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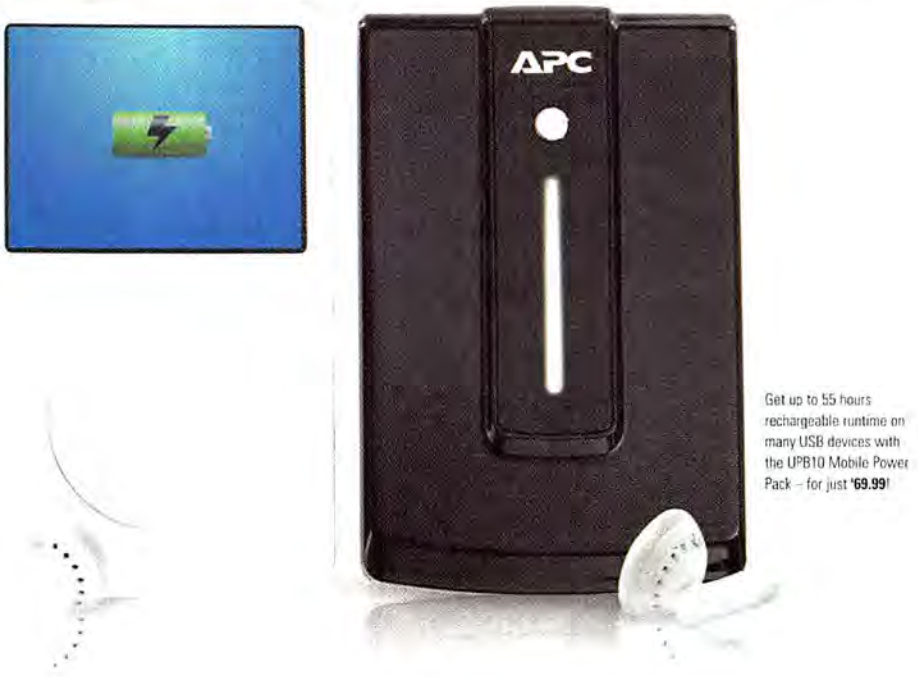

