●	●	●	●	●	●	●	●
Sony	●	●	●	●	●	●	●	●	●
ABS	●	●	●	●	●	2	2	2	2
Acer	●	●	●	●	●	2	2	2	2
PowerSpec	●	●	●	●	●	2	2	2	2
Shuttle PC	●	●	●	●	●	2	2	2	2
VPR Matrix	●	●	●	●	●	2	2	2	2
Gateway	●	●	●	●	●	●	●	●	●
Systemax	●	●	●	●	●	2	2	2	2
CyberPower	●	●	●	●	●	2	2	2	2
MPC	●	●	●	●	●	2	2	2	2
HP	●	●	●	●	●	●	●	●	●
Compaq	●	●	●	●	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average ¹ We categorize six desktop PC components as "core components": CPU, graphics board, hard drive, motherboard, power supply, and RAM. ² We received too few responses to rate the company on this measure.

What the Reliability and Service Measures Mean

RELIABILITY MEASURES

- **Problems on Arrival (All Devices)** Based on the percentage of a brand's owners who reported a problem when they first received their device.
- **Any Hardware or Software Problem (All Devices)** Based on the percentage of a brand's owners who reported one or more problems during the life of the device.
- **Failed Component (Desktop and Notebook PCs)** Based on the percentage of a brand's owners who reported replacing one or more original parts because these failed.
- **Severe Problems (Printers, Cameras, Gateways, Audio Players)** Based on the percentage of a brand's owners who said they had a problem serious enough to cause them to contact tech support.
- **Failed Core Component (Desktop and**

Notebook PCs) Based on the percentage of a brand's owners who reported the failure of a CPU, a graphics card, a hard drive, a motherboard, a power supply, or RAM.

- **Product's Ease of Use (Printers, Cameras, Gateways, Audio Players)** Based on the brand owners' rating, on a seven-point scale, of the ease of working with the device and any accompanying software.
- **Satisfaction With Reliability (All Devices)** Based on the brand owners' rating, on a seven-point scale, of their satisfaction with the device's reliability.

SERVICE MEASURES

(Desktop PCs, Notebook PCs, Printers Only)

- **Phone Hold Time** Based on the average time a brand's owners reported waiting on hold to speak with a tech-support rep.

- **Phone Rating** Based on the cumulative score from a question in which we asked brand owners to rate, on a seven-point scale, several aspects of their experience in phoning the company's tech support. Among these were whether the information was easy to understand and whether the support rep spoke clearly.
- **Failure to Resolve Problem** Based on the percentage of a brand's owners who said that their problem was not resolved to their satisfaction.
- **Service Experience** Based on the cumulative score from a question in which we asked brand owners to rate, on a seven-point scale, aspects of their service experience. These included whether the vendor fulfilled its commitments and whether it showed concern for the situation.

ers to report only issues that significantly affected the operation of the device.) The mean for this category overall was 29 percent.

Some PC makers, including EMachines and Gateway—now one company since their March 2004 merger—have stopped using India-based call centers. Today, when customers call regarding either brand, they're guaranteed to get a rep in the United States or Canada, says Mike Zimmerman, Gateway's senior vice president of customer care services and quality assurance.

Thirty-four percent of Gateway desktop owners reported some sort of hardware or software problem with the PC, compared with a mean of 29 percent in this category for desktop vendors overall. (Keep in mind that survey results reflect user experiences with Gateway both pre- and post-merger.)

But Zimmerman says that customers can expect improvement on that front. "Today if we launch a new Gateway desktop, notebook, or monitor, all the components will go through a certification process for approval," he says.

MPC says that some problematic dual hard drives, power supplies, and fans had to be recalled this year, a likely factor contributing to the 28 percent of MPC desktop owners reporting a failed component. The company has proactively contacted affected customers, and no widespread component problems have popped up in the past five months, says Jeff Filmore, MPC's vice president of services and supply operations.

Fourteen percent of CyberPower's customers reported receiving systems that had problems on arrival, compared with a mean

of 5 percent for this category overall. The company says that fans have fallen off during shipping of certain AMD-based systems. CyberPower's newer AMD Athlon 64-based systems use a different chip socket and fan and don't have the same trouble, says Eddie Vong, CyberPower's manager of customer service.

PROBLEMS FOR HP AND COMPAQ

SINCE HP PURCHASED Compaq in May 2002, the company has merged its service for the two sets of desktop customers, but both brands earned low marks in the survey. Overall, Compaq and HP users were less satisfied with the reliability of their desktops than were users of most other brands.

On the service side, 17 percent of HP desktop customers complained about unresolved problems, compared with a mean of 12 percent in this category.

Internal surveys at HP indicate that reliability and service are improving for both brands. HP's Deb Nelson, vice president of marketing for the systems group, says that call volume is rising, as customers

connect more devices to home PCs. HP focuses on fixing problems in the first call, she says. Unlike Gateway, Nelson says, HP has no plans to bring all support centers back to North America.

Where is HP falling short? The company's size leaves customers vulnerable to snafus, according to IDC analyst Roger Kay. "This situation leaves open the possibility of some combination of components failing more often than average. But it is in the handling of the fix that HP loses its buyers loyalty," Kay says.

FIRST-TIME RESOLUTION

Percentage of survey respondents who resolved their desktop PC problem the first time they contacted tech support



Notebooks: Mixed Results

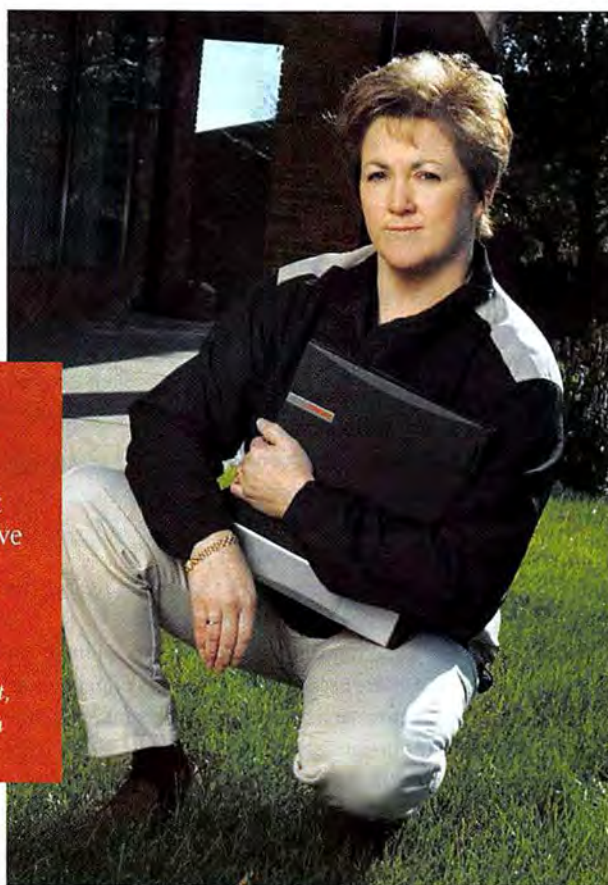
AMONG NOTEBOOK PC OWNERS, Apple and EMachines users reported the most satisfaction with reliability, while Compaq, Gateway, HP, and Sony ranked near the bottom.

What's bothering Sony notebook owners? Twenty-nine percent of them reported hardware or software problems with their machines, as opposed to only 16 percent of Apple's notebook users. Customers also reported low satisfaction with Sony tech support. Twenty-three percent of Sony customers who encountered a problem with their notebook said that the company never solved it. The mean for all notebook vendors on this measure was 14 percent.

According to Steven Nickel, general manager of Sony VAIO service operations, the company made some changes to its call centers during the summer of 2004 to improve customer service. Sony reduced the number of call centers in the United States and overseas, improved training, and increased its monitoring of calls, he says, all of which should improve service and problem resolution for Sony customers. The company also began offering ▶

Compaq replaced her notebook's memory, but "the hard drive was failing right along."

—Kimber Porter,
insurance agent,
Flint, Michigan



NOTEBOOK PCs

EMachines and IBM Tops for Satisfaction

APPLE USERS APPLAUD their notebooks' reliability, while many Compaq and Sony owners are dissatisfied with reliability and service.

COMPANY	RELIABILITY MEASURES					SERVICE MEASURES			
	Problems on arrival	Any hardware or software problem	Failed component	Failed core component ¹	Satisfaction with reliability	Phone hold time	Phone rating	Failure to resolve problem	Service experience
EMachines	●	●	●	●	●	2	2	2	2
IBM	●	●	●	●	●	●	●	●	●
Apple	●	●	●	●	●	2	2	2	2
Dell	●	●	●	●	●	●	●	●	●
Fujitsu	●	●	●	●	●	2	2	2	2
Acer	●	●	●	●	●	2	2	2	2
Independent sellers	●	●	●	●	●	2	2	2	2
Toshiba	●	●	●	●	●	●	●	●	●
Gateway	●	●	●	●	●	●	●	●	●
HP	●	●	●	●	●	●	●	●	●
Compaq	●	●	●	●	●	●	●	●	●
Sony	●	●	●	●	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average ¹ We categorize six notebook PC components as "core components": CPU, graphics board, hard drive, motherboard, power supply, and RAM. ² We received too few responses to rate the company on this measure.

more user-replaceable parts to VAIO customers as of summer 2004, reducing the downtime when a part such as an optical drive or a hard drive fails, Nickel says.

Like their desktop-owning counterparts, many Compaq and HP notebook owners had problems when dealing with service reps. Kimber Porter, an AFLAC insurance agent in Flint, Michigan, says that Compaq took too long to resolve the matter when her approximately six-month-old Compaq Evo notebook started acting up in November 2003. The machine kept displaying an error saying that she was out of virtual memory, or it simply shut down.

Porter called Compaq tech support several times, each time being advised to change the memory parameters, which she'd already tried. Then Compaq sent a tech out to replace the memory, but the problem once again reappeared.

"The hard drive was failing right along," she says. Finally, in January 2004, her calls were escalated from a series of phone representatives to a customer service manager, who sent her a new hard drive. It was bad enough that the original drive failed, Porter says, but it was worse that Compaq's support reps wouldn't

WOULD YOU RECOMMEND YOUR NOTEBOOK?

Percentage of survey respondents who would recommend their notebook brand to a friend



FIRST-TIME RESOLUTION

Percentage of survey respondents who resolved their notebook problem the first time they contacted tech support



acknowledge that she was experienced with computers and had already attempted to troubleshoot the problem herself.

IBM'S SATISFIED USERS

IBM'S THINKPAD NOTEBOOK group seems to be a case study in good customer service. IBM notebook owners gave the company the best phone support and service scores we saw in either the desktop or laptop category. While the company's reliability measures ran in the middle of the pack, customers absolutely loved the service.

IBM's secret starts with a little southern hospitality, says IBM's Terry Jenkins, manager of global service and support, personal computing division. "Every single call goes through one phone number in Atlanta," he says. IBM's Atlanta-based call center opened in June 2003.

IBM has also expanded its Thinkvantage program, which gives customers diagnostic tools for identifying problems more quickly. And in a notable decision, IBM has implemented "expedited lines" whereby if you call in with a wireless connection problem, say, you can be routed to a wireless specialist.

Printers: From Terrific to Terrible

YOUR EXPERIENCE WITH YOUR printer may vary a lot depending on who manufactured it—that's the clear message from printer owners. Canon got glowing marks in the reliability measures, whereas Lexmark got disappointing scores almost across the board.

Only 11 percent of Canon owners reported having a problem that affected the printer's usefulness. In contrast, 21 percent of Lexmark owners reported such a problem. The overall mean was 16 percent. On the service side, Lexmark received the only worse-than-average score in phone support. Meanwhile, Canon earned the only better-than-average mark for tech-support hold time. Just what is it that Canon is doing right?

Larry Hardin, director and assistant general manager of the consumer printer division, says that Canon runs only one call center, located in the United States, which ensures that customer

Even after "little plastic parts started coming out from [my Lexmark printer]," persuading the rep to replace it took too long.

—John Howard,
sandwich shop
manager,
Billings, Montana



feedback gets heard quickly and that support quality stays high. "Because we have total control of the call center," he says, "we have control over the customer experience." He adds that Canon, unlike some companies, manufactures its own printers. ▶

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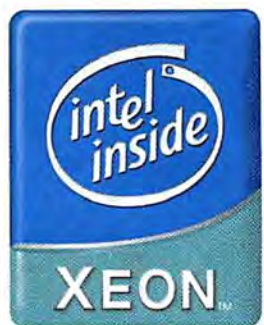


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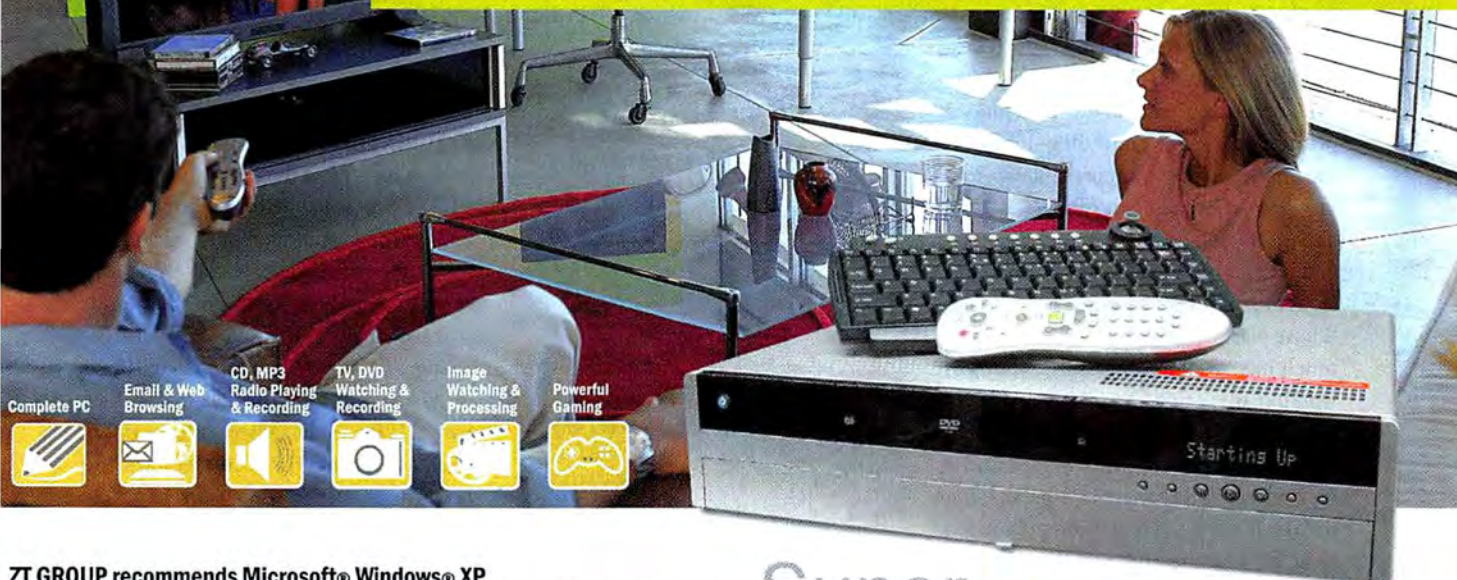
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LEXMARK COMPLAINTS

LEXMARK USERS VOICED the most displeasure among printer owners, citing numerous reliability concerns and the least satisfaction with their overall service experience. One unhappy Lexmark printer owner is John Howard, who manages a Subway sandwich shop near Billings, Montana. Howard's all-in-one X73 printer had some paper jams, which Lexmark's tech support helped him resolve. But a few days after that, the unit stopped printing and made a grinding noise. On the phone, a Lexmark representative told him to try reinstalling the drivers. But the situation worsened.

"Little plastic parts started coming out from the machine," Howard says. "I said, 'I have plastic pieces here.' [The rep] tried to tell me, 'Well as long as everything is working, that's fine.' I said, 'No, that's not fine. Send a repairperson or a new machine.'" Lexmark eventually sent him a new printer, but Howard says persuading the rep to send the replacement took too long. He adds that the rep, though courteous, didn't seem knowledgeable, and seemed to want to stick to a script.

When we got in touch with Lexmark regarding Howard's exasperating experience, the company noted that it had launched a number of new call centers in the first half of 2003, and that Howard may have reached a support rep who didn't have much experience. "If you had parts [coming] out of the printer, that

warrants a replacement," says Kent Jackson, Lexmark's vice president of total quality and customer satisfaction. "The rep should have been quicker to get to the replacement."

Jackson says that Lexmark's own surveys show satisfaction with reliability and service has been improving since early 2004. Lexmark has no plans to change its mix of call centers, some of which are in North America and some of which are offshore, including several in India.

XEROX: MIXED NEWS

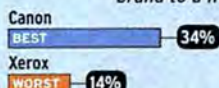
XEROX RECEIVED worse-than-average grades on such reliability measures as ease of use, satisfaction with reliability, and severe problems requiring a call to tech support; 29 percent of Xerox users reported a problem in one of these measures, compared with an overall mean of 8.6 percent. It's worth noting that 61 percent of Xerox printer owners told us they have a laser model, whereas for vendors such as Canon, HP, and Lexmark the majority of respondents said they have inkjet printers. Still, Xerox did not do as well on reliability measures as did other vendors, including Konica Minolta, Oki-data, and Samsung, about which readers

also gave mostly laser-printer responses.