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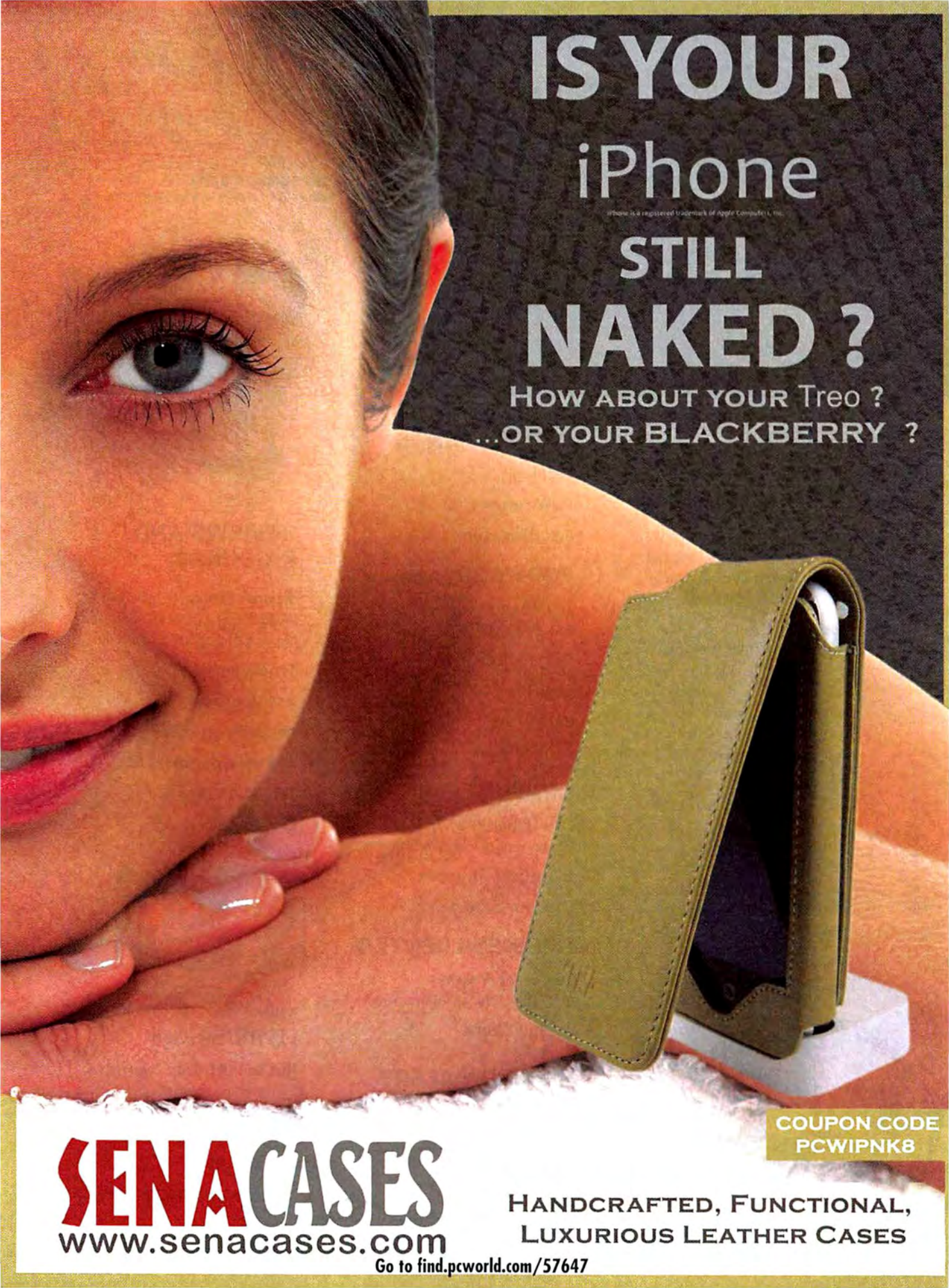
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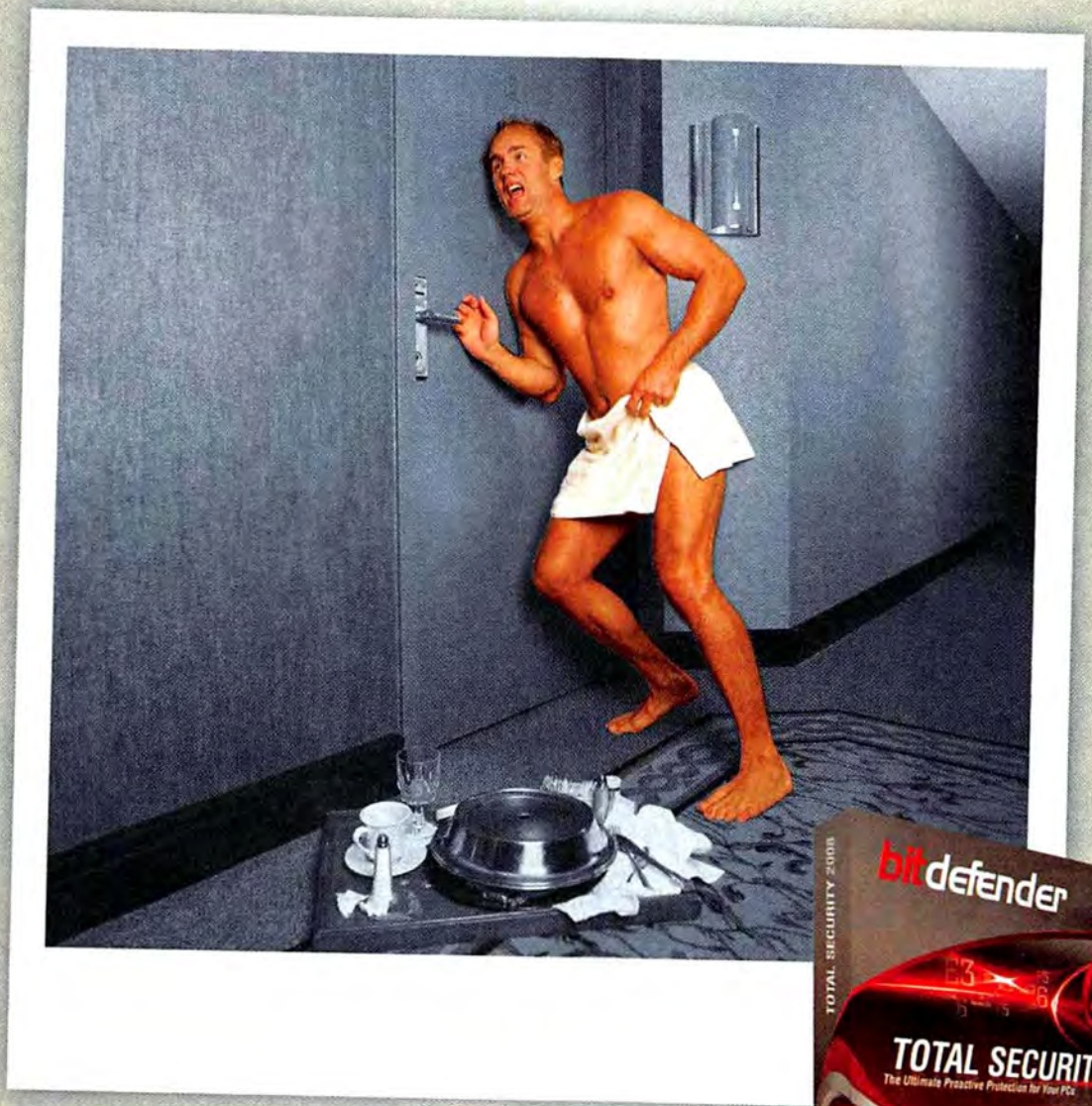