On our service measures, Xerox received the only better-than-average grade among printer vendors for resolution of problems. Only 5.7 percent of Xerox customers encountered problems that were unresolved; the overall mean here was 19 percent. ▶

WOULD YOU RECOMMEND YOUR PRINTER?

Percentage of survey respondents who would recommend their printer brand to a friend



FIRST-TIME RESOLUTION

Percentage of survey respondents who resolved their printer problem the first time they contacted tech support



PRINTERS

Canon Pleases Printer Users

LEXMARK GETS DISAPPOINTING MARKS almost across the board. Among laser printer makers, Samsung does best and Xerox worst.

COMPANY	RELIABILITY MEASURES					SERVICE MEASURES			
	Problems on arrival	Any problems	Severe problems	Product's ease of use	Satisfaction with reliability	Phone hold time	Phone rating	Failure to resolve problem	Service experience
Canon	●	●	●	●	●	●	●	●	●
Samsung	●	●	●	●	●	1	1	1	1
HP	●	●	●	●	●	●	●	●	●
Epson	●	●	●	●	●	●	●	●	●
Okidata	●	●	●	●	●	1	1	1	1
Dell	●	●	●	●	●	1	1	1	1
Brother	●	●	●	●	●	1	1	●	●
Konica Minolta	●	●	●	●	●	1	1	1	1
Xerox	●	●	●	●	●	1	1	●	1
Lexmark	●	●	●	●	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average 1 We received too few responses to rate the company on this measure.

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Digital Cameras: Don't Go Cheap

CAMERAS DON'T CREATE as many blood-pressure-raising moments as other PC products. Folks in this year's survey reported low problem rates with cameras overall compared with other product categories.

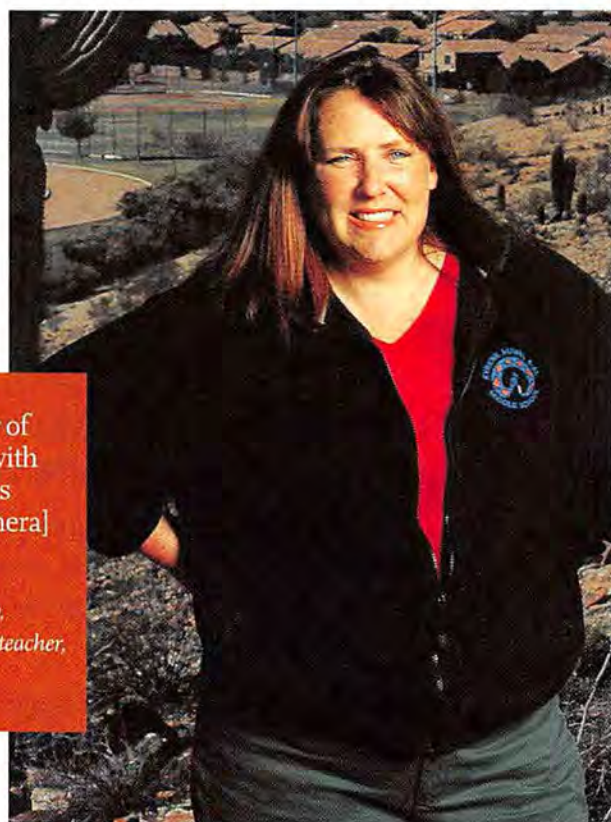
Canon, Panasonic, and Pentax, for example, got high marks in satisfaction with reliability. Canon earned a better-than-average score for ease of use, too, helping it plow ahead of its competitors. Olympus earned some high marks overall, too: Just 7 percent of Olympus owners reported a significant problem with their camera, and only 4 percent reported a severe problem that required a tech-support call. The mean scores for vendors overall on these measures were 9 and 5 percent, respectively.

Kathryn Riley, a middle-school teacher in Phoenix, is one happy Olympus camera owner. "The quality of the photos with my Olympus [C-5050 camera] is great." She says that she finds it simple to use overall, too, but Olympus got a worse-than-average grade in our ease-of-use measure. Riley remarks that although her Olympus camera has "tons of menus, you don't need to know all the options [to take good pictures]."

Sally Smith Clemens, product manager for Olympus Imaging

"The quality of the photos with my Olympus [C-5050 camera] is great."

—Kathryn Riley,
middle-school teacher,
Phoenix



America, says that during the early stages of product development, Olympus listens to and considers customer feedback "so the final products are ultimately designed to do more to satisfy customers' needs."

DIGITAL CAMERAS

Canon Leads the Pack

KODAK, TOSHIBA, HP, and Vivitar camera owners have the most gripes.

COMPANY	RELIABILITY MEASURES				
	Problems on arrival	Any problems	Severe problems	Product's ease of use	Satisfaction with reliability
Canon	●	●	●	●	●
Olympus	●	●	●	●	●
Panasonic	●	●	●	●	●
Pentax	●	●	●	●	●
Sony	●	●	●	●	●
Casio	●	●	●	●	●
Fujifilm	●	●	●	●	●
Konica Minolta	●	●	●	●	●
Nikon	●	●	●	●	●
Kodak	●	●	●	●	●
Toshiba	●	●	●	●	●
HP	●	●	●	●	●
Vivitar	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average

HP AND KODAK WOES

HP AND KODAK received some disappointing results: 16 percent of HP users and 14 percent of Kodak users encountered a problem with their camera that limited its usefulness. Those are relatively high numbers in a category with an overall mean of 9 percent.

HP and Kodak both say they don't know of any issues with specific models or components that could have accounted for our findings. Each company says that its own internal measures have not revealed any spike in reliability complaints. Kodak's Mary Hadley, worldwide director of marketing for the digital capture group, says that the company's research shows customer satisfaction rising.

In the severe-problems measure, 10 percent of HP camera users and 8 percent of Kodak owners had problems that required calling tech support; the overall mean in this measure was 5 percent. In response, HP

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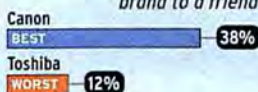
and Kodak each claim that as features increase on cameras, support calls can multiply as well. In late 2003 and throughout 2004, both companies say, they have seen an increase in the number of first-time camera buyers, who tend to call tech support more than experienced camera users.

It's true that the number of first-timers is on the rise, says Michelle Slaughter, director for digital photography trends at InfoTrends: 12.3 million people in the United States bought a digital camera for the first time in 2004, as compared with 10.7 million people in 2003, according to InfoTrends.

Since both Hewlett-Packard and Kodak sell a higher volume of low-end cameras than do other vendors, and since first-time buyers are more likely to buy low-end models, this could partly

WOULD YOU RECOMMEND YOUR CAMERA?

Percentage of survey respondents who would recommend their camera brand to a friend



explain the companies' higher rates of problems requiring calls to tech support, Slaughter says. Not all support calls involve a hardware failure, of course; some merely involve a user question.

For overall reliability, Slaughter says that the adage "you get what you pay for" still rings true for camera shoppers. She believes that owners of super-low-priced cameras—usually with a plastic casing—

are typically less satisfied with overall reliability than other camera owners. Our survey results support this theory as well.

In the end, purchasing a camera with more features is not always the right choice, especially if you don't like fiddling with options and settings. But if you skip the absolute cheapest models, you're more likely to get a trouble-free camera.

Wireless Gateways: Setups Get Easier

WIRELESS NETWORKS HAVE a reputation for being a troublesome technology to set up and use. So it's encouraging to observe that this year our survey respondents didn't report many serious problems with their wireless gateways (also known as routers).

Only one wireless-gateway vendor received a worse-than-average grade in any of the survey's reliability measures: 24 percent of Dell gateway owners reported a severe problem that required a call to tech support. The mean for vendors overall on this measure was 13 percent; Netgear posted the best score of any company for severe

problems, at 10 percent. Netgear and Linksys both earned better-than-average grades for overall satisfaction with reliability.

WOULD YOU RECOMMEND YOUR WIRELESS GATEWAY?

Percentage of survey respondents who would recommend their wireless gateway brand to a friend



For many of the measures, the similarity of the scores is partly due to the fact that gateways often use the same parts from a handful of manufacturers in Taiwan. Netgear, however, works with a manufacturer that makes small- and home-office routers for Netgear alone, says Vivek Pathela, Netgear's senior director for product management and marketing. This arrangement, he says, opens

lines of communication and improves reliability. Pathela notes, too, that Netgear has improved the setup process of its equipment, resulting in fewer support calls and increased customer satisfaction.

Netgear's rivals also seem to have learned a lot about setup in the past year, based on the acceptable survey grades that readers issued across the board in this category. Kurt Scherf, vice president and principal analyst at Parks Associates, says that all the major wireless vendors improved their setup procedures this year. He notes that the Wi-Fi Protected Access (WPA) security standard makes it easier for consumers to choose settings, in contrast to older routers that use the Wired Equivalent Privacy (WEP) standard. In addition, he says that PCs running on the Windows XP operating system do a better job of recognizing wireless products than do computers running older Windows versions. ▶

WIRELESS GATEWAYS

A Sea of Averages

NETGEAR AND LINKSYS lead in a field of products earning good, but not great, results.

COMPANY	RELIABILITY MEASURES				
	Problems on arrival	Any problems	Severe problems	Product's ease of use	Satisfaction with reliability
Netgear	●	●	●	●	●
Linksys	●	●	●	●	●
2 Wire	●	●	●	●	●
Belkin	●	●	●	●	●
D-Link	●	●	●	●	●
SMC	●	●	●	●	●
Dell	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average

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manager... Easy to use, does
not pop up ads in my face or
grab information from me. Most
importantly, it simply works well."

Financial Times

"Easy to use and without any hidden
spyware... Innovative, lean,
useful product."

Wall Street Journal

"Best of all, this program simply works well.
We have yet to see a
Web-based form stump it."

PC Magazine

Audio Players: Some High Notes

DON'T YOU WISH that you could move like the dancers in Apple's iPod commercials? Apple won the dance contest, by far, among the music player companies in this year's survey—the first in which we asked readers about their digital music players. Owners singled out Apple for its easy-to-use iPod and the product's overall reliability.

Apple's secret to success isn't that hard to figure out, according to IDC analyst Roger Kay. Apple spends more time and money on design than do other companies, he says, and it "has a higher [production] cost in order to deliver greater reliability."

However, Creative and Sony received slightly better results than Apple in a couple of measures. Owners of Creative and Sony music players reported fewer problems that would affect their ability to use the device: 8 percent of Sony owners and 12 percent of Creative owners—versus 16 percent of Apple owners—indicated such a problem. (The overall mean on this measure was 14 percent.) Still, Apple kept its customers happier about overall reliability.

NEED BETTER FEATURES AND DESIGN

ARCHOS, PANASONIC, RCA, and Rio got worse-than-average grades for ease of use and satisfaction with reliability. Archos received the only worse-than-average mark on the any-problems measure: 29 percent of Archos users reported a problem that

affected the usefulness of the product. Archos's score was more than double the overall mean of 13 percent on this measure.

Based on the anecdotal comments from our survey respondents, the majority of gripes for all vendors don't involve bread-and-butter reliability issues such as flimsy cases or substandard parts. Instead, complaints center on design choices and software hassles. For instance, many less-than-satisfied music player owners

in our survey wished for more memory and battery life, a better backlight on the display, smaller or differently arranged control buttons, simpler software, or easier ways to deal with files.

Ease of use is a major concern today industrywide, according to Rio. The company says that although each player has similar features, it has different controls.

The second issue involves the PC user's operating system and the OS that the MP3 player supports.

According to Rio, some problems occur when a user doesn't have the latest version of an OS and associated drivers, and a new player requires them for a feature to work. Many survey respondents reported issues of this type, but said that they believe vendors should support more than just the newest OS.

Dan Torres, Rio's vice president of product marketing, says that "one of the biggest customer issues that we have seen over time is the ability for consumers to get music into their players easily. Our goal is to continue to make that process more transparent and integrated with the environments that our customers are using." Citing an example of this effort, he says that "the new Rio Carbon and the new Rio Forge can connect with a [Windows] XP-based computer out of the box without additional software."

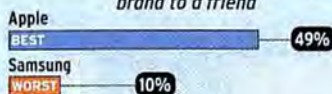
Audio players are still evolving, so there's hope that design flaws will be addressed as vendors upgrade products. For now, don't buy any player without trying it out first, considering button placement and the like.

The bottom line for tech products of all kinds: There are no guarantees of trouble-free service. But the more you know before you plunk down your money, the better your chances of finding a product that will do the job for you—and will keep on doing it. ■

Laurianne McLaughlin is a freelance writer based in Massachusetts. PC World's Edward N. Albro, Grace Aquino, Kalpana Ettenson, and Lisa Huck also contributed to this article.

WOULD YOU RECOMMEND YOUR MP3 PLAYER?

Percentage of survey respondents who would recommend their MP3 player brand to a friend



AUDIO PLAYERS

Apple iPods Rock

MANY ARCHOS USERS SAY their MP3 players could be sturdier and easier to use.

COMPANY	RELIABILITY MEASURES				
	Problems on arrival	Any problems	Severe problems	Product's ease of use	Satisfaction with reliability
Apple	●	●	●	●	●
Sony	●	●	●	●	●
Creative	●	●	●	●	●
Dell	●	●	●	●	●
iRiver	●	●	●	●	●
Samsung	●	●	1	●	●
Panasonic	●	●	●	●	●
RCA	●	●	●	●	●
Rio	●	●	●	●	●
Archos	●	●	●	●	●

● = Better than average ● = Average ● = Worse than average 1 We received too few responses to rate the company on this measure.

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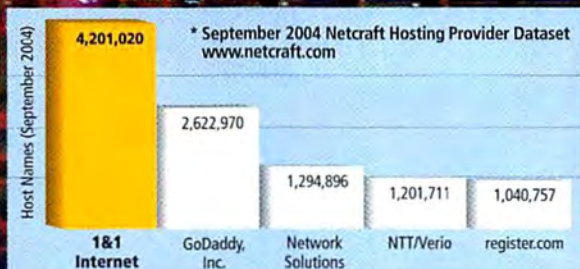


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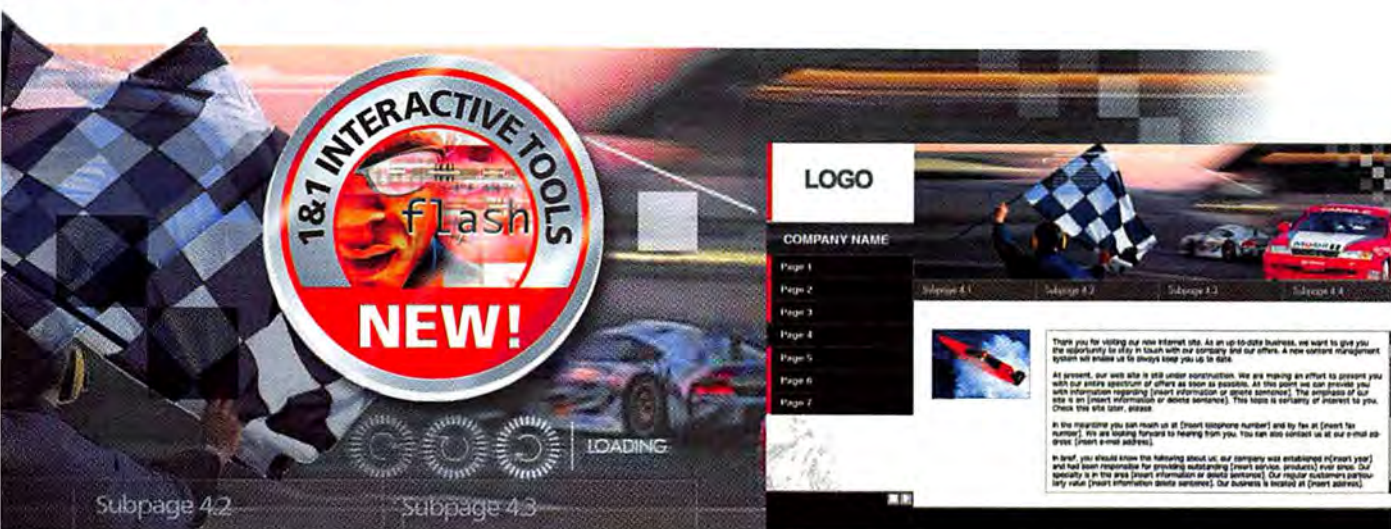
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Build your fully functioning animated site today with the easy-to-use wizard.