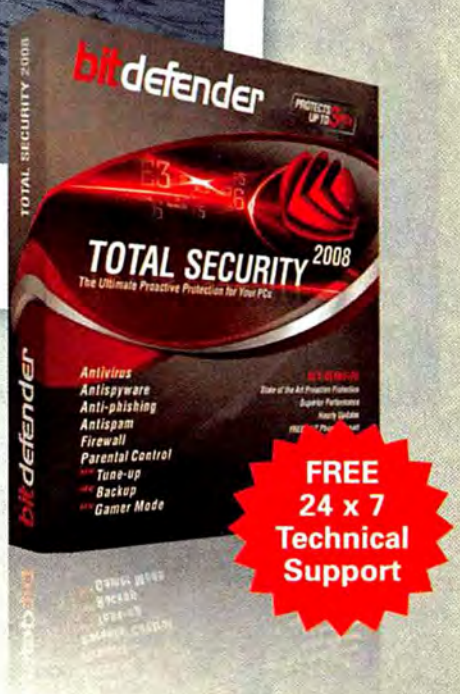

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Techlog

HARRY McCRACKEN

Welcome to the Next Generation of *PC World*

As our 25th anniversary approaches, we've given this magazine a major makeover designed to make it even more useful. Here's the inside scoop on what has changed—and what hasn't.

EVERY SMART EDITOR knows there's only one way to figure out what readers want from a magazine: Ask 'em, early and often. So last fall, we invited a group of subscribers to our San Francisco offices. Clipboards in hand, we grilled them about the tools they rely on to make decisions about the technology in their lives—including our magazine, our Web site, and a bevy of competitors.

All of these savvy folks told us that they find the Internet an utterly indispensable resource for researching technology. That was no shocker. But they also said unanimously that *PC World,* in its traditional, dead-tree form, remained essential reading. That was immensely gratifying.

It was a little daunting, too. As we gear up to celebrate our 25th anniversary—coming early next year—it's clear that this is no time for quiet contemplation of our proud history. In an era in which the Web has made tech information plentiful, supertimely, and free, a monthly magazine with a price tag attached to it must work harder than ever to earn and keep your loyalty.

Which is why this issue features the debut of the biggest, most ambitious makeover that we've given this publication in a decade. The third PCW redesign spearheaded by Creative Director Robert Kanes and the talented team at New York–based studio Don Morris Design, it brings a fresh new look to our pages, plus lots of beauty that goes way more than skin deep.

OUR VERY first issue, which hit the stands in early 1983.

THE ISSUE you're holding right now, with a new look for 2007 and beyond.

Goal one was to preserve all the things that didn't need fixing—starting with *PC World*'s venerable mission and tradition of being an advocate for users, not a fluffy industry cheerleader. Our goal remains being a trusted adviser as you choose, buy, connect, and troubleshoot an expanding array of products and services for home, work, and everywhere in between.

In other words, we define the PC in our name pretty liberally. And the vast majority of readers tell us that they like it that way.

Still, whether we're covering gaming PCs (see page 74) or hosted antispam services for small businesses (page 60), our world remains one of devices, data, and networking. That's why you'll find smart phones and HDTV in *PC World*, for instance, but not sports cars or spacecraft.

All of our flagship sections and departments remain, from the lab-tested product evaluations in *Reviews and Rankings* to the hands-on advice in *Here's How.* But we've tweaked them in multiple ways—including a few name changes—and added a bunch of new features to every issue. Some highlights, in order of appearance:

The cover: Ever spot an intriguing line on a magazine cover and then have trouble discovering where the story is located inside? Our cover now lists the pages of every article mentioned (except the main story—that one we figured you could find on your own).

PCW Forum (page 19): *PC World* isn't just a bunch of editors in a building »

PICK OF THE MONTH

CONFESSION TIME: I may be editor in chief of *PC World,* but I find certain technologies kind of intimidating—such as the extremely useful but somewhat arcane backup system known as RAID. End result: My data isn't as well protected as it could be.

Data Robotics' **Drobo** device provides RAID-style benefits without RAID-style complications—and for me, that makes it the most intriguing product in this issue. This slick little "data robot" copies all of your files to multiple drives on the fly, and does it so seamlessly that you can safely swap out disks without shutting Drobo off. Check out Melissa Perenson's full review on page 60 in our new *Business Center* section.

PHOTOGRAPH: MARC SIMON

in San Francisco—it's a community of millions of tech enthusiasts with opinions and expertise to share. In response, we have revamped our *Letters* section into a paper-based companion to PCWorld.com's forums, edited by Online Community Manager Kellie Parker.

Forward (page 26): Today you're far more likely to turn to the Web than to a monthly magazine for breaking news. (Hey, did I mention that PCWorld.com publishes dozens of news stories a day?) So here in print, our *News and Trends* section has morphed into *Forward.* The name refers both to its location in the magazine and its focus on the technologies and trends that will impact your digital life today, tomorrow, and beyond. *Forward* is also the home of Tom Mainelli's *GeekTech* column (long a PCWorld.com mainstay) and a new feature called *Beta Watch,* where we'll look at early versions of interesting new software and services.

Business Center (page 57): For as long as there's been a *PCW,* many readers have been owners and managers of small and medium-size businesses. If you're one of them, this new section speaks directly to you, with coverage of products and services that can help you get the job done. (*Business Center* is also the name of a new PCWorld.com area—see it at find.pcworld.com/57925.)

Security Alert (page 65): I hope to live to see the day when viruses, spyware, and other Net-borne attacks aren't a major headache for PC users. For now, our editorial surveys tell us that no PCW content is more valued than articles on identifying and eliminating such threats—which are what you'll find in this new section. (Two existing, and popular, columns—Stuart Johnston's *Bugs and Fixes* and Erik Larkin's *Privacy Watch*—are now ensconced here.)

Reviews and Rankings (page 70): Our product megasection is now home to the freeware, shareware, and trialware evaluations of Laura Blackwell's *Download This,* another much-read PCWorld.com column that's made the trek into print.

Here's How (page 136): We've expanded this perennially popular how-to section, packed it full of more tips on a wider range of topics, and brought Steve Bass's *Hassle-Free PC* from the front of the magazine into its pages.

PCWORLD.COM AS IT looked way back in the mid-1990s (left) and its latest incarnation.

Throughout the magazine: Readers urge us to keep *PC World*'s paper version a useful, meaty read that can stand on its own. But they also say that pointers to related content on PCWorld.com are appreciated. So as you make your way through this issue, you'll find more prominent mentions of relevant items on our site—particularly items with features that print can't replicate, such as video and interactive tools.

I began this column by saying that smart editors depend on readers to tell them about their wants and needs. And given all the changes we've made around here, it only makes sense to end on that note, too. Once you've read this issue, tell us what you think, either by visiting our forums (forums.pcworld.com) or by dropping me a line at harry_mccracken@pcworld.com.

PC World has stayed successful for nearly a quarter of a century only because we pay attention to your interests and requests—and we plan to keep listening and evolving for a long time to come.

Read Editor in Chief Harry McCracken's blog at blogs.pcworld.com/techlog. ●

THE EDITORS, TEST Center analysts, designers, and producers who bring you *PC World* in its print and online editions are a busier bunch than ever—but we managed to persuade most of them to take a little breather on July 9 for this staff portrait.

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PCW Forum

Our annual "100 Best Products" story in July sparked questioning and outrage among our readers. Did Google Apps deserve to be #1? Is the Wii the only deserving game console? Tell us what you would put at the top of your list at find.pcworld.com/57893.

100 Best Products of the Year

From the February 22 *Techlog* blog: "Google Apps could evolve into something interesting." Hardly sounds like a description of the best product of 2007.

adamb, from the PC World Forums

You folks have sold out. This is either a hoax, or someone is clueless. Google Apps as #1? What happened to the personal in personal computers? Is the #1 product in 2008 going to be a dumb terminal? Incredible!

tjeff, from the PC World Forums

How could you put Xbox 360 Elite [#18] and the Nintendo Wii [#3] on your list of Best Products of 2007 without including the PS3? I have to say I'm really disappointed in *PC World!*

wowguru, from the PC World Forums

Personally, I felt that the only video game console that deserved to make the list of your products of the year was the Nintendo Wii. The PS3 doesn't have the software support (yet), and the Xbox 360 has already established a reputation for dying early via hardware failure, thus leading to the "red ring of death." The Wii, on the other hand, has evolved into the first video game system to really reach the masses with simple, interactive play that caters to all ages, while providing a superb user interface, interactive controls, Web browsing, news, weather, a photo editor, a classic gaming download service, and built-in Wi-Fi.

captwoods1, from the PC World Forums

I really cannot understand the position you gave Firefox [#35]. How can a not-fully-standards-compliant browser be in the top 100? It is slower, more bloated, and less secure then Opera, which is not mentioned. Opera is much faster, much slimmer, supports more platforms, and is much more secure.

nilotpal, from the PC World Forums

TV on Your Cell Phone

I'm sure I speak for many people when I say I have no need to watch television on my cell phone (*News and Trends*, June). I would just like to be able to receive phone calls and place phone calls whenever I need to. I live in fast-growing northwest Las Vegas, a major metropolitan area, yet cell phone service from two different carriers I have tried is absolutely horrible. I want good, reliable cell phone service. I already have a television.