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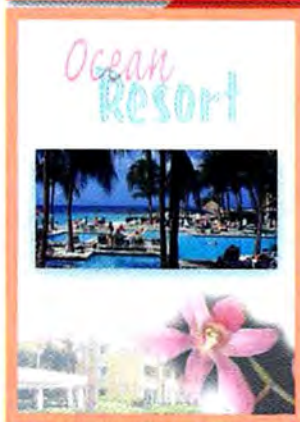
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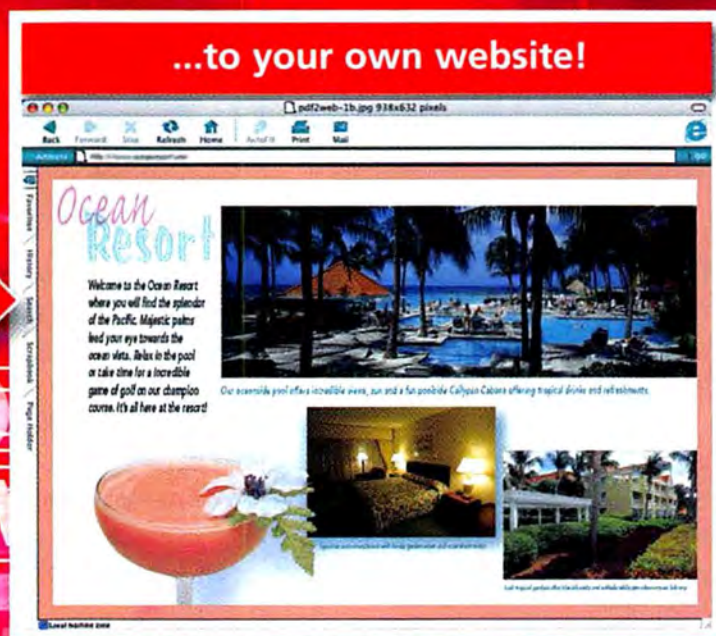
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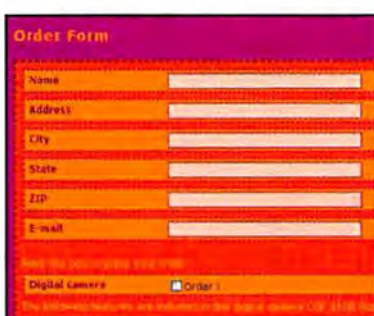
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*Chat Channels and 1&1 WebStatistics are included with Home packages

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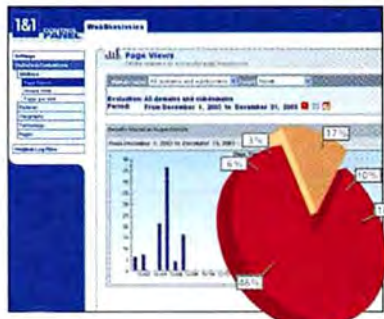


Membership List

Alan Bishop	634 E. 39th Street, New York, NY 10019	alanb@myhost.com
Stephen Bradshaw	1954 Corgin Street, Hudson, OH 44236	bradshaw@myhost.com
Catherine Leonard	64 Stanhope Drive, Pittsburgh, PA 15237	family@myname.com
Carl Brown	553 Liberty Avenue, Wilmington, NC 28403	brownnc2521@lycos.com
Tom Stowe	26 N. Hills Road, Chandler, AZ 85226	webunited@gmx.net
Helen McSweeney	817 Providence Hwy., Boston, MA 02116	helenmcsweeney@hotmail.com

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We even include tools to build your own mailing list! Simply incorporate a template-driven subscription form on your site as interested visitors can quickly request to receive your e-mail newsletters. Once the form is submitted, the data is automatically entered into a

1&1 Newsletter Tool

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 - Microsoft packages

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PACKAGE FEATURES		
Web space	1,000 MB	1,000 MB
FTP accounts	1	1
Monthly Transfer Volume	25 GB	25 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
Chat channels	1	1
1&1 WebStatistics	✓	✓
SITE-BUILDING TOOLS		
PDF2Web Converter	✓	✓
DynamicSiteCreator	✓	✓
Graphic archive	✓	✓
WebsiteCreator	12 pages	12 pages
Software suite worth \$600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	✓	✓
DOMAIN NAMES		
Included Domains	1	1
Subdomains	10	10
Run multiple independent sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
E-mail accounts w/ 1 GB space each	200	200
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Spam filtering for all accounts	✓	✓
Virus Protection for all accounts	✓	✓
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
Dedicated SSL Certificate	optional	optional
PER MONTH	\$4⁹⁹	\$6⁹⁹

BUSINESS PACKAGE

FROM **\$9⁹⁹** PER MONTH

INCLUDES 3 DOMAINS

PACKAGE FEATURES		
Web space	2,000 MB	2,000 MB
FTP accounts	5	5
Monthly Transfer Volume	50 GB	50 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
Chat channels	5	5
1&1 WebStatistics	✓	✓
In2site Live Dialogue	✓	✓
1&1 Newsletter Tool	✓	✓
1&1 WebElements	✓	✓
SITE-BUILDING TOOLS		
PDF2Web Converter	✓	✓
DynamicSiteCreator	✓	✓
Graphic archive	✓	✓
WebsiteCreator	18 pages	18 pages
Software suite worth \$600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	✓	✓
ASP.NET, .NET Framework	✓	✓
Perl, PHP3, PHP4, and PHP5	✓	✓
1&1 WebDatabase	✓	✓
Database	1 MySQL	MS Access
Cron Jobs	✓	✓
SSI (Server side includes)	✓	✓
DOMAIN NAMES		
Included Domains	3	3
Subdomains	50	50
Run multiple independent sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
E-mail accounts w/ 1 GB space each	500	500
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Spam filtering for all accounts	✓	✓
Virus Protection for all accounts	✓	✓
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
SSH Secure Shell Access	✓	✓
Dedicated SSL Certificate	optional	optional
PER MONTH	\$9⁹⁹	\$12⁹⁹

DEVELOPER PACKAGE

FROM **\$19⁹⁹** PER MONTH

INCLUDES 5 DOMAINS

PACKAGE FEATURES		
Web space	4,000 MB	4,000 MB
FTP accounts	25	25
Monthly Transfer Volume	100 GB	100 GB
1&1 Control Panel	✓	✓
Logfiles	✓	✓
MARKETING TOOLS		
Chat channels	10	10
1&1 WebStatistics	✓	✓
In2site Live Dialogue	✓	✓
1&1 Newsletter Tool	✓	✓
1&1 WebElements	✓	✓
SITE-BUILDING TOOLS		
PDF2Web Converter	✓	✓
DynamicSiteCreator	✓	✓
Graphic archive	✓	✓
WebsiteCreator	25 pages	25 pages
Software suite worth \$600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	✓	✓
ASP.NET, .NET Framework	✓	✓
Perl, PHP3, PHP4, and PHP5	✓	✓
1&1 WebDatabase	✓	✓
Database	3 MySQL	MS Access, MS SQL
Cron Jobs	✓	✓
SSI (Server side includes)	✓	✓
Advanced Developer Tools	✓	✓
DOMAIN NAMES		
Included Domains	5	5
Subdomains	200	200
Run multiple independent sites	✓	✓
Full DNS management	✓	✓
E-MAIL		
E-mail accounts w/ 1 GB space each	1,000	1,000
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Spam filtering for all accounts	✓	✓
Virus Protection for all accounts	✓	✓
SECURITY FEATURES		
Protected by up-to-date firewall	✓	✓
Daily backups	✓	✓
Password protected directories	✓	✓
SSH Secure Shell Access	✓	✓
Dedicated SSL Certificate	✓	✓
PER MONTH	\$19⁹⁹	\$24⁹⁹

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Windows Server: Standard Edition

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- Designed to support sophisticated and demanding applications
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Plesk 7 Reloaded Included with All Root Servers

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NEXT GEAR

EDITED BY LAURIANNE McLAUGHLIN

THE ULTIMATE REMOTE

WANT ONE CLICKER THAT CAN DO IT ALL? I CLEARED THE COFFEE TABLE AND TESTED FOUR CONTROLS DESIGNED TO STREAMLINE HOME ENTERTAINMENT MANAGEMENT. BY JOSH TAYLOR

MY FIANCÉE, LISA, moved in with me several months ago, but whenever she wants to turn on the home theater system, we still play a game of remote roulette. Should she use the remote for the cable box, the one for the AV receiver, or the one for the TV? All bets are off if she wants to watch a DVD. Guests seem

equally puzzled. So when I got the chance to try a handful of new universal remote controls that would let me exchange a coffee table's worth of remotes for just one, I leaped at the opportunity. Wedding planning is stressful enough without endless queries from Lisa about which remote to use for listening to a CD and

which one to use for watching, say, *Desperate Housewives*.

You might be surprised at how many options are available. Universal remotes range in price from around \$20 for a no-frills number from Radio Shack to over \$1000 for one from a custom home theater installer. As a rule, the more you spend on a remote, the

more devices you'll be able to control, and the more likely you'll be able to connect it to your PC (usually via a USB port) for easier configuration. If you don't connect the new remote to a PC, you'll have to enter a code for each of your devices, train the new remote by aiming your old one at it, or perform some combina- ►

tion of these two tasks. I spent two weeks examining four units priced between \$90 and \$700. Ultimately, there's only one I'd consider purchasing.

CLICK IT GOOD

AESTHETICALLY, I might have picked a winner on the first day of my investigation: One For All's Kameleon (\$90). The Kameleon's primary claim to fame is that it has no visible buttons. Instead, the remote's face consists of a blue electro-luminescent display that does nothing until it senses motion. Then, it shows the appropriate buttons for whatever device you're trying to control.



Kameleon

One For All
★★★★☆, \$90
find.pcworld.com/45654

Pro: The Kameleon combines an aesthetically pleasing design and a very reasonable price.

Con: The device's reliance on an array of digital buttons makes touch-based operation impossible. And the unit doesn't support the degree of customization available on the higher-end models.



THE ICONS located at the top of the remote make switching between home entertainment devices easy.



WITHOUT RAISED buttons to provide tactile clues, you'll have to keep your eye on where you click.

This feature can be a bit jarring. Every time I walked by the coffee table, the darned thing turned itself on. (Okay, I could have turned off the motion detector.) While watching TV, I could easily access the channel up and down buttons; if I switched over to my audio/video receiver, I could change the audio source.

Unfortunately, in the Kameleon's case, looking great does not equate to working well. With a standard remote control, you can eventually use the device by feel. If you watch enough TV, you learn exactly where the channel buttons are, thanks to tactile clues. But when all buttons are virtual, there's no way to tell exactly where your finger is on the remote. For me, this shortcoming eliminates the Kameleon from serious contention. Universal Remote Control's

A YOU'LL USE these buttons to scroll through commands for complex devices.

B THE LIGHT BUTTON is easy to find, even in the dark.

Osiris MX-350
Universal Remote Control
★★★★☆, \$150
find.pcworld.com/45672

Pro: Well-spaced, nicely raised buttons make this universal remote a pleasure to click.

Con: Menu layout requires a lot of scrolling—or some rather cumbersome customizing—to access many of the home theater system features.

Osiris MX-350 (\$150), on the other hand, is finger-clicking good. The buttons are well spaced and pleasingly firm to the touch. An easy-to-locate light button lets you navigate the remote in a dark room.

The Osiris can control up to ten devices. It has a crisp LCD, though you'll likely spend a lot of time scrolling to reach the screen containing the commands you want. I found the incessant navigating pretty frustrating, but I did manage to cut down on it by customizing the screens that I wanted to see for each device.

If you're simply looking for a remote to control a cable box or receiver, a TV, a DVD player, and a basic audio/video receiver, the Osiris is a terrific choice overall. An optional \$99 base station (the MRF-250 RF) converts the remote into a

radio frequency-based device. This eliminates the primary drawback to infrared devices (the remote's need to "see" the device that it's controlling), and it enables you to control devices from a different room or even to store your components in a closet.

THE BEER TEST

EVEN I, a self-professed gadget nut, could scarcely imagine spending \$700 on a remote control; but I still looked forward to playing with Sony's Navitus RM-NX7000. I had heard that the remote included a huge, bright color display, but I didn't think seriously about the huge part until I tried to use it. Lisa could barely hold the device—using both hands. It's easily twice the size of my HP IPaq Pocket PC.

Connecting the Navitus to my PC for customization was painfully slow and unnecessarily complex. Working with the Navitus gave me two critical insights: First, if a remote control has to have an operat-



THE HELP
button is
actually helpful.

BUTTONS OFFER easy access to the
options you choose most often—watch TV,
listen to music, and so on.

Harmony 676

Editor's Logitech
PICK ★★★★★, \$230
find.pcworld.com/45656

Pro: Easy to set up, simple to customize,
and convenient to use. This was the best
model overall of the four I test-drove.
Con: Some menu options for certain
particular devices get cut off in
midword. The small LCD screen can be
difficult to read.

forth—the Logitech did the
job in the most intuitive way.
Four brightly colored buttons
toward the top are configured
to handle your most common-
ly performed activities, like
watching a DVD or a TV show
(including programs recorded
on your DVR) or listening to
CDs or the radio.

The Harmony was the only
remote that fully recognized
my Onkyo receiver and gave
me access to its Internet radio
features. And the Harmony
may be the first device I've
ever used that features a truly
helpful Help button. Clicking
the Help button triggers a
step-by-step troubleshooting
process, consisting primarily
of powering different compo-
nents on and off until every-
thing is in the proper state.

MAKE YOUR OWN

IF YOU CAN'T see spending
hundreds of dollars on a re-
mote, here's another option:
You may already have a high-
end remote lying around your
house that you haven't consid-

ered. Visit any of the various
handhelds download sites on
the Web (for example, www.handango.com), and you will
find myriad remote control
applications designed to turn
a Palm or Pocket PC device
into a universal remote. Nevo,
developed by UEI—the same
company that produces the
hardware and software used
inside One For All's Kamele-
on remote—is among the
best I've seen; it's included
with most recent IPaqs.

Yet another alternative: You
might try improving your cur-
rent universal remote. Various
remote-control geeks swap
codes for the devices, opening
up a whole new level of cus-
tomization. Some remotes (of-
ten ones developed by UEI)
can be connected to PCs via a
JP1 cable (you can get one of
these for the Kameleon). For

other units, forums on sites
such as Remotecentral.com
contain a wealth of codes and
user instructions to consult.

UNIVERSAL APPEAL?

ULTIMATELY, AFTER immers-
ing myself in remote-control
wonderland for a couple of
weeks, I came to a somewhat
surprising realization. All of
these remotes allowed me to
reduce my coffee table clutter
dramatically, and that alone
arguably makes switching to
one worthwhile; but except for
the Harmony 676, none really
simplified the task of riding
herd on my home theater sys-
tem. Each of these remotes
requires you and your guests
to learn a new array of quirks,
and that can be quite a hassle.
You don't want to turn off the
cable box accidentally at an in-
opportune moment. A glitch
in a wedding ceremony may
be a nightmare, but it pales in
comparison to suddenly los-
ing the picture in the fourth
quarter of a 21-20 game. ■

*These days, freelancer Josh Tay-
lor of Brooklyn, New York, spends
quality time battling his fiancée
for control of the remote.*



Navitus RM-NX7000

Sony
★★★★★, \$700
find.pcworld.com/45658

A MOST COMMANDS are
accessible via the bright
TFT display.

Pro: Virtually every aspect of the
device is customizable, right
down to the picture that serves
as a backup screen to the bright
color LCD.

Con: \$700?!?! On top of that,
the remote can be slow and
challenging to set up, and its
large size makes one-handed
operation virtually impossible.



MEMORY STICK slot—
have you ever seen a Sony
product without one?

ing system (in this case, Lin-
ux) to run it, it's probably go-
ing to be too much of a hassle
for me. And second, if I need
to use both hands to operate a
remote, how do I hold a beer?

Finally, a clear-cut winner
emerged: Logitech's Harmony
676 (\$230), a recent addition to
the company's well-respected
line of remote controls. Aside
from being the easiest device
to use, the Harmony 676 was
far and away the least difficult
to configure. I simply con-
nected it to my PC and fol-
lowed a wizard that took less
than 10 minutes to complete.

Although several devices let
me group home entertain-
ment components together—
for example, to change the vol-
ume on the receiver and the
channels on the cable box,
without switching back and

GADGET FREAK

DAN TYNAN

GADGETIQUETTE 101



GADGETS HAVE changed how we act in public, and generally not for the better. Two-thirds of executives say tech-related rudeness at work is getting worse, according to a survey by IT staffing firm Robert Half Technology (www.rht.com). And while various surveys say the use of cell phones and other devices is down in cars and theaters, it's rising just about everywhere else—including in bathrooms.

Even if you already know how to use a soup spoon, you could probably brush up on your gadgetetiquette—or know someone who could. We collected some expert advice.

Prevent cell hell. By far, the largest source of gadget faux pas is the mobile phone. People shout into their phones and often interrupt conversa-

tions to take pointless calls, says Dr. P. M. Forni, author of *Choosing Civility: The Twenty-Five Rules of Considerate Conduct* (St. Martin's Press, 2002).

His advice? If you're expecting an important call, set your cell phone to vibrate (but not ring), and warn others you may be called away. When the call arrives, apologize, step out of the room to talk, then turn off the phone when you're through as a show of goodwill.

"In that way, you're assuring the other person that the rest of your conversation will go undisturbed," says Forni, in a voice so smooth you could spread it on focaccia.

Don't be all thumbs. Are your colleagues twiddling their thumbs in meetings? Odds are they're checking e-mail on their BlackBerries.

The phenomenon is an unfortunate side effect of companies demanding employees be accessible 24/7, says Katherine Spencer Lee, executive director at Robert Half Technology. "Ten minutes into a meeting, people feel compelled to check their mail. Next thing you know...no one is listening."

Lee suggests companies distinguish between "411" meetings—informal, informational gatherings where people should feel free to read e-mail messages—and "911" confabs where strict attention must be paid. "At important meetings, I make everyone check their weapons at the door, or at least turn off their cell phones and BlackBerries," she says. You may have to let some gadgets in because many people now use their notebooks or PDAs to take meeting notes.