Larry Fuss, Las Vegas

I'll wait for [iPhone] 2.0. Never rush to get the first of anything.
homelights, from the PC World Forums

The Power of Negative Thinking

To Stephen Manes—Right on with your *Full Disclosure* column in the July *PC World*. If everyone went "negative" on broken, bloated software, maybe things would work a lot better for all of us. As long as we buy, we'll cry. There ought to be a law that if you have a problem with software and it doesn't meet the vendor's hype, you should get your money back. It's that simple.

Bruce Watts, Purling, New York

The first page I head for in the magazine each month is Stephen Manes's *Full Disclosure* because he tells it like it is. Stephen, I fully agree with column on "Negative Thinking"—but on a larger scale I'm finding this same mind-set in normal life. It's as though we are not allowed to have an opinion anymore. We absolutely *must not* go against the general (here comes the magic word) *consensus*. I guess I was born questioning everything, and the older I get, the less I believe. Anybody who wants me to "go along" with the established thinking usually gets an original thought from me. Thanks Steve.

Stargazer, from the PC World Forums

12 Biggest PC Disasters

Seldom have I experienced such exquisite, uncontrollable squealing and side-splitting laughter as when I read "Problem: Your computer won't boot" (July). I picture the warm comfort being experienced by many readers, knowing they need not have a bootable computer in order to consult their vendor's site. Skip those activities invented to delay your calling for tech support. Duplicate C: on the first partition of a slave »

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Arland Miller, Lawrenceville, Georgia

> After trying [Apple's] Safari [browser] for all of 15 minutes, I conclude that it sucks. I'm all for new, innovative products, but this one is neither.
>
> *rivie1970, from the PC World Forums*

Egad! You guys are too far into techie stuff. Even us toads know that if your PC won't boot, the first thing you do is *get naked.* The PC, that is. Open the case and strip the machine down to the C: drive and the video card. If it then boots, you have a bad component. Add the parts back one by one, and see which is the bad boy. In our last two nonboots with a blank screen, it was a dead DVD-CD drive. Now, I just pull IDE 2 from the motherboard as a first step. I would hate to do all you said to do only to find a dead CD drive.

Burt Ballentine, Keller, Texas

I just read your feature on fixes for PC disasters. One that grabbed my attention was the fix for hard drives. I had a drive that just up and quit. Nothing I did worked. There was no spinning or clicking at all. Since it had some important information that I did not want to lose, I went to a popular online auction site and bought a drive that had the same model number as mine. I then switched the circuit boards and reinstalled the original drive. It started right up, and I was able to retrieve all of my information. I guess that saved me about $2990 [on a new PC].

Daniel Whitsel, Mount Joy, Pennsylvania

Internet Radio Not a Utility

In a *News and Trends* article in the July issue, *PC World* suggests that Congress might reverse the rates recently posted by the Copyright Royalty Board for Internet radio. I have a better question: Why is the federal government involved with setting prices for a consumer product in the first place? While utilities require government oversight because they provide necessary products and are locally monopolistic, Internet radio is not a utility. Whatever the public chooses to pay, it will pay. If greedy suppliers try to grab too much profit, the public will stop paying and force the suppliers to lower their prices. Along the way, some companies may go out of business. That's the free enterprise system at work. Mess with it at your peril.

Dennis W. Brandt, Red Lion, Pennsylvania

PC World welcomes your feedback. We reserve the right to edit for length and clarity. Share your thoughts in the Comments area under each story on our Web site, or visit our Forums (find.pcworld.com/55165). Send e-mail to forums@pcworld.com.

CORRECTIONS

IN THE JULY review "Budget Business PCs That Run Vista" [*Reviews and Rankings*], the photo on page 54 should have had the number 4 positioned on the left side of the image, over the drive bays, not over the PC's power supply.

In "Bargain Cameras: Basic but Capable" [*Reviews and Rankings*, August], we should have said that the Kodak EasyShare C653 provides exposure compensation. We also should have stated that the C653 does not have aperture-priority mode.

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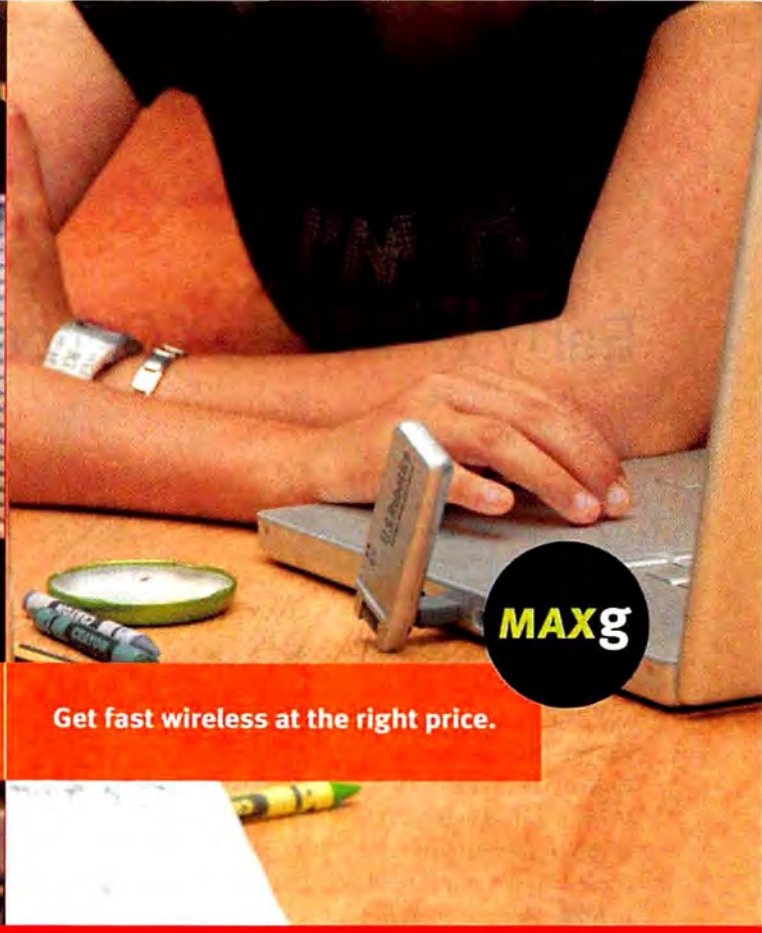

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Forward

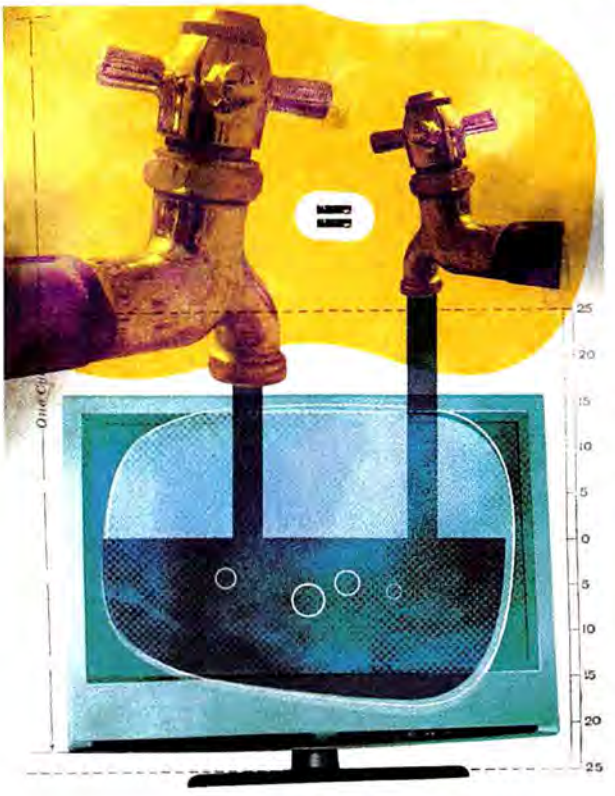
Early IPTV Uses Only a Little of Its Fat Pipe

BY MARK SULLIVAN
AND TOM SPRING

REAL IPTV IS arriving in a growing number of areas around the country, delivered by fiber-optic cables that have enough bandwidth to eventually show—and let you interact with—nearly any programming you can imagine. But the first versions of the future of TV—Verizon's FiOS and AT&T's U-verse—are relatively tame copies of what you're used to from cable providers like Comcast or satellite companies like Dish Networks.

Both FiOS and U-verse offer better picture quality and usability than standard cable, but they aren't living up to their potential for interactivity and a wide breadth of programming—yet. The prices—around $100 for a well-equipped package including HD programming, DVR, and super-high-speed Internet access—match up well with cable, so despite our disappointment in the limited ambitions of these IPTV services, we think you should seriously consider subscribing if one is available in your area.

Verizon's FiOS TV has signed up almost half a million TV subscribers in 11 cities since the service was launched in September 2005. The company expects to have between 3 million and 4 million TV customers by 2010. AT&T's U-verse service started in June 2006 with only a few thousand TV customers, but by midyear it had nearly 40,000 subscribers. According to AT&T, U-verse is available in 21 markets in seven states, and 600 new U-verse customers are being added every day.



Verizon's FiOS and AT&T's U-verse IPTV services looked fine during our hands-on tests, but they're not revolutionizing TV—yet.

To take a close look at both services, *PC World* spent a couple of afternoons watching and experimenting with FiOS TV and U-verse on the couches of relatively new subscribers to the services. Here's what we discovered.

Verizon's FiOS TV

The first thing that jumped out at us during our couch time at a FiOS house was the picture quality. The immense bandwidth offered by fiber-to-the-home services delivers a clear picture without any of the visual artifacts of video compression commonly associated with satellite and cable TV signals.

FiOS picture quality was razor-sharp with no noise or pixelation. Over-the-air broadcast images appeared vivid and crisp; and changing channels, we found, took considerably less time than with standard cable service.