Put the lid on vids. Popping a DVD into your laptop during a long flight is fine if you want to watch *Bambi*, but not so good when you plan to view *Bambi in Bondage*. You could use a plastic screen like 3M's Notebook Privacy Filter (\$30 to \$100, depending on size) to shield your machine from shoulder surfers. (These are handy when you're working on confidential materials, too.) A better idea is simply to stick to family-friendly material when you're in public, says Colleen Rickenbacher, author

NEXT UP

TiVo With a Twist



THINK TV and recording go together like peanut butter and jelly? Check out a tasty new TiVo combination plate: Humax's latest TiVo box, the **DRT 800**, which builds in a DVD recorder. With it, you can save 80 hours of TV on the unit's hard drive and burn the best shows to a DVD to save for posterity or to tote along if you must leave the couch. The unit has front AV inputs and a DV input you can use to connect a camcorder and transfer home movies to DVD. Street-priced at \$499 (not including a \$100 rebate), it requires a monthly fee for TiVo service of \$13 for the first box (\$7 per box for additional TVs).

of *Be on Your Best Business Behavior* (Brown Books, 2004).

Ask seatmates if your headphone's volume is too high, so you don't share your movies or music with everyone in the cabin. And if the traveler next to you displays something offensive on their screen, gently request that they save it for the hotel room—and ask a flight attendant to intercede if they get surly.

Ten years ago, brandishing a cell phone or a text pager in public was a badge of coolness. But these days it's just boorish, says Rickenbacher. "Now etiquette has started to become cool again."

Contributing Editor Dan Tynan never talks with his mouth full.

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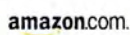
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Fast Track

Syntax Groups emerges as the rising star of the LCD television market.



The Olevia line of LCD televisions offers sharp, vivid pictures and great image brilliance and clarity.

➤➤➤ JUMPING INTO an already-crowded market for LCD televisions in sluggish economic times may not seem like a very good idea to most people. But to James Li and Denis Karpeles of Syntax Groups Corp. (www.syntaxgroups.com), it was a golden opportunity to showcase the unique value proposition Syntax brings to the market.

It was because of the Syntax value proposition that Karpeles, who heads sales and marketing for Syntax in the US, believed the company would succeed when it began operations here a year ago. James Li as chief executive officer meanwhile anchored the mission-critical manufacturing operations. The Syntax value proposition is multi-faceted, and includes:

- ▶ Superior technology backed by quality engineering and peerless components.
- ▶ Some of the lowest prices in the marketplace, notwithstanding Syntax's rich product specifications and high quality.
- ▶ An industry-leading warranty that includes unique free first-year on-site service and rigorous quality control re-testing before consumers carry their purchases home.
- ▶ A comprehensive, broad channel distribution plan catering to every individual buying preference.

Among the many buying choices Karpeles and his team arranged are Staples and Staples.com, hhgregg, ABC Warehouse, American TV, Micro Center, RC Willey, DataVision,

Hartco, C4Sure, TigerDirect.com, Target.com, Amazon.com, Buy.com, Ecost.com, PC Mall, Dakota TV & Rentals, Buy Rite, Rent-A-Center, PC Connection, Tech Depot, and CompuSmart.

Zooming market share

As a result of this superior total value proposition, this aggressive and intelligent upstart has gone from zero to approximately 5% of the LCD television market—a remarkable achievement in a short period of time and amid some of the biggest brand names in consumer electronics.

Almost immediately upon entering the market, the accolades from independent sources for Syntax and its Olevia line of LCD televisions began pouring in. The LCD reviewer at *HDTV Magazine* wrote, "I like the unit so much, I plan on buying it from Syntax and using it as my bedroom television as well as my reference LCD test bed." And an unsolicited buyer posted these comments at Tigerdirect.com: "Man, this is really a magnificent deal; good quality with good price—what more can you ask for? Totally beyond my expectation. It looks to me that Syntax is a rising star..."

These and other reviewers rave about the custom features and value of Syntax's LCD television offerings. These features include the highest contrast ratios for sharp, vivid pictures, dual TV tuners, VGA and TV split screens, DVI inputs with HDCP,

ultra-thin flat-panel LCD screens, fast refresh rates and response times, and 14-16 rows of transistors for image brilliance and clarity.

And Syntax has been making waves and gathering attention at major industry trade gatherings. At this fall's RetailVision showcase, Syntax was nominated for the coveted "Best of RetailVision" award in the Best Digital Home category, prompting one observer to note that "it's taken Syntax only five months to accomplish what usually takes two years."

"We're not surprised by our success because we believe so strongly in the quality and value of what we offer to customers," notes Karpeles. "With our diverse marketing, messaging, and channel plans, we'll continue to expand our market presence and market share because we believe customers recognize a great deal and high quality when they see it."

Karpeles' comments are echoed by company CEO Li. "We are extremely pleased with our results to date, and are gratified by the outstanding support we have received from our technology and manufacturing partners as well as our associates in the retail channel," said Li. "Consumers who are intrigued by incorporating an LCD TV into their homes or offices are quickly realizing the true value of our Olevia brand."

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TOP 100

EDITED BY THE REVIEWS STAFF

SPOTLIGHT: GRAPHICS BOARDS



OUR TOP-RANKED AGP and PCI Express boards, the MSI NX6800GT and the PowerColor X800 XT PCI-Express, respectively, combine top performance with great software.

These Hot Graphics Got Game

For the first time in years, 3D games have jumped ahead of the hardware that runs them—specifically, high-end graphics boards. You no longer have to worry that you'll spend \$300 to \$500 on the latest graphics board only to wait months before a game can challenge it. Games such as Doom 3 and Far Cry are here now. And they are challenging, to both you and your graphics board.

Here's another complication: Boards with the PCI

Express interface have become available, with twice the bandwidth of the 8X AGP interface. This raises some questions: Is PCI-X required for top performance? Is it time to upgrade your computer along with your graphics?

Our Test Center put 17 boards—9 AGP and 8 PCI-X—through the rigors of cutting-edge game graphics. In addition to performance boards, we looked at 3 value-price boards with midrange chip sets from NVidia and ATI.

**PC World
debuts new ranking
system. See page
143.**

143 IN THE CHARTS

We introduce our revamped charts, which now use a star-rating-based system to rank products.

145 NOTEBOOK PCs

Two new notebooks make our chart this month. One earned the highest star rating we've awarded recently.

147 MONITORS

New real-world testing procedures used with 19-inch LCDs yielded one clear winner with a very nice price.

149 DVD DRIVES

Prices fall as more DVD+R drives offer 16X write speeds, the reported maximum speed for write-once DVDs.

151 DIGITAL CAMERAS

These point-and-shoot models pack up to 7.2 megapixels.



153 MORE REVIEWS

Find low-cost laser printers, photo inkjets, and feature-rich PDAs in our recap of previous *Top 100* charts.

As we started this story, numerous questions came to mind: How many power leads will all these boards need to work in your system? Are the boards slot hogs? Can they tame the incredible computational demands of Doom 3? Plus, the question on every gamer's mind: Which graphics board outperforms the rest?

Gamers aren't the only group looking for answers. Multimedia fans want to know what video ports these boards offer. In addition, which companies provide the best hardware and software bundles?

The answers to these questions surprised us and offered insight into what's important when you're looking to upgrade.

AGP VERSUS PCI EXPRESS

OUR TEST RESULTS suggest that there's no immediate reason to dump your AGP motherboard solely to boost graphics performance. Today's graphics boards do not fully take advantage of the 8X AGP bus, so the AGP-interface versions of high-end boards can give you their best. Gaming performance, measured in frames per second, is still mostly determined by your graphics card's speed and your PC's CPU.

On the other hand, a new PCI-X motherboard provides both greater potential performance and a hedge against obsolescence. Therefore, many people who need to replace their aging PCs will likely find it worthwhile to opt for a PCI Express graphics board/motherboard combination.

A note on the frame rates that we report in our chart: We cannot directly compare the frame rates of AGP boards with those of their PCI Express counterparts—even where the graphics chip set and memory specifications are the same. The reason for this is that we were unable to set up matching test beds with dual PCI-X and AGP support—the only scenario that would have allowed us to compare PCI-X and AGP test scores. At press time, no motherboards offered dual AGP/PCI-X support, and few are likely to do so in the

near future. You'll find the specific configurations that we did use at the bottom of our chart on the following page.

POWER GRAPHICS

IN A VERY CLOSE race, and in a field of boards dominated by NVidia GeForce 6800 series and ATI Radeon X800 graphics processors, the top performer (if occasionally by a thin margin) in the AGP category was EVGA's E-GeForce 6800 Ultra. The only board we tested that came with NVidia's GeForce 6800 Ultra graphics processor, it produced the fastest frame rates in five of our seven gaming tests. This card, however, earned a number three ranking in the AGP portion of our chart for two reasons: a weak software bundle and a similarly limited support policy compared with the first- and second-ranked boards.

After the EVGA we saw a virtual tie in performance among five other cards from ATI, BFG Tech, MSI, PNY, and PowerColor—all using either ATI's Radeon X800 XT chip or NVidia's GeForce 6800 GT (which has a lower clock speed than the 6800 Ultra). The top-ranked MSI NX6800GT offers a stellar software bundle.

Performance results were even closer among the top four PCI-X boards. The one board in the PCI-X category that was powered by NVidia's GeForce 6800 GT—PNY's Verto 6800GT PCI Express—was our top performer, though

by only a small margin. Frame rate differences among the next three—from Asus, ATI, and PowerColor, all using



OUR TOP-PERFORMING boards, overall, were the EVGA E-GeForce 6800 Ultra (AGP) and PNY Verto 6800GT PCI Express.

ATI's Radeon X800 XT—were minor.

Running games—especially complex ones like Doom 3 and Far Cry—at a high, 1600-by-1200-pixel resolution and turning on advanced graphics settings such as antialiasing and anisotropic filtering exacts a toll on frame rates. When it ran Doom 3, the EVGA E-GeForce 6800 Ultra, for example, dropped from an average of 60 frames per second at 1024-by-768 resolution to 49 fps at 1600 by 1200. Adding antialiasing at the higher resolu-

tion, dropped it down to a mere 32 fps. For the most part, the slower the board, the greater the frame rate loss.

VALUE CARDS

If \$400 to \$500 is too steep a price to pay for better graphics, you'll get a fine value in EVGA's \$250 E-GeForce 6600GT, which secured the number four slot and the Best Buy award on the PCI-X portion of our chart. The 6600GT has a slower core speed than the GeForce 6800

series and half the graphics DDR RAM of the 6800 GT boards, but you're paying, in some cases, just half as much.

When the EVGA E-GeForce 6600GT ran Doom 3, the board delivered a very respectable 55 fps at a resolution of 1024 by 768 with antialiasing turned off. Run the game at 1600 by 1200 with antialiasing switched on, and you hit the card's limitations—its 16-fps frame rate was about half that of the fastest boards.

Boards with ATI's value chips—Asus's

TOP 100

TEST
Center

TOP 10 GRAPHICS BOARDS

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45636 for full product specifications.

AGP BOARD		Features and specifications		Performance ¹	Bottom line
1	MSI NX6800GT Best Buy \$455 (★★★★★) find.pcworld.com/45272	• NVidia GeForce 6800 GT graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, S-Video-out • Extras: Photo, multimedia, and utility apps; 3 games and 14 demos	• Doom 3: 45 fps • Halo: 75 fps • Installation: Excellent	This board performs on a par with other GeForce 6800 GT-based boards and offers the best software of the group.
2	BFG Tech GeForce 6800 GT Overclocked \$400 (★★★★☆) find.pcworld.com/45264	• NVidia GeForce 6800 GT graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, 15-pin VGA-out, S-Video-out • Extras: Three demo games	• Doom 3: 46 fps • Halo: 78 fps • Installation: Excellent	Though factory overclocked, this card was only marginally faster than other GeForce 6800 GT-based models.
3	EVGA E-GeForce 6800 Ultra \$500 (★★★★★) find.pcworld.com/45270	• NVidia GeForce 6800 Ultra graphics chip • 256MB GDDR3 SDRAM	• Ports: Two DVI-out, S-Video-out • Extras: None	• Doom 3: 48 fps • Halo: 84 fps • Installation: Excellent	The top performer, this premium-price board outscores other GeForce 6800 GT- or Radeon X800 XT-based boards.
4	ATI Radeon X800 XT Platinum Edition \$499 (★★★★★) find.pcworld.com/42658	• ATI Radeon X800 XT graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, 15-pin VGA-out, S-Video-out and composite-in/out, component-out • Extras: No bundled apps or games	• Doom 3: 41 fps • Halo: 82 fps • Installation: Excellent	More media inputs/outputs than NVidia-based boards, and frame rates comparable to GeForce 6800 GT models.
5	Asus V9999 Gamer Edition \$457 (★★★★★) find.pcworld.com/45260	• NVidia GeForce 6800 graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, composite-out • Extras: Webcam, Media Show SE 2.0, three games, six demos,	• Doom 3: 36 fps • Halo: 64 fps • Installation: Excellent	Not as quick as 6800 GT boards—especially at high resolutions—but it sports healthy hardware and software extras.
PCI EXPRESS BOARD					
1	PowerColor X800 XT PCI-Express \$500 (★★★★★) find.pcworld.com/45282	• ATI Radeon X800 XT graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, 15-pin VGA-out, S-Video-out and composite-in/out, component-out • Extras: DVD suite, two games	• Doom 3: 42 fps • Halo: 77 fps • Installation: Excellent	Of the PCI Express boards, only the PNY Verto outpaced this unit, which offers the best software bundle.
2	Asus Extreme AX800XT /ZDT \$599 (★★★★★) find.pcworld.com/45258	• ATI Radeon X800 XT graphics chip • 256MB GDDR3 SDRAM	• Ports: Two DVI-out, S-Video-out and composite-out • Extras: Webcam, photo and game apps	• Doom 3: 39 fps • Halo: 77 fps • Installation: Fair	Slowest of the PCI Express-based Radeon X800 boards, though not by much. Offers a nice bundle of extras.
3	PNY Verto 6800GT PCI Express \$399 (★★★★★) find.pcworld.com/45276	• NVidia GeForce 6800 GT graphics chip • 256MB GDDR3 SDRAM	• Ports: Two DVI-out, S-Video-out • Extras: Color-calibration utility	• Doom 3: 48 fps • Halo: 75 fps • Installation: Fair	Easily the fastest of the PCI Express boards tested; offers dual digital LCD display support. No bundled software.
4	EVGA E-GeForce 6600GT Best Buy \$250 (★★★★★) find.pcworld.com/45268	• NVidia GeForce 6600 GT graphics chip • 128MB GDDR3 SDRAM	• Ports: DVI-out, 15-pin VGA-out, S-Video-out	• Doom 3: 34 fps • Halo: 59 fps • Installation: Excellent	Our value pick, this board delivered good performance at lower resolutions. Fine choice for the gamer on a budget.
5	ATI Radeon X800 XT \$399 (★★★★★) find.pcworld.com/45262	• ATI Radeon X800 XT graphics chip • 256MB GDDR3 SDRAM	• Ports: DVI-out, 15-pin VGA-out, S-Video-out and composite-in/out, component-out • Extras: No bundled apps or games	• Doom 3: 42 fps • Halo: 77 fps • Installation: Fair	This solid unit runs on a par with GeForce 6800GT-based boards except at the highest graphics settings.

FOOTNOTES: ¹ Street price as of 10/19/04. ² Performance is based on a weighted average of frames per second. **HOW WE TEST:** For AGP boards, we used a Micro Express PC with a 2.2-GHz Athlon 64 3500+ processor, 1GB DDR SDRAM, a SATA-RAID (striped) drive array, and Windows XP Pro. We tested PCI Express boards on a Micro Express with a 3.66-GHz Pentium 4 processor, 1GB DDR SDRAM, SATA-RAID (striped), and Windows XP Pro. We measure performance as an average of frame rates seen at different settings when running the games Doom 3, Far Cry, Halo, Splinter Cell, Unreal Tournament 2004, Wolfenstein Enemy Territory, and a Comanche 4 benchmark demo. We measure frame rates at 1024-by-768 and 1600-by-1200 resolutions, both using 32-bit color with antialiasing turned on and off. Star ratings are based on performance, design, and features, but not price. **CHART NOTE:** See find.pcworld.com/10860 for details on Star Ratings. Price is a factor in Best Buy honors only.

Extreme AX 600XT, MSI's RX600XT-VTD128E, Sapphire's Radeon X700 Pro—did not earn places on the chart. They are too slow for truly entertaining play with games such as Doom 3 or Far Cry at higher resolutions. The Radeon X600 cards delivered an unplayable 5 fps when run at 1600-by-1200-pixel resolution with antialiasing turned on. The Radeon X700 card delivered 10 fps. Both boards, however, provide fine performance when running older, less-demanding games such as Unreal Tournament 2004. Both of the Radeon X600 cards delivered 65 fps at a 1024-by-768 resolution with antialiasing turned off. The Radeon X700 Pro delivered 67 fps at this resolution.

PORTS

ASIDE FROM performance and price, these boards differ in the ports they offer. All have at least one DVI port and support for a 15-pin VGA connection and two displays. A few boards—the Asus Extreme AX800XT /2DT, the EVGA E-GeForce 6800 Ultra, and the PNY Verto 6800GT PCI Express—offer two DVI ports, so you can set up dual LCDs using the digital ports, which typically provide a better

UPGRADE TIPS

Maximizing Performance

- 1** For best performance, get the latest drivers straight from the chip manufacturer—and update them regularly. The newest drivers may slightly raise your frame rate on a video game.
- 2** If you don't have at least a 2-GHz CPU, you're better off investing in a new processor before a new graphics board. A slow processor can't properly feed top-of-the-line GeForce 6800- and Radeon X800-based boards.
- 3** The solution may not be to buy a new graphics board at all if you're playing a CPU-bound game. With these games,

only more system processor power, not graphics power, can increase frame rates.

- 4** Most boards require supplemental power from the same type of connector used for internal hard drives. It's a lot easier to insert the power connector before you put the board in the AGP or PCI Express slot. We learned the hard way.

- 5** The massive power of Doom 3 taxes even the most expensive graphics board. Don't become obsessed with running the game with settings maxed out. The game still looks amazing at 640-by-480 and 800-by-600 resolutions.



THE BLUE-AND-ORANGE fan setup on Sapphire's Toxic Radeon X800 Pro looks loud, but the noise level is surprisingly quiet.

image than do analog ports. (All of the boards come with adapters that convert the DVI port into a 15-pin analog connection.) S-Video-out, for hook up to a TV, is common to all the models, and about half offer composite-out, as well. Most of the boards with ATI graphics also support S-Video-in, which is useful for capturing video into your PC, though in many cases you have to provide your own video-capture software. None of these cards come equipped with TV tuners.

POWER, HEAT, AND NOISE

AS GRAPHICS BOARDS get more powerful, they draw more power; however, all of the boards—even the EVGA E-GeForce 6800 Ultra, whose box specified that a

450-watt power supply was required—ran flawlessly on our test beds, which were outfitted with 300-watt power supplies. NVidia says that it originally set the power specification for the 6800 Ultra chip to 480W in order to address the overclocking needs of gaming enthusiasts, who will get better performance out of a bigger power supply. NVidia has since lowered the official power spec to 350 watts.

Greater power also generates more heat. Graphics processors soak up nearly as much power as your machine's processor, so these boards pack a heat sink and fan combination that can become hot, noisy, and bulky. Though only one AGP card, the Sapphire Toxic Radeon X800 Pro, was so large as to cover up our test bed's adjacent PCI slot, we left that next slot empty for all the boards, to help cool air flow to the fan and heat sink. Nevertheless, the cartoonlike blue fan with an orange shroud on the Sapphire board was one of the quietest. By contrast, ATI's and PowerColor's Radeon X800XT boards emitted louder, high-pitched fan noises.

LOW-COST UPGRADES

IF YOU DON'T plan to play the latest 3D action games, you really don't need a Radeon X800- or GeForce 6800-based board. For the budget-minded, we recommend EVGA's \$250 E-GeForce 6600GT. Another option is the \$205 Sapphire Radeon X700 Pro. Though this card did not make our chart, it did outperform the ATI Radeon X600-based cards, and it kept up with the \$499 ATI Radeon X800 XT Platinum Edition at low resolutions on older games. Both boards pounded out more than 100 fps in our Wolfenstein Enemy Territory test at 1024-by-768-pixel resolution with antialiasing turned off.

Still, Doom 3's cinematic graphics have set a new standard for hardware-taxing game play. A board that can handle this game today should be able to hang with the heavies for at least the year to come.

—Patrick Norton



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INSIDE INFO

IN THE CHARTS

EDITED BY THE REVIEWS STAFF

New Look, New Rankings for the PC World Top 100

THIS ISSUE LAUNCHES significant changes to the *Top 100*. What you will find in this month's charts, and those in the future, is an easier-to-read format and a simpler product rating system. The latter represents the most radical revision of the charts. Previously, our complex scoring system included a numeric ranking, an overall rating, and a Best Buy award, all to do one thing: signify a product's value based on its price, performance, design, and support. On top of that, we added our popular Star Ratings as a measure of a product's quality. It was, perhaps, too much of a good thing.

As you'll see, this month's charts are organized by product star rating. Still an indicator of product quality, the star rating takes into account design excellence, overall performance, vendor support, and breadth of features—but does not include price. This new approach places the best models, regardless of price, at the top of each chart. You'll still find our *PC World* Best Buys—fine products that are not necessarily best in class, but that represent especially good values for the dollar.

It all adds up to streamlined charts that help you locate the

best products and values more quickly. Moving to this new format helps us achieve another improvement that we think you'll like: more-timely product reviews on our Web site, which include current pricing, additional specifica-



HP'S PAVILION Dv1000 excels at playing multimedia.

tions, product photos, and complete write-ups detailing what's good and bad about newly released products.

NOTEBOOKS

PLEASURE COMES before business on the desktop replacement list this month. Equipped to handle multimedia, HP's Pavilion Dv1000 earned the highest star rating we've awarded recently to a desktop replacement model. The sleek Dv1000 doubles as a

DVD player: A dedicated power button activates the DVD-ROM/CD-RW drive for watching movies or playing audio CDs, so you don't have to start Windows. You can watch two flicks back-to-back during the laptop's 4-hour battery life, and handle playback with a \$15 optional remote control.

For getting back to work at your desk, HP's Xb2000 docking station—a \$300 option included in our listed price—adds great-sounding speakers and an internal bay that will house a 160GB hard drive.

The HP Compaq Business Notebook Nc6000 remains our Best Buy in the desktop replacement portion of the chart for the ninth month in a row. Its moderate price and office-worthy features, such as gigabit ethernet and support for both 802.11a and 802.11g wireless, continue to be an unbeatable combination.

Dell's Latitude D600 makes the desktop replacement list with a low price for its many features and fast speeds. The D600 has both a touchpad and an eraserhead pointing stick, and the media bay is modular, allowing you to swap out the DVD burner for a second hard drive or a second battery—though the primary battery lasted 4 hours in our tests.

Hot Cameras

PLENTY OF megapixels and lots of zoom are becoming staples of the best point-and-shoot digital cameras. This month we tested the new Sony Cyber-shot DSC-P150, which reaches 7.2 megapixels, and the Nikon Coolpix 4800, which offers a lengthy 8.3X optical zoom. However, the Sony Cyber-shot DSC-W1 continues to reign at the top of the chart.

More on the Web

PC World uses its industry-standard benchmarking application, WorldBench 5, to evaluate desktop PCs, notebooks, and tablet PCs. We run a number of real-world applications performing real-world computing tasks. For more information on the WorldBench 5 tool, visit find.pcworld.com/44262. Browse to find.pcworld.com/10860 for more details about *PC World's* Star Ratings.

The Top 100 Team

Carla Thornton, a freelance writer, and PC World editors Laura Blackwell, Eric Butterfield, Tracey Capen, Rebecca Freed, Melissa J. Perenson, Narasu Rebbapragada, and Alan Stafford contributed to the Top 100 section this month. Ulrike Diehlmann, Julio Giannobile, Elliott Kirschling, Jeff Kuta, Tony K. Leung, Thomas Luong, and William Wang of the PC World Test Center conducted testing on the products reviewed in this section, with logistical support provided by Julian Weatherby.

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TOP 15 NOTEBOOK PCs

TOP 100

TEST
Center

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45110 for reviews of all products tested this month and ranked in this chart.

DESKTOP REPLACEMENT		Features and specifications ¹		Performance	Bottom line
1	HP Pavilion Dv1000 \$1933 (★★★★★: NEW) find.pcworld.com/44952	<ul style="list-style-type: none">• 1.5-GHz Pentium M 715• 14-inch screen wide-screen• 6.4 pounds	<ul style="list-style-type: none">• Fixed DVD-ROM and CD-RW combo drive• 802.11g, six-in-one media card reader, docking station, wireless keyboard/ mouse	<ul style="list-style-type: none">• WorldBench 5 score: 64• Overall design: Very Good• Tested battery life: 4:02	A docking station and great speakers make this well-designed notebook good for playing multimedia.
2	Dell Inspiron 8600 \$2549 (★★★★★: Nov 04) find.pcworld.com/44058	<ul style="list-style-type: none">• 2-GHz Pentium M 755• 15.4-inch wide-screen• 8.3 pounds	<ul style="list-style-type: none">• DVD+RW drive• 802.11g, Corel WordPerfect Productivity Pack	<ul style="list-style-type: none">• WorldBench 5 score: 90• Overall design: Very Good• Tested battery life: 4:32	Convenient design touches and good sound make up for this speedy laptop's thick case.
3	HP Compaq Business Nc6000 Best BUY \$1874 (★★★★★: May 04) find.pcworld.com/41093	<ul style="list-style-type: none">• 1.6-GHz Pentium M 725• 14.1-inch screen• 6.6 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive• Touchpad and eraserhead pointing devices• 802.11a/g, Bluetooth, gigabit ethernet	<ul style="list-style-type: none">• WorldBench 5 score: 74• Overall design: Very Good• Tested battery life: 6:23	Lightweight corporate notebook comes with dual wireless capabilities and has longest battery life here.
4	Dell Latitude D600 \$2376 (★★★★★: NEW) find.pcworld.com/44960	<ul style="list-style-type: none">• 2-GHz Pentium M 755• 14-inch screen• 6.4 pounds	<ul style="list-style-type: none">• DVD+RW drive• Touchpad and eraserhead pointing devices• 802.11g, Bluetooth, gigabit ethernet	<ul style="list-style-type: none">• WorldBench 5 score: 81• Overall design: Very Good• Tested battery life: 4:02	Fast and light, this full-featured notebook offers a multipurpose bay and dual pointing devices.
5	Toshiba Satellite P25-S670 \$2599 (★★★★★: Aug 04) find.pcworld.com/42552	<ul style="list-style-type: none">• 3.2-GHz Pentium 4 desktop• 17-inch wide-screen• 11.3 pounds	<ul style="list-style-type: none">• DVD±RW/-RAM drive• 802.11a/g, SD Card slot, TV tuner, remote control	<ul style="list-style-type: none">• WorldBench 5 score: 78• Overall design: Very Good• Tested battery life: 1:17	Big Media Center notebook has two modular bays and a DVD burner that writes all DVD formats.
ALL-PURPOSE NOTEBOOK					
1	Acer TravelMate 8000 \$2499 (★★★★★: Sept 04) find.pcworld.com/43074	<ul style="list-style-type: none">• 2-GHz Pentium M 755• 15-inch screen• 7.6 pounds	<ul style="list-style-type: none">• DVD±RW/-RAM drive• 802.11g, Bluetooth, gigabit ethernet, four-in-one media card reader	<ul style="list-style-type: none">• WorldBench 5 score: 89• Overall design: Very Good• Tested battery life: 4:38	This business laptop boasts elegant design, moderate weight, and a flexible DVD burner.
2	IBM ThinkPad R51 Best BUY \$1699 (★★★★★: Sept 04) find.pcworld.com/43118	<ul style="list-style-type: none">• 1.5-GHz Pentium M 715• 15-inch wide-screen• 7.4 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive• Touchpad and eraserhead pointing devices• 802.11g, gigabit ethernet	<ul style="list-style-type: none">• WorldBench 5 score: 67• Overall design: Outstanding• Tested battery life: 3:54	The slim R51 suits users who don't require many bells and whistles. Excellent keyboard.
3	Polywell PolyNote 3015AW \$2499 (★★★★★: Nov 04) find.pcworld.com/44062	<ul style="list-style-type: none">• 2-GHz Pentium M 755• 15.4-inch wide-screen• 7.6 pounds	<ul style="list-style-type: none">• DVD+RW drive• 802.11g, gigabit ethernet, four-in-one media card reader	<ul style="list-style-type: none">• WorldBench 5 score: 98• Overall design: Very Good• Tested battery life: 3:03	This fast laptop has a firm keyboard, a swappable DVD burner, and audio buttons.
4	IBM ThinkPad T42 \$2299 (★★★★★: Sept 04) find.pcworld.com/43080	<ul style="list-style-type: none">• 1.7-GHz Pentium M 735• 15.1-inch screen• 6.9 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive• Touchpad and eraserhead pointing devices• 802.11g, gigabit ethernet	<ul style="list-style-type: none">• WorldBench 5 score: 83• Overall design: Very Good• Tested battery life: 4:09	This impressive business portable has good speed and an outstanding keyboard.
5	Toshiba Satellite A55-S326 \$1499 (★★★★★: Nov 04) find.pcworld.com/44064	<ul style="list-style-type: none">• 1.6-GHz Pentium M 725• 15-inch screen• 6.8 pounds	<ul style="list-style-type: none">• Fixed DVD±RW/-RAM drive• Touchpad pointing device• 802.11g	<ul style="list-style-type: none">• WorldBench 5 score: 73• Overall design: Good• Tested battery life: 4:47	Easy-to-use audio controls and a firm keyboard highlight this inexpensive, midweight notebook.
6	Fujitsu LifeBook S7010 \$1919 (★★★★★: Oct 04) find.pcworld.com/43354	<ul style="list-style-type: none">• 1.7-GHz Pentium M 735• 14.1-inch wide-screen• 5.1 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive• Touchpad pointing device• 802.11g, Bluetooth, gigabit ethernet	<ul style="list-style-type: none">• WorldBench 5 score: 75• Overall design: Good• Tested battery life: 3:51	The light S7010 is a good choice for business travelers, but its hard drive is not user-upgradable.
ULTRAPORTABLE					
1	Dell Latitude X300 \$2385 ² (★★★★★: Dec 04) find.pcworld.com/44250	<ul style="list-style-type: none">• 1.4-GHz Pentium M LV 738• 12.1-inch screen• 4.0 pounds	<ul style="list-style-type: none">• External DVD+RW drive• 802.11g, gigabit ethernet, SD Card slot, docking station	<ul style="list-style-type: none">• WorldBench 5 score: 73• Overall design: Very Good• Tested battery life: 2:31	This relatively fast Latitude is expandable thanks to the best docking station we've seen in this class.
2	Fujitsu LifeBook P7010D \$2149 (★★★★★: Dec 04) find.pcworld.com/44260	<ul style="list-style-type: none">• 1.1-GHz Pentium M ULV 713• 10.6-inch screen• 4.1 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive• 802.11a/g, four-in-one media card reader, fingerprint scanner, Microsoft Works 7	<ul style="list-style-type: none">• WorldBench 5 score: 58• Overall design: Very Good• Tested battery life: 5:15	Light unit with fingerprint reader lasts ages on a battery charge, and has extra card slots.
3	Dell Inspiron 700m Best BUY \$2072 (★★★★★: Dec 04) find.pcworld.com/44246	<ul style="list-style-type: none">• 1.8-GHz Pentium M 745• 12.1-inch wide-screen• 4.8 pounds	<ul style="list-style-type: none">• DVD+RW drive• 802.11g, SD Card slot, Corel WordPerfect Productivity Pack	<ul style="list-style-type: none">• WorldBench 5 score: 80• Overall design: Good• Tested battery life: 2:45	This strongly built, lightweight laptop offers a wide-aspect screen but a cramped keyboard.
4	IBM ThinkPad X40 \$2299 (★★★★★: Sept 04) find.pcworld.com/43066	<ul style="list-style-type: none">• 1.2-GHz Pentium M LV• 12.1-inch screen• 5.6 pounds	<ul style="list-style-type: none">• DVD-ROM and CD-RW combo drive ³• 802.11g, Bluetooth, gigabit ethernet, SD Card slot	<ul style="list-style-type: none">• WorldBench 5 score: 55• Overall design: Good• Tested battery life: 2:36	Ultraportable ThinkPad boasts the finest keyboard for its size. Optical drive is USB- or dock-based.

FOOTNOTES: ¹Features listings are not exhaustive. ²Price includes extra-cost docking station. ³DVD-ROM and CD-RW combination drive is in the docking station. CHART NOTES: Street price as of 9/27/04. Weight includes AC adapter, power cord, and optical drive. Optical drives are removable unless otherwise noted. All tests designed and conducted by the PC World Test Center. All rights reserved.



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TOP 10 MONITORS

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45248 for reviews of all products tested this month and ranked in this chart.

THIS MONTH, WE TESTED 15 LCD monitors under new lighting and ergonomic conditions. No other monitor approached the ViewSonic VP912b's scores for text quality, and only the Philips Brilliance 190P5EB (retested this month) bested its graphics scores. In addition to its exemplary image quality, the VP912b has a fast 12ms pixel response rate, which should mean fewer hitches in games and movies. Its display quality and features put the ViewSonic in first place, but it's the bang for the buck that earns it a Best Buy badge. Eizo Nanao's pricey FlexScan L768 combines high performance with professional features and an ultrathin



VIEWSONIC'S VP912b tops our list.

bezel to land the second spot. Dell's UltraSharp 1905fp illustrates a change in our Top 100 chart format: Though the Dell's features and performance place it third in our qualitative rankings, it wins Best Buy honors for value: It has the lowest price of any display in the top five. The dignified-looking LG Electronics Flatron L1930B glides onto the chart with good looks that aren't restricted to the screen; the back is attractive, too, as is the price. LaCie's first 19-inch LCD monitor, the Photon19vision, is a well-rounded model suitable for common tasks. The retested Samsung SyncMaster 193P remains a strong contender.