The program guide interface was very slick, with full-color menus and lots of visual flash. As you drill down into content areas, menus expand as if you were navigating through folders and files in Microsoft's Windows Explorer. Depending on your preferences, FiOS can squeeze your TV image into either the upper left corner or a side of your display while you browse the guide.

Calling up the video-on-

ILLUSTRATION: STUART BRADFORD

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Will issues of class impede the nationwide spread of IPTV? Read about the controversy at find.pcworld.com/57949. Interested in streaming TV sites? Check out our list at find.pcworld.com/57950.

demand menu took about 5 to 10 seconds. But once we began navigating within the VoD content areas, the content pages loaded very quickly. VoD menus were rich in color and detail with appealing box shots of movie titles and brief descriptions.

One surprise is that FiOS gives you access to the same V Cast Mobile TV content that is available through select Verizon Wireless handsets. Programming includes video from CBS, NBC, Comedy Central, MTV, Nickelodeon, and Fox News.

The FiOS DVR compares well with TiVo. We found it easy to pause live TV, use a 30-second skip button to pass up commercials, or program the device to record a season's worth of programming. All FiOS DVRs come with two tuners, which means that you can record programming on one channel and watch live TV on another or record two different shows at once. The service also comes with a feature called Home Media DVR, which allows you to stream programs on your DVR to other FiOS set-top boxes in your house, though you can't stream in HD.

Widgets on Your TV

FiOS does offer several neat interactive features. You can call up little widgets to display bits of information such as weather or traffic data at the top of the screen. Additional widgets—for example, sports scores and community information such as local school closings—are in the works, according to Verizon.

One service option (for pricing info, see find.pcworld.com/57921) lets you use the FiOS set-top box to pull pictures and music from PCs in your house that are connected to the FiOS broadband service. You gain access to your picture and audio content through a FiOS menu option called Media Manager, which presents you with audio playlists and image collections for playback through your TV. Video isn't yet supported, but that capability is coming, Verizon says.

WITH FIOS, YOU can see your channel and the other options easily.

Searching for content on FiOS is a breeze. Using the on-screen keyboard, you can search by show, subject, actor, genre, or keyword. FiOS searches the content of the FiOS program guide, as well as the VoD library and even shows recorded with a FiOS DVR. FiOS lets you bookmark any of the 8600 video-on-demand titles in its library for later viewing.

Still, we can't help feeling that Verizon's service is missing some opportunities. What about streaming Internet radio content or linking to Web services like Flickr and YouTube? Or offering access to special-interest programming that regular cable and satellite systems just don't have room for? Perhaps it could display caller ID information on the TV when someone calls a Verizon standard land line associated with the account. This should all be light lifting for the massive data pipe that Verizon is delivering not only to your PC but to your TV as well. With Verizon already pushing its TV, phone, and Internet triple-play service, a higher level of integration would be nice.

AT&T U-verse

Tests of AT&T's U-verse TV service produced similar results. Our afternoon with U-verse started on the couch of an upscale home in San Ramon, California. Our host, Mike Batongbacal, said »

PLUGGED IN

IPHONE HYSTERIA: What's worse—waiting days in line for a device that didn't sell out or paying $500 for a phone with a dog-slow data plan?

NEW DELLS: We love the United Colors of Benetton look, but must all the new desktops and laptops be named Inspiron? Confusing.

GOOGLE VS. MICROSOFT: Desktop search dust-up pits the two tech giants against each other. Who said heavyweight pugilism was dead?

TASER & IROBOT TEAM UP: It's for the military now, but we're hoping for a Roomba that'll be able to *make* people lift their feet for the vacuum.

DRAFT N'S NTH DRAFT: What's good for beer but bad for Wi-Fi specs? Drafts. Seriously, you'd have to be drunk to buy draft-n gear now.

PS3 PRICE CUT: Underperforming console drops to $499. That helps, but it doesn't alter the final score: Nintendo's Wii is still cheaper and cooler.

that he had purchased the middle tier of U-verse service, which provides 240 TV channels (including 25 coming in HD), one set-top box with a DVR, and two other set-top boxes without. AT&T asks customers for a whopping 7-hour window to set up the service; Batongbacal reports that his installation took nearly 8 hours—but he hasn't had to call U-verse support in the two weeks since it took place.

The U-verse channel lineup contains everything you'd expect in a cable system, but not much more. We saw no content exclusive to U-verse and no extremely "long tail" or specialized content—you won't find a "Knitting Channel" among its offerings. At least for now, U-verse programming seems designed to appeal to mainstream audiences. U-verse video looked clean and consistent; we noticed no jitter or pixelation on any channel, though our host said that he had seen a couple of brief episodes of pixelation in the fortnight since his service began.

'PIP Browsing'

The attractive, Microsoft-developed programming guide in U-verse looks similar to those you may have seen on Comcast and TiVo systems, but it includes some thoughtful additions: A picture-in-picture (PIP) box runs in the corner, showing you what is playing on the channel that you're currently browsing in the guide. On several occasions, however, that PIP grew extremely jittery. Our host said he'd noticed this problem numerous times since his U-verse was installed.

Once you've selected a channel, you can work with U-verse's "PIP Browsing" keys to browse other channels without leaving the one you're on. Browse one way, and the next channel shows up in the PIP box in the corner; underneath it is a little bar showing you the time already expired in the current show on that channel.

THE FIOS VIDEO-ON-DEMAND service boasts a handsome interface.

This helps you avoid switching over to a show that's almost over. Pretty cool.

Microsoft took pains to make changing from one channel to the next "instantaneous." Though it's not quite there—you experience a lag of about half a second before the next channel appears—as with FiOS, changing channels on U-verse is appreciably faster than on standard cable systems.

Untapped Potential

Unfortunately, U-verse fails to go much farther than that. U-verse does let you easily build "Favorites"—pages in the programming guide with all your favorite channels. You'll also find it easy to block channels or programs that you don't want members of the family to watch.

We weren't impressed with U-verse's ability to "learn" our viewing habits and to suggest titles we might like. There's certainly no reason why IPTV services can't compile "Top 50 most-watched" and Amazon-style "If you liked *X*, you might also like *Y*" lists to help bored viewers find new shows. Nor can they let you search for shows by keyword, as TiVo does. Such features would be a huge help in finding interesting programs among the hundreds of channels available.

You can type in whole or partial names of shows, actors/actresses, or subject matter, to search for programs that match. We tried searching with all three types of keywords, and got relevant results for each, though U-verse Search begins searching automatically before you can finish entering your keyword, forcing you to wait for what seems like an eternity before the system acknowledges the rest of the characters. It's annoying.

U-verse uses a Motorola set-top DVR with a 160GB hard drive capable of storing 24 hours of HD or 120 hours of standard-def TV. U-verse doesn't yet offer a DVR that allows you to watch shows that were recorded on the set-top box in the living room elsewhere in the home.

The U-verse remote control contains an intriguing button marked "Go Interactive," but for now the button is dead. AT&T says that it will soon bring up personalized weather, traffic, and sports information. This seems emblematic of U-verse TV and FiOS today: The potential for some wonderful IP-based personalization and interactivity features exists, but that potential has yet to be realized.

Internet via Fiber

TV isn't the only draw for fiber-to-the-home services: FiOS offers Internet access at potentially astounding speeds, and FiOS users reported the highest satisfaction rates of any group in our recent ISP survey (see find.pcworld.com/57923).

FiOS provides speeds of 15 mbps downstream and 2 mbps upstream for $50 a month, versus Comcast's $43-per-month basic cable-modem service, which delivers 6 mbps and 384 kbps respectively. U-verse has packages similar to cable, with 6 mbps downstream and 1 mbps upstream for $35 per month. For serious (and affluent) speed junkies, Verizon offers 30-mbps downloads and 5-mbps uploads for $200 a month.

Both FiOS TV and U-verse are viable competitors to cable and satellite TV. But it will take more ambition on their part for their services to become truly superior.

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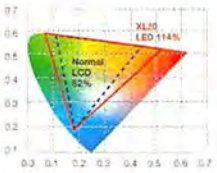
SyncMaster XL20
20-inch LED BLU Monitor
MSRP $1999



imagine color without compromise.

When the color has to be right, there is only one choice: the 20-inch Samsung SyncMaster XL20. Producing a larger color gamut of 114% of the NTSC color, the XL20 provides a spectrum range never seen before on conventional LCDs, thanks to its LED BLU (backlight unit). In addition, Samsung's unique Color Management System — Natural Color Expert combined with the Huey™ Color Calibration probe — provides accurate color temperature monitor settings to suit your media requirements, resulting in uniformity between images and digital devices.

To learn more, call 1-866-542-7214 or visit www.samsung.com

SAMSUNG

Via Creates Business Card–Size Motherboard

VIA TECHNOLOGIES HAS a knack for shrinking motherboards, and the company's latest design is its smallest yet. Called Mobile ITX, the new motherboard measures 3 by 1.7 inches—roughly the size of a business card—and includes a low-power Via C7 CPU, memory, and a chip set with integrated graphics and video capabilities.

The Mobile ITX design, which should hit markets next year, will make possible a range of small, powerful computers, such as "super-smart phones," says Richard Brown, Via's president of corporate marketing.

Brown won't say which C7 chip the board will use, but says the chip consumes 0.25 watts of power or less when running under a load.

Via previously developed Mini-ITX, which measures 6.7 by 6.7 inches. In recent years, Mini-ITX has become an informal standard, and boards based on the same dimensions are currently used with chips manufactured by AMD and Intel.

—Sumner Lemon

VIA'S MOBILE ITX motherboard