19-INCH LCD MONITOR	Features and specifications	Performance	Bottom line
1 ViewSonic VP912b Best \$700 (★★★★★ NEW) find.pcworld.com/44986	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 12ms response time 16.5 pounds 	<ul style="list-style-type: none"> Text quality: Outstanding Graphics quality: Outstanding Usability: Very Good 	Unobtrusive, thin-bezel design is highly adjustable, and the swift screen serves up the best overall image quality on the chart.
2 Eizo Nanao FlexScan L768 \$899 (★★★★★ NEW) find.pcworld.com/45206	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 25ms response time 15 pounds One-port USB 2.0 hub 	<ul style="list-style-type: none"> Text quality: Very Good Graphics quality: Very Good Usability: Very Good 	Advanced screen settings and five fine-contrast modes make this a display for the demanding user—but the price is pretty demanding, too.
3 Dell UltraSharp 1905fp Best \$629 (★★★★★ NEW) find.pcworld.com/45204	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 20ms response time 15.3 pounds Four-port USB 2.0 hub 	<ul style="list-style-type: none"> Text quality: Very Good Graphics quality: Very Good Usability: Very Good 	Four USB 2.0 ports and a full range of physical adjustments make this nicely designed thin-bezel monitor a pleasure to use.
4 Samsung SyncMaster 193P \$779 (★★★★★ RETESTED) find.pcworld.com/42444	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 20ms response time 15.6 pounds 	<ul style="list-style-type: none"> Text quality: Good Graphics quality: Good Usability: Very Good 	Retested unit's screen looked less impressive when compared with those of newer models, but the monitor remains highly adjustable.
5 Philips Brilliance 190P5EB \$749 (★★★★★ RETESTED) find.pcworld.com/42438	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 25ms response time 18.3 pounds 	<ul style="list-style-type: none"> Text quality: Good Graphics quality: Outstanding Usability: Good 	Vibrant, accurate colors earn this retested model the highest graphics score on the chart. Contrasting buttons make using this unit a breeze.
6 LG Electronics Flatron L1930B \$580 (★★★★★ NEW) find.pcworld.com/44980	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt and swivel 25ms response time 15.9 pounds Three-port USB 1.1 hub 	<ul style="list-style-type: none"> Text quality: Very Good Graphics quality: Very Good Usability: Very Good 	Color-adjusting software fine-tunes screen settings on this stately unit; its elegant, covered back suits it to situations where visitors would see it.
7 LaCie Photon19vision \$699 (★★★★★ NEW) find.pcworld.com/44978	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 25ms response time 15.8 pounds Three-port USB 1.1 hub 	<ul style="list-style-type: none"> Text quality: Good Graphics quality: Very Good Usability: Outstanding 	Stand and screen are easy to adjust so they can handle different tasks by day and by night, making this unit appropriate for general use.
8 Sharp LL-191A \$599 (★★★★★ NEW) find.pcworld.com/44984	<ul style="list-style-type: none"> Input: One analog Adjustment: tilt 16ms response time 17.2 pounds 	<ul style="list-style-type: none"> Text quality: Very Good Graphics quality: Good Usability: Very Good 	Buttons are set on the underside of this inexpensive model's bezel, and the headphone jack is intelligently placed on the stand.
9 AG Neovo X-19AV \$749 (★★★★★ NEW) find.pcworld.com/44970	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustment: tilt 25ms response time 17.4 pounds 	<ul style="list-style-type: none"> Text quality: Good Graphics quality: Very Good Usability: Good 	Imposing, attractive model shows its stuff through an extra-hard, easy-to-clean optical filter glass, but we've seen better text quality.
10 HP F1903 \$630 (★★★★★ NEW) find.pcworld.com/44974	<ul style="list-style-type: none"> Inputs: one analog and one digital¹ Adjustments: tilt, swivel, pivot, and height 25ms response time 17.2 pounds 	<ul style="list-style-type: none"> Text quality: Fair Graphics quality: Good Usability: Good 	Buttons are well labeled, but most other units on the chart have better graphics, and the F1903's text display was the poorest of any on the chart.

FOOTNOTES: ¹Digital inputs require a graphics card with a DVI digital output, which we use to test all monitors that offer DVI. **HOW WE TEST:** Judges rate how well each monitor displays 13 text and graphics images at a native resolution of 1280 by 1024. Some screens are from DisplayMate for Windows (www.displaymate.com). See find.pcworld.com/34613 for testing details. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Prices given are street prices as of 10/15/04. Star ratings are based on text quality, graphics quality, features, ease of use, and service and support. Price is taken into consideration for Best Buy honors only. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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TOP 10 DVD DRIVES

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45334 for full product specifications.

FASTER SPEEDS, FALLING PRICES: Nowhere is this axiom more evident than in this month's chart, which reflects the rapidly changing landscape of DVD burners. Just last January, we were showcasing drives capable of 4X speed for DVD+R burns and 2.4X for DVD+RW; by contrast, this chart is replete with drives that can write at 16X for DVD+R and 4X for DVD+RW. And the average price has fallen by more than a third over the past year (\$134, versus \$201 last January).

According to industry experts 16X will be the end of the line for write-once DVD; pushing the drive speed faster could endanger the integrity of

the disc. Last month DVD+R was first to cross that finish line. Now we have two 16X DVD-R drives on the chart: the NEC ND-3500A and the Pioneer DVR-A08XLA. A supplier of optical drives to PC manufacturers and retail drive companies in recent years, NEC is jumping back into the fray with a branded model for consumers.



MEMOREX'S 16x Dual Format Double Layer drive.

In its initial outing on our chart, the \$100 NEC ND-3500A earns one of our Best Buys. This model did well on all of our write tests, and it comes with a versatile software bundle. Our other Best Buy goes to the bargain-priced Lite-On SOHW-1633S, but this drive has a slower DVD-R spec than NEC's.

	INTERNAL DVD DRIVE	Features and specifications	Performance	Bottom line	
1	Memorex 16x Dual Format Double Layer Internal DVD Recorder \$120 (★★★★☆ Dec 04) find.pcworld.com/44911	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 2.4X DVD+R double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6.3 (with BackItUp and Recode) software	<ul style="list-style-type: none">DVD+R 6:04DVD+RW 10:04CD-R 3:05	Terrific performer boasts the speediest DVD+R write time we've tested; includes Simple Star's Photo Deluxe software.
2	Lite-On SOHW-1633S Best Buy \$85 (★★★★☆ Dec 04) find.pcworld.com/44908	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 2.4X DVD+R double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6.3 (with BackItUp) software	<ul style="list-style-type: none">DVD+R 6:11DVD+RW 10:00CD-R 3:09	Inexpensive drive offers stellar all-around performance, strong documentation, and generous support policies.
3	NEC ND-3500A Best Buy \$100 (★★★★☆ NEW) find.pcworld.com/45530	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 4X DVD+R double layer, 4X DVD+RW, 16X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ulead DVD MovieFactory 3.5 Suite Deluxe and NovaStor NovaBackup 7.1 software	<ul style="list-style-type: none">DVD+R 6:59DVD+RW 10:09CD-R 2:59	This drive hits a noteworthy balance of price, performance, and features. Tech support is not toll-free, but the manual is good.
4	Sony DRU-710A \$120 (★★★★☆ Dec 04) find.pcworld.com/44912	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 2.4X DVD+R double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6.3 (with BackItUp and Recode) software	<ul style="list-style-type: none">DVD+R 6:09DVD+RW 10:04CD-R 3:09	Top-tier performance is coupled with the only full-blown version of Ahead's Nero burning suite bundled with a drive.
5	LG Electronics Super-Multi GSA-4160B \$95 (★★★★☆ NEW) find.pcworld.com/45384	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 4X DVD+R double layer, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6.3 and CyberLink PowerProducer Gold 2 software	<ul style="list-style-type: none">DVD+R 6:20DVD+RW 12:03CD-R 3:22	The only drive on the chart to support writing to DVD-RAM (at up to 5X). DVD+RW write speeds are subpar (off by about 30 percent).
6	BenQ DW1620 \$100 (★★★★☆ Dec 04) find.pcworld.com/44906	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 2.4X DVD+R double layer, 4X DVD+RW, 16X DVD-R, 4X DVD-RW, 40X CD-R	<ul style="list-style-type: none">Sonic RecordNow 7.2 and InterVideo WinCinema 6 software	<ul style="list-style-type: none">DVD+R 6:12DVD+RW 9:13CD-R 3:28	This model stands out for its competitive price, useful software bundle, and quick write-once and rewritable DVD performance.
7	Pioneer DVR-A08XLA \$140 (★★★★☆ NEW) find.pcworld.com/45364	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 4X DVD+R double layer, 4X DVD+RW, 16X DVD-R, 4X DVD-RW, 32X CD-R	<ul style="list-style-type: none">Ulead DVD Movie Factory 3.5 SE and NovaStor NovaBackup 7.1 software	<ul style="list-style-type: none">DVD+R 7:00DVD+RW 10:10CD-R 4:17	Drive has poky CD write speed. Ships with a versatile software bundle, including Ulead VideoStudio 8 SE and Photo Explorer 8.5 SE.
8	TDK Internal IndiDVD 12x+/8x-Multiformat Burner \$140 (★★★★☆ Oct 04) find.pcworld.com/43812	<ul style="list-style-type: none">Single-layer drive12X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Roxio Easy CD & DVD Creator 6.2 and PhotoSuite 5 SE software	<ul style="list-style-type: none">DVD+R 7:48DVD+RW 9:04CD-R 2:44	Drive has the best +RW performance on the chart. But for less money, other drives burn to DVD+R in about 2 minutes less time.
9	Pacific Digital Mach-16 \$110 (★★★★☆ NEW) find.pcworld.com/45532	<ul style="list-style-type: none">Double-layer drive16X DVD+R, 4X DVD+R double layer, 4X DVD+RW, 16X DVD-R, 4X DVD-RW, 48X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6.3 (with BackItUp) software	<ul style="list-style-type: none">DVD+R 6:13DVD+RW 9:57CD-R 3:09	Excellent overall performer, but it lacks detailed documentation. (A similarly named model ships with Roxio software instead.)
10	Teac DVW58G \$90 (★★★★☆ Aug 04) find.pcworld.com/42876	<ul style="list-style-type: none">Single-layer drive8X DVD+R, 4X DVD+RW, 8X DVD-R, 4X DVD-RW, 40X CD-R	<ul style="list-style-type: none">Ahead Nero Express 6 (with BackItUp, PhotoShow, and Recode) software	<ul style="list-style-type: none">DVD+R 9:18DVD+RW 10:30CD-R 3:06	This model's slower DVD+R speed rating explains its slow performance (it's 3 minutes behind the top-ranked Memorex).

HOW WE TEST: We test drives under Windows XP Home on PCs with 1.67-GHz Athlon XP 2000+ CPUs and 512MB of SDRAM, using media supplied by the vendor or Verbatim. We test the drives with the format specified by the vendor at review time. Some vendors may change drive suppliers without changing their model designations; our results reflect the configuration tested at review time. Write speed is the time (in minutes:seconds) required to write 4.35GB to DVD using the drive's bundled mastering software; to format a blank rewritable DVD and copy 2.64GB of data to that disc; and to write 700MB of data to a CD-R. **CHART NOTES:** Prices given are street prices as of 11/3/04. Price is taken into consideration for Best Buy honors only. All drives are internal IDE models, and have a one-year warranty. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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TOP 10 DIGITAL CAMERAS

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45334 for reviews of all products tested this month and ranked in this chart.

HIGH RESOLUTIONS RULE as the point-and-shoot chart features eight cameras of 5 megapixels or more. Sony's new Cyber-shot DSC-P150 offers 7.2-megapixel imaging—and virtually no shutter delay—in a camera small enough to drop in a shirt pocket. Best suited for casual photographers, the DSC-P150 offers advanced controls limited to a full-manual exposure mode and a simple manual focus option.

Taking a different tack, Nikon's Coolpix 4800 has the longest optical zoom (8.3X) on the chart. Like the new Cyber-shot, this Coolpix is best for snapshots. Its 15 scene modes should handle any lighting problem a casual photographer is likely to face.



NIKON'S Coolpix 4800 has a long zoom.

If you want a supercompact model, consider Casio's new, thin Exilim EX-Z55. Casio gave this camera a 2.5-inch LCD, and still managed to find room for an optical viewfinder.

We reviewed two other models this month, both of which missed the chart as a result of too-low image-quality scores.

Pentax's Optio MX, shaped like a video camera, provides a dedicated video trigger (see find.pcworld.com/44098). The Epson PhotoPC L-410 (\$200) has a rare feature that makes the unit ideal for capturing action shots: You can hold down the trigger and record images continuously until the media card fills up (see find.pcworld.com/45118).

	POINT-AND-SHOOT CAMERA	Features and specifications ¹		Performance	Bottom line
1	Sony Cyber-shot DSC-W1 Best Buy \$400 (★★★★★ Aug 04) find.pcworld.com/42834	• 5.1 megapixels • 38mm to 114mm zoom • Six scene modes	• 640 by 480 video • Two AA batteries ² • 8.8 ounces	Image quality: Very Good Ease of use: Very Good Battery life: Very Good	The DSC-W1 is fairly compact, feels rugged, takes optional lenses, and has a huge 2.5-inch LCD. Advanced controls include full-manual exposure.
2	Nikon Coolpix 4800 \$400 (★★★★★ NEW) find.pcworld.com/45116	• 4.0 megapixels • 36mm to 300mm zoom • Fifteen scene modes	• 640 by 480 video • Rechargeable battery • 10.6 ounces	Image quality: Very Good Ease of use: Good Battery life: Very Good	Ideal for snapshots and travel, the moderate-size 4800 has an appealing price for a camera with an 8.3X optical zoom lens—the longest on the chart.
3	Sony Cyber-shot DSC-P150 \$500 (★★★★★ NEW) find.pcworld.com/45120	• 7.2 megapixels • 38mm to 114mm zoom • Nine scene modes	• 640 by 480 video • Rechargeable battery • 6.5 ounces	Image quality: Very Good Ease of use: Very Good Battery life: Very Good	One of the smallest 7-megapixel cameras available, this pocketable model is especially quick to power up, and shutter lag is minimal.
4	Kodak EasyShare DX7630 Zoom \$400 (★★★★★ July 04) find.pcworld.com/42264	• 6.1 megapixels • 39mm to 117mm zoom • Sixteen scene modes	• 320 by 240 video • Rechargeable battery • 9.6 ounces	Image quality: Very Good Ease of use: Very Good Battery life: Very Good	A dazzling 2.2-inch LCD and a solid selection of advanced controls (such as aperture- and shutter-priority) highlight this relatively small camera.
5	Canon PowerShot S60 \$499 (★★★★★ Oct 04) find.pcworld.com/43541	• 5.0 megapixels • 28mm to 100mm zoom • Five scene modes	• 640 by 480 video • Rechargeable battery • 10.0 ounces	Image quality: Very Good Ease of use: Very Good Battery life: Good	Canon gave the S60 a wider-angle lens than most point-and-shoots have; the camera is fairly bulky, but you get lots of creative controls.
6	Casio Exilim EX-Z55 \$450 (★★★★★ NEW) find.pcworld.com/45122	• 5.0 megapixels • 35mm to 105mm zoom • Twenty-three scene modes	• 320 by 240 video • Rechargeable battery • 5.6 ounces	Image quality: Very Good Ease of use: Good Battery life: Outstanding	Easily pocketable camera has a big 2.5-inch LCD and scene exposure controls for all occasions; connects to a PC via an included docking station.
7	Olympus C-60 Zoom \$449 (★★★★★ Aug 04) find.pcworld.com/42830	• 6.1 megapixels • 38mm to 114mm zoom • Six scene modes	• 320 by 240 video • Rechargeable battery • 7.1 ounces	Image quality: Outstanding Ease of use: Good Battery life: Good	Powerful, fairly compact model has a fine selection of semiautomatic and full-manual exposure modes, but it could be easier to use.
8	HP Photosmart R707 \$349 (★★★★★ July 04) find.pcworld.com/41998	• 5.1 megapixels • 39mm to 117mm zoom • Ten scene modes	• 320 by 240 video • Rechargeable battery • 7.4 ounces	Image quality: Very Good Ease of use: Good Battery life: Good	Simple-to-use compact camera has built-in help for novices, a few advanced controls for experienced shooters, and in-camera red-eye removal.
9	Canon PowerShot A75 Best Buy \$250 (★★★★★ Aug 04) find.pcworld.com/42004	• 3.2 megapixels • 35mm to 105mm zoom • Twelve scene modes	• 640 by 480 video • Four AA batteries • 10.8 ounces	Image quality: Good Ease of use: Very Good Battery life: Very Good	Great price for a camera with semiautomatic and manual shooting modes, and optional lenses; photographs had fine color but erratic sharpness.
10	Fujifilm FinePix E550 \$350 (★★★★★ Nov 04) find.pcworld.com/44208	• 6.3 megapixels • 33mm to 130mm zoom • Five scene modes	• 640 by 480 video • Two AA batteries ² • 9.3 ounces	Image quality: Very Good Ease of use: Fair Battery life: Very Good	Bulky camera with a 2-inch LCD comes with a broad array of controls, but some could be easier to use. Price is low for a 6.3-megapixel model.

FOOTNOTES: ¹Resolutions are expressed in effective pixels, zoom range (focal length) is identified as 35mm equivalent, and camera weights include batteries. The designation "Rechargeable battery" refers to a lithium ion battery unless otherwise noted; AA batteries are alkaline. Video capability includes audio. ²Rechargeable AA batteries included. **HOW WE TEST:** To gauge picture quality, we take a series of shots, with and without flash, at the camera's highest resolution and default automatic settings. We photograph a complex still life and a mannequin to see how well each camera captures details and subtle colorings such as skin tones. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Prices given are street prices as of 10/27/04. Star ratings are based on picture quality, ease of use, features, battery life, and support. Price is taken into consideration for Best Buy honors only. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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top of each chart. This issue launches our implementation of a new star rating-based ranking system for our *Top 100* charts. The charts on this page reflect our previous system. For more details on the new ranking system, see page 143.



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	3 Oki Data Oki B4350 (★★★★★ Nov 04) find.pcworld.com/44160		3 Asus MyPal A730 (★★★★★ Dec 04) find.pcworld.com/44440		3 HP Deskjet 5740 (★★★★★ Dec 04) find.pcworld.com/44956
	4 Dell Laser Printer 1700 (★★★★★ Nov 04) find.pcworld.com/44148		4 HP IPaq RZ1715 Mobile Media Companion (★★★★★ Dec 04) find.pcworld.com/44442		4 HP Deskjet 5850 (★★★★★ June 04) find.pcworld.com/39200
	5 Konica Minolta PagePro 1350W (★★★★★ Nov 04) find.pcworld.com/44154		5 HP IPaq Hx4705 (★★★★★ Dec 04) find.pcworld.com/44636		5 Lexmark Z615 Color Jetprinter (★★★★★ June 04) find.pcworld.com/41816
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	2 Brother HL-6050DN (★★★★★ Nov 04) find.pcworld.com/44164		2 PalmOne Tungsten T3 (★★★★★ Nov 03) find.pcworld.com/38027		7 Lexmark Z816 Color Jetprinter (★★★★★ Aug 04) find.pcworld.com/42504
	3 Xerox Phaser 4500/N (★★★★★ Nov 04) find.pcworld.com/44188		3 PalmOne Tungsten C (★★★★★ Sept 03) find.pcworld.com/36887		8 HP Business Inkjet 1200d (★★★★★ Dec 04) find.pcworld.com/44550
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From the November 2004 Issue		From the December 2004 Issue		From the December 2004 Issue	

HERE'S HOW

EDITED BY DENNIS O'REILLY



VIDEO EDITING TIPS

CHRIS MANNERS

Give Your Videos the Hollywood Treatment

A FRIEND STOPPED BY the other day to show me a video of his cross-country bicycle trip. By the time it was finished, I could have pedaled across the country myself. The poor guy didn't have a clue how to edit his footage. He's one of many digital video camera owners who don't know how to get what they've shot into viewable shape. Here's some quick and simple post-production advice for anyone with a yen to do digital videography.

Pick your program: Windows XP's Service

Pack 2 includes the free Movie Maker 2.1 application. To open it, click *Start•All Programs•Accessories•Windows Movie Maker*. This basic program's Movie Tasks pane in the upper left takes you step-by-step through the process of creating your video (see **FIGURE 1**). Adobe's \$99 Premiere Elements, a more full-featured editing program, offers special effects, titling, and the ability to burn a DVD right from the software, among other features. If you eventually decide to make the leap to

Adobe's professional-level app, the \$699 Premiere Pro, you'll be able to use all the tricks you've learned in the lower-cost package because the interfaces are remarkably consistent. All three programs take you from getting raw footage into your PC to outputting polished video.

Import your video: To move video from your camcorder to your hard drive, connect your PC and camcorder with a FireWire cable, turn the camcorder on, and open your video editing software. The program should recognize the camera automatically. In most video editing programs, the Capture command opens a window containing VCR-like controls for playing, stopping, fast-forwarding, and rewinding. Give your video clips names that will jog your memory about their content when you're ready to start editing.

Edit your footage: The simplest way to edit your movie is to put the clips into your software's timeline in the order you prefer. The timeline shows your movie in frame-by-frame sequence (see **FIGURE 2**). Once all of your clips are displayed on the timeline, select each clip in turn and set the "in" and "out" points. These are the frames that mark where each video clip begins and ends. Essentially, you're trimming the tops and tails from your clips to remove unwanted pieces.

Add filters and transitions: When you're satisfied with the order and duration of the clips, you're ready to fashion them into a movie. It's possible that all your clips look similar, but chances are you'll want to tweak at least a few of them to give the whole group a more consistent appearance. For example, you might find that some clips are brighter or more colorful than others (see **FIGURE 3**). Your editing program should contain filters that

154 VIDEO EDITING TIPS

Give your digital videos some Hollywood polish by using tools in Windows and in low-cost video editing programs.

158 INTERNET TIPS

Take your favorite browser to the next level with add-ons and plug-ins; the open-source FeedReader RSS reader.

160 HARDWARE TIPS

The best way to keep interlopers off your home or small-business network is with a firewall-equipped router.

161 ANSWER LINE

Undelete photos and files from a memory card; the pros and cons of e-mail autoresponses; remake the New menu.

66 FIVE-MINUTE FIXES

Get your PC hardware and software back up to speed in a trice with these 37 fixes for Windows, networks, apps, and the Web.



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allow you to adjust a scene's brightness, contrast, and color balance. Bear in mind, though, that there's a limit to how finely you can polish poorly lit or jerky footage.

You're better off shooting well-lit video in the first place; a small camera-mounted light will help keep your interior shots bright. A battery-powered light, such as Sony's 10-watt HVL-10DC (find.pcworld.com/45332), fits into the accessory shoe on the top of your camera. You can find these for less than \$50 on sale. Often in video, foreground subjects appear too dark because too much light is behind them. A camera-mounted light provides a

steady level of additional front lighting to overcome this problem.

When you're satisfied with how your clips look, add transitions to smooth shifts between clips or to add dramatic impact. Your video editing software likely provides a slew of transitions and wipes, but your best bet is to keep it simple. Stick to straight cuts, dissolves, and the ever-popular "fade to black" (or if you're a *Six Feet Under* fan, "fade to white"). A cross-dissolve fades out one clip as another clip fades in. An additive dissolve adds a second clip and then fades out the first one. Most other transitions available in programs, such as page curls and fancy wipes, are the hallmarks of cheesy 1980s videos.

Add titles, graphics, and motion: Every video editing program allows you to add text overlays, titles, and credits to your movie (see **FIGURE 4**). Some also feature built-in motion so that, for example, text can scroll down the screen or appear letter by letter. If you have a digital still camera, you can import digital pictures from it and add



FIGURE 3: ADDING A camera-mounted light keeps your subject visible, even when she's in front of a bright background.

them to your movie. If the still images are larger than 720 by 480 pixels (the size of a frame of video), you can use your editing program's motion capabilities to pan across the image, à la documentarian Ken Burns. This technique works particularly well to set the scene at the start of a video.

One thing to bear in mind as you edit your video is the curvature of a TV screen, which can cause images to look distorted near their edges. Keep the important details of each shot near the center of the screen, and avoid having words or sentences approach the edges. Oh, and that nasty buzzing you sometimes hear on late-night TV ads? It's caused by small white titles that generate noise.

Add music and narration: Few free video editing programs let you import multiple audio tracks, so you'll need to pony up some cash if you want to give your video a more elaborate sound track. Adobe's Premiere Elements ▶

FIGURE 2: THE TIMELINE IN Adobe's Premiere Elements video editing software shows your movie frame by frame.

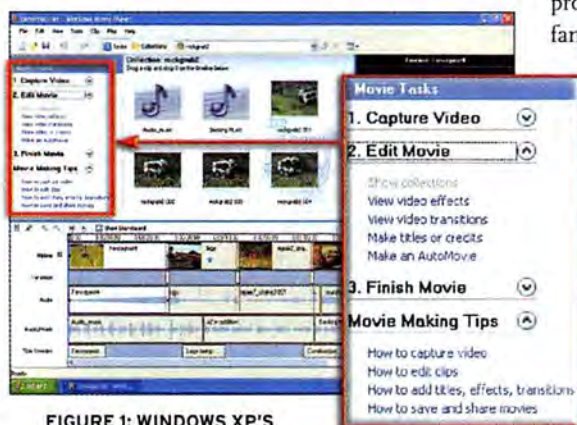


FIGURE 1: WINDOWS XP'S MOVIE MAKER 2.1 video editing program provides only basic editing functions through its Movie Tasks pane.



can handle up to 99 audio tracks in one movie. The application also gives you the ability to separate the audio that you import along with your video into individual, editable tracks.

If you decide to add a voice-over to your video, a simple trick is to use your camera to record the narration. Then you simply import the video and audio together into your program, throw away the unwanted video track, and then position the audio track in your project. To help with your sound track's continuity, stagger the audio so that the sound from one clip runs into the next. If you do this, the cut will seem less abrupt because the audio and the video won't end at the same time.

You should be able to import MP3s and other common audio formats, such as .wav files, into your video. If you're working on a corporate video, however, be sure to obtain the rights to all the songs you use. You may want to consider purchasing an inexpensive royalty-free music collection so your boss won't get sued by Metallica. For example, Partners in Rhyme (www.musicloops.com) has a

Now, don't expect these tips to make you the new Ang Lee, but they're a good start at least. Don't be afraid to try out all the features of your editing program—you can always undo a wacky effect if it doesn't pan out (if only Oliver Stone had used an undo button). Remember, less is always better in this short-attention-span world, so edit your videos tightly.

VIDEO ESSENTIALS

BEFORE YOU SHOUT "Action!" make sure that you have a few of these hardware and software necessities stacked beside your director's chair.

FireWire: If you want to edit digital video, your PC and video camera must have FireWire ports. The good news is that nearly all PCs sold in the last couple of years come with FireWire ports built in. If your system lacks one, you can buy a FireWire add-in card for about \$50.

Hard-disk space: One hour of digital video uses about 13GB of hard-disk space. To have enough room to edit the video, you'll need at least 40GB of free storage space. And keep in mind that your finished

movie, stored on your hard drive, will eat up space there, too.

Operating systems: Windows XP, 2000, and NT are better operating system options for editing digital video because they put no limitation on file size. Depending on the particular version you have, Windows 98 and Me limit file size to 2GB or 4GB, which translates into either 10 or 20 minutes of continuous video.

Processor speed and RAM: Because video is so data rich, you'll need a machine that's speedier than a 750-MHz Pentium 4 PC. Though it's possible to edit video on a slower system, your work will suffer from jerky motion and long waits as the monster video file bogs down the CPU. Because the amount of RAM your PC has affects its performance, I recommend having at least 256MB of RAM installed.

Chris Manners is a freelance writer and videographer based in San Francisco.

DIGITAL VIDEO TIPS

Cinematography 101

TO CAPTURE FIRST-rate video, get the most portable camcorder you can afford, carry it wherever you go, and be ready to start recording at a moment's notice.



Use a tripod or monopod: The image-stabilizing feature on many camcorders simply can't keep the image smooth. For truly steady shots and smooth pans, use a tripod to lock down your camera.

Avoid sudden zooms and pans: Nothing makes an audience queasier than rapid pans and zooms. Whenever you pan, hold the camera on your subject, and then pan or zoom as slowly as possible. After completing the pan, hold the view on the new subject for several seconds.

Pay attention to lighting: Shoot with the sun to your back if possible (keep your shadow out of the frame, of course). If you shoot indoors against a bright light or outdoors and backlit, your camera's automatic exposure will make your subject too dark against the background.

Purchase a microphone: Even though all cameras have a built-in microphone, most aren't very good and may pick up camera noise. An external mike is less likely to pick up the rustles, coughs, sniffs, and other noises you make as you film. If you use a boom (overhead) mike, be sure to keep it out of the frame.

Change camera angles: Shoot your scene from a wide view, then over the shoulder (showing the speaker but hinting at the listener's perspective), and finally from close up. This will give you more-dynamic clips to pick from when you start editing.

Name your work: After you finish a tape, be sure to label it. Few things are more frustrating than having to play a box of unmarked tapes one by one to find the movie you're looking for. Trust me.



FIGURE 4: GIVE YOUR VIDEO a professional look by adding titles to appropriate opening and closing shots.

broad selection of CDs to choose from.

Get on TV: Once you have completed your masterpiece, getting it into TV-viewing shape is pretty straightforward. The first step is to copy your video to disc: You can port the edited video from your computer back to your camera and rerecord it, or you can play it through your camera to tape on an attached VCR, or you can burn a DVD (if your editing program permits you to). And that's all—you're done!



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Hard drive	250GB 7200RPM Serial ATA
Optical drive	16X Dual Layer DVD/RW
Media Reader	8-in-1 Card Reader
System Cooling	Integrated Cooling Engine (ICE) Liquid Cooling
Operating System	Microsoft Windows XP Media Center Edition 2005
Dimensions (L x W x H)	12.2 x 7.8 x 7.2 (in); 310 x 200 x 185 (mm)

* monitor not included



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INTERNET TIPS

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MARKS IN MOZILLA

THE BEST WAY TO
REMOVE AN ADD-ON

Better Browsing: Add-Ons, Plug-Ins, and Extensions

ANY PLAIN-VANILLA Web browser will display most sites just fine. But some enhanced browsing experiences require help from what Internet Explorer calls "add-ons," and what Netscape, Mozilla, and Firefox refer to as "plug-ins." While Adobe's Acrobat Reader, Macromedia's Flash player, and other common plug-ins suggest themselves the moment you encounter a site that requires them, other browser helpers are harder to find. Here are some of my favorites, all free.

Not every plug-in you can add to your browser is a boon, of course. I've taken care to weed out products that also install spyware or adware, or that otherwise jeopardize your privacy and sneak around behind your back. And I'll show you how to make browser add-ons go away, should they become tiresome.

IE ENHANCERS

INTERNET EXPLORER, once the pride of Redmond, Washington, has gradually fallen behind competing browsers in key areas—I mean *besides* security issues. Fortunately, IE add-ons and shell programs rectify most of these deficiencies.

Until Windows XP Service Pack 2 came along, IE's most glaring omission was the ability to block pop-ups. The browser keeps these unwanted windows at bay just fine with SP2, so you don't need to download a separate tool for that (see October 2004's *Internet Tips* at find.pcworld.com/44652 for more on SP2). If you've been using **Google Toolbar** (toolbar.google.com) to block pop-ups, however,

keep it around. Though the toolbar's blocker is no better than the one now in IE, it's worth having for its ability to highlight search terms that appear on the page, its form filler (which speeds entering your personal data at shopping sites), its button for adding the current page to your Blogger blog, and other features.

By default, the Google

Toolbar sends anonymous information about each of the sites that you visit back to Google, but you can disable even that innocuous phone-home behavior by checking the *Disable advanced features*

option during installation of the toolbar. **MSN Toolbar** (toolbar.msn.com) and **Yahoo Toolbar** (companion.yahoo.com) function similarly, providing links to those services' e-mail, search, and instant messaging features. The Yahoo Toolbar comes with an optional anti-spyware tool as well.

Browsers are good at displaying lots of photos, but saving several images to your hard drive isn't always easy. The **Picture Tools** (www.picturetools.com) IE add-on makes it easy to grab some or all of the images from a Web page for future reference. Another handy IE helper, **Easy Go Back** (www.unhsolutions.net/EGB), lets you navigate back and forth through your

browser history by gesturing with your mouse. And yet another, called simply **Pluck** (www.pluck.com), is a Swiss-army-knife add-on that automatically resubmits search terms on Amazon, eBay, Google, and RSS news feeds, and notifies you when the results change. Pluck also turns IE into an RSS reader, organizes and uploads your bookmarks for use from any computer, and lets you create shared folders online (see **FIGURE 1**).

Microsoft may have finally gotten pop-up blocking right, but IE still lacks tabbed browsing—the ability to switch between multiple Web pages in the same browser window. If that sounds like something that could make you more productive, check out two IE shells (programs that add interface elements and other functions to the browser but remain IE underneath). Both give you tabs for each open

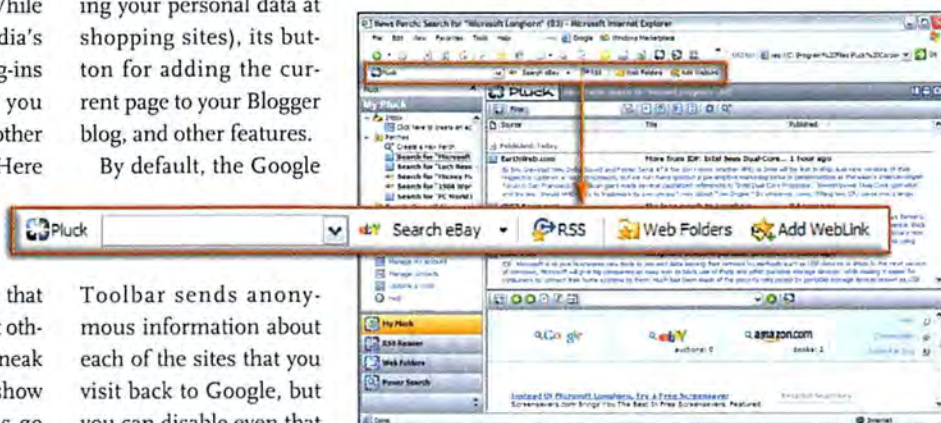


FIGURE 1: THE FREE PLUCK ADD-ON teaches IE to read RSS feeds and to do your Amazon and eBay shopping for you.

Web page. The first of these is **Maxthon** (www.maxthon.com), formerly known as MyIE2, which also lets you block ads, browse by gesturing with your mouse, and use custom "skins." **Avant Browser** (www.avantbrowser.com) features a filter that screens out time-consuming Flash animations; it also lets you browse via mouse gestures, add skins, and more.

GET MO' ZILLA

INTERNET EXPLORER plug-ins require a download, but the Favorites toolbars in the separated-at-birth Mozilla and Netscape browsers have links to sites brimming with older-style plug-ins and newer

extensions. The next-generation Firefox browser supports some of these, and it has a link to its own extensions page that lists dozens of free enhancements for the browser. Here's a Mozilla sampler.

Preferences Toolbar: Disable Flash or JavaScript, clear your browser cache, and reset other preferences without having to dig through layers of menus and dialog boxes (find.pcworld.com/44664).

Mouse Gestures: Navigate through your recently viewed pages by exercising a little mouse fu (find.pcworld.com/44666).

Bookmark Links Checker: Add a handy check button to Firefox's Bookmarks Manager dialog box to place an X next to dead links (find.pcworld.com/44656).

Tab X: Tabbed browsing is great, but closing tabs is harder than it should be. This extension attaches a close button to each tab (find.pcworld.com/44658).

MANAGE YOUR PLUG-INS

THE PROBLEM WITH browser add-ons, plug-ins, and extensions is that there are so many of them. If your browser toolbars

JOIN THE RSS RACE

IN A WORLD OF ONLINE information overload, what's a news addict to do? Pile on even more, of course. The perfect tool for perusing your dozen or so favorite online publications is an RSS reader. RSS may or may not stand for Really Simple Syndication; see "News on Demand" from the July 2004 issue at find.pcworld.com/44662 for more. It uses XML to connect your PC to the digital newswires produced by hundreds of online publications, including the *New York Times*, CNN, and of course *PC World*. With RSS, instead of your having to remember to go to the news, the news comes to you. My favorite RSS reader is FeedReader, a simple, open-source, utterly free program that sits unobtrusively (most of the time) in your system tray. Should a new story appear on one of the RSS feeds that you subscribe to, a small window will pop up from the tray icon to notify you. Click the link to display the story in FeedReader's main interface. And that's the way it is.

have become overloaded with buttons and menus, take steps to bring things back under control.

If you feel the need to reassert your dominance over Internet Explorer 6, choose *Tools>Manage Add-ons*. The resulting dialog box lists all of the browser add-ons currently loaded for the program. To view the ones that have loaded in the past but aren't currently active, choose the *Add-ons that have been used by Internet Explorer* option

in the Show drop-down menu. If you'd simply like to block an add-on from running temporarily, select it in the list of add-ons and click *Disable* under Settings. To reactivate an add-on, select it and then click *Enable*. Take a good look at the programs installed for your browser: If you see something that has a dubious name or that you just can't identify, try disabling it. It could be an unwanted bit of adware or browser hijacking code. If disabling an add-on causes problems, return to this dialog box and re-enable it.

To remove an add-on permanently, select *Windows>Programs (All Programs in Windows XP)* and look in the menu for an uninstall icon in the program's folder; or select the add-on in Control Panel's Add/Remove Programs and click *Remove*.

Uninstalling extensions in Mozilla is a bit more difficult. It turns out that no one ever got around to creating an uninstall feature (Mozilla's developers refer to this state of affairs officially as bug #170006). To deal with the problem, Mozilla.org offers manual uninstall instructions for extensions (find.pcworld.com/44660).

All the more reason, then, to try Firefox instead, which manages extensions easily. To remove an extension, choose *Tools>Extensions*, select the one that you want to uninstall, and click *Uninstall*. You may be able use the same dialog box to check for updates to your installed extensions, by selecting one and clicking *Update* (see FIGURE 2). Unfortunately, each time I tried this technique with one of my installed



FIGURE 2: MANAGING YOUR BROWSER extensions is a breeze when you use the free, open-source Firefox program.

extensions, I got a message stating that no update service could be found. Maybe it's just that all of my extensions are lazy.

OVAL OFFICE EAVESDROP

WISH YOU COULD BE a fly on the wall of the White House? It may not be able to transport you to the Oval Office in real time, but the University of Virginia's Miller Center of Public Affairs has a free service that lets you in on the intimate conversations of some of our past presidents since World War II: Franklin Delano Roosevelt, Harry S. Truman, Dwight D. Eisenhower, John F. Kennedy, Lyndon Baines Johnson, and Richard M. Nixon.

You may not be interested in hearing LBJ order a new pair of custom slacks, but who wouldn't want to listen in on what Nixon had to say about Donald Rumsfeld and John Kerry back in 1971? The Center's www.whitehousetapes.org site offers hour upon hour of presidential prattling on subjects ranging far afield of politics (and you thought these were busy people). The recordings are available in a variety of audio formats, including MP3, Flac, Ogg Vorbis, and Windows Media Audio. (Our thanks to Garth Wernter, director of technology at the Miller Center, for letting us know about the recordings.) ■

Send your questions and tips to nettips@spanbauer.com. We pay \$50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. Scott Spanbauer is a contributing editor for PC World.

HARDWARE TIPS

KIRK STEERS

Keep Your PC Hidden From the Bad Guys

A NEW PC FRESH out of the box is like Swiss cheese: It's filled with holes that make it vulnerable to viruses and information thieves. Firewalls, operating system updates, and antivirus software can plug many holes, but hackers are always looking for—and finding—weaknesses in Windows and other software. For best protection, hide your PC behind a router's hardware firewall. Routers with firewalls are cheaper and easier to install than ever.

Hackers find a computer by connecting to its IP address, four numbers (each from 0 to 255) separated by periods that identifies each device on the Internet. A router allows several PCs to share a single Internet connection—and to hide behind a single IP address. The router displays the public IP address that is issued by your ISP and seen by everyone on the Net. It uses the Network Address Translation (NAT) standard to assign a private, temporary address to each computer on

your network. The router directs inbound and outbound Internet traffic so it appears to outsiders that each of your networked machines is using the router's public IP address.

When hackers make contact with your public IP address, they don't go to your computer, but instead to a "dumb" router that lacks the vulnerability of a Windows-controlled PC. When you put all your computers behind a hardware firewall, you'll likely see a dramatic drop in the number of intrusion alerts that your software firewall registers. (You'll certainly want to continue to use that security program in addition to your router, though.)

GET YOUR OWN ROUTER

ENTRY-LEVEL four-port routers, sufficient for most home and small-office networks, are cheap; for example, the RP614 from Netgear (www.netgear.com; see **FIGURE 1**) costs around \$40 online. If you're planning a wireless network, get a wireless router instead of an access point; they are priced about the same. And if you're shopping for a new ISP, don't buy a router just yet. Most of the cable and DSL modems that broadband ISPs provide come with firewalls.

With the explosion of networks in homes and small offices, vendors such as Netgear, Linksys (www.linksys.com), and D-Link (www.dlink.com) provide reasonably simple configuration screens and, most important, telephone support, usually free for the first 30 days. Whether you're buying your own router or in-

stalling one from your ISP, you're likely to come across a lot of new acronyms. Here are the ones you need to know.

UPnP: The Universal Plug and Play standard simplifies the installation of any networked device—from routers to home appliances. Just plug it in, and it shows up in Windows Explorer. Most routers now come with UPnP, which Windows XP and Me support. One of the early security flaws in Windows XP involved UPnP, but Windows XP Service Pack 2 corrects the problem. UPnP is still too new to be trusted, though, so leave it disabled unless you are running software that requires it.

VPN: A virtual private network creates a



FIGURE 1: A LOW-COST ROUTER PUTS the "wall" back in your firewall and stops many hackers cold.

secure channel between two computers over the Internet. Many businesses use a VPN to link remote workers to the company network. Your IT department can tell you whether your router needs to support IP Security (IPSec), the Point to Point Tunneling Protocol (PPTP), or some other network-security protocol.

SPI: Stateful Packet Inspection examines each incoming data packet and rejects unsolicited packets. Packets containing an inbound Web page, for example, have been solicited by a local computer and hence are ushered through the firewall.

DMZ: A Demilitarized Zone allows you to partially or fully expose a computer to the Internet. Online gamers and people maintaining Web servers and FTP sites will find this feature useful. ■

Go to find.pcworld.com/31511 for past Hardware Tips columns. Send your tips and questions to kirk_steers@pcworld.com. We pay \$50 for published items. Kirk Steers is a PC World contributing editor.

DRIVER SAFETY

WHAT'S THE SECOND thing you do when you think your PC has a hardware problem (after you check the cables)? You reinstall the device drivers for the suspect component. But that means hunting down model numbers, looking for CDs, and maybe downloading files. WinDriver Ghost backs up all your device drivers and reinstalls one driver or many with just a few mouse clicks. The program is especially handy for keeping hand-me-down PCs with unknown hardware running smoothly. It's free to try, and only \$25 to keep. Visit find.pcworld.com/44540 for the download.

ANSWER LINE

LINCOLN SPECTOR

Recover Photos and Files Deleted From Flash RAM

I DOWNLOADED photos to my hard drive, and then erased them off the camera's memory card. Shortly thereafter, my hard drive crashed. Can I restore the images from the memory card?

Scott Barnes, St. George, Utah

PROBABLY, BUT DON'T write anything to that card until you've either retrieved the images or given up trying to restore them. It's not deleting a file that destroys it, but writing new data over it.

You'll need a flash RAM file-retrieval program designed especially for retrieving JPEG images. I recommend Software Shelf's \$40 File-Rescue Plus. Visit find.pcworld.com/44466 to download the trial version. This program retrieves deleted files from memory cards and drives (see **FIGURE 1**). I have used it to restore photographs from a SmartMedia card in a card reader, from a Memory Stick inside a camera, and from a SanDisk flash drive.

If software can't restore your files, mail the memory card to a file-recovery service that offers free evaluations, so you can

find out whether your data is retrievable before you pay for anything but postage. Two such services are MediaRecover (www.mediarecover.com) and Ontrack Data Recovery (www.ontrack.com).

ARE AUTORESPONSES WISE?

WILL MY E-MAIL'S "Out of the Office" autoreply, which I turn on when I'm away, attract spam?

Lucian Micu, East Brunswick, New Jersey

AS ANYONE WHO has ever written to answer@pcworld.com knows, I'm a big believer in e-mail autoreponses. These messages (aka vacation responses) go out automatically to everyone who sends you an e-mail message, usually saying that you'll be out of the office until a specified date. Check your ISP's Web site to see whether it offers an autoreply service.

Some people believe that autoreponses encourage spam. The theory is that spammers will see the response to their junk mail, know that there's a real human being at the other end of the message,

and put the e-mail address on a higher-value list.

It doesn't work that way, however. Virtually all spam these days goes out with a fake return address, so the real culprits won't get your autoreponse. And even if they did, the address would be hidden among thousands of bounced messages.

Many autoreponses also bounce back, a side effect of fake return addresses. But these are easy to identify and delete when you return.

MAKE A NEW NEW MENU



CAN I CHANGE the New menu items that appear when I right-click the desktop or Windows Explorer?

David Arthur, Lodi, New Jersey

ADDING FILE TYPES to your right-click ("context-sensitive") menu involves editing the Registry, so back it up first (go to find.pcworld.com/44468 for instructions).

After backing up the Registry, select **Start>Run**, type **regedit**, and press **<Enter>**. In the Registry Editor's left pane, navigate to **HKEY_CLASSES_ROOT**. Locate and select the file extension you want to add or remove under this entry. Subkeys for file extensions all begin with a period (.).

To remove a file type from the menu, expand the key for the extension so that you can see its subkeys (note that not all file types have a subkey). Right-click the **ShellNew** subkey and select **Delete>Yes**. To add a file type, right-click the extension subkey, select **New>Key**, and enter the name **ShellNew**. Right-click the new **ShellNew** key, select **New>String Value**, and name the new value **NullFile**. Then exit the Registry Editor and reboot Windows. ■

Send your questions to answer@pcworld.com. We pay \$50 for published items. See 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.

DEFAULT TO EXPLORER

READER JIM PUGLISI of Fair Oaks Ranch, California, asks how to make My Documents, My Computer, and other common folders open in Explorer mode—with the folder bar visible on the left. In Windows Explorer (with or without the folder bar visible), select **Tools>Folder Options** (**View>Folder Options** in Windows 98). Click the **File types** tab. Select the file type **Folder** (be sure not to confuse it with the file type 'File Folder'). Now click **Advanced** (**Edit** in Windows 98). Select **explore>Set Default**. To finish the folder-view change, click **OK** twice (in Windows 2000 and XP), **Close** twice (in 98), or **OK>Close** (in Me).



FIGURE 1: VIEW LOST photographs in memory cards and drives before you recover them, with File-Rescue Plus.



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This handsome timepiece has been updated with a kinetic automatic movement that is powered by the motion of the wearer's arm, so the watch never needs winding or batteries.

Hand-crafted Elite Movement

The Steinhausen movement consists of 185 parts, that are assembled entirely by hand. To prevent wear on gears, fine watches use tiny gemstones to reduce friction. The Steinhausen features up to 35 jewels, 15 more than most of the world's elite watches. The movement is then rigorously tested for flaws and accuracy. Only 6% of the movements made ever meet the stringent requirements to be placed in this noble timepiece, making the Steinhausen one of the most accurate in the world.

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Patek Philippe makes first wrist watch	1923	Lips produced the first battery powered watch	1966	Steinhausen masterpiece is reproduced for first time	

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STORAGE USED TO BE SIMPLE. You kept your data on a hard drive—either in your PC or on your local network. You kept backups nearby on some other medium, removable but tangible. Now and then you might hook up something like a PDA to move data back and forth. End of story.

Today, a new approach is gaining traction: Store your data on the Internet and retrieve it as you need it with any device that suits your fancy. As long as you have fast, dependable bandwidth at a fair price, local storage doesn't really matter.

At least that's the theory. In the real world of slow, unreliable, sometimes pricey Net connections, you may not be willing to dump your PC's hard drive just yet. Still, new devices like Web-savvy phones with connections as fast as cheap DSL may have you thinking about the virtues of storing data somewhere more accessible.

So should you build your future computing life around thick clients with lots of storage, or thin ones with lots of bandwidth? For now, the answer is both.

Take e-mail. Use traditional software, and you can organize messages just the way you like, but only on the PC that does the downloading. Leave mail on your ISP's server, and you can access it from anywhere—but managing it can be tougher.

I'm still so undecided that I use the belt-and-suspenders mode. When I'm home, Outlook Express downloads messages to my desktop. On the road, I leave my mail on the server as my laptop picks it up; back home, the desktop collects it again. Oh, yeah: I also do mail on my Treo handheld.

This technique is far from perfect—the redundancy is annoying, and mail transmitted from my notebook doesn't reach my "sent messages" folder unless I remember to send myself a copy and refile it. Yes, I know corporate products can solve the syncing problem, but I'm not about to buy my own private Exchange server. And yes, I know Google's Gmail

lets you manage remotely stored mail in clever ways, but I'm neither prepared to move to a new system nor persuaded that the 1GB of storage it offers is enough.

The local-versus-remote-storage question isn't just about e-mail. I use an online service to back up my data automatically and keep it far from local perils. But with today's asymmetric broadband, uploading is significantly slower than downloading, so sending big photo and video files takes forever. And fees can get oppressive. Suddenly big local hard drives and recordable DVDs look attractive.

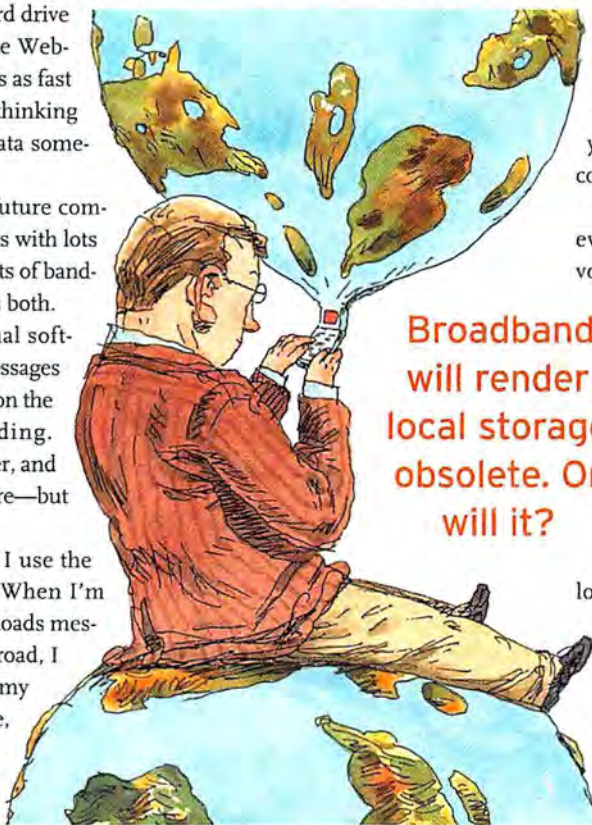
Then there's security. Leaving unencrypted info on somebody else's system makes it inherently vulnerable. If a crash at a remote system destroys the only copy of your data—it's happened—you're screwed. And good luck if the company storing your data goes broke.

Local versus remote can be an issue even when PCs and the Net aren't involved. I love TiVo, but if everything I record to TiVo were available from my cable company at a fair price at any time, I might decide that managing my own content isn't worth the bother.

That may not happen soon, but it shows why you shouldn't take any storage model for granted.

What I bet we'll end up with is lots of storage *and* lots of bandwidth—and lots of mixed systems. Ready for a WiMax iPod phone? ■

Broadband will render local storage obsolete. Or will it?



Visit find.pcworld.com/31595 to see additional columns by Contributing Editor Stephen Manes. He has written about technology for two decades.



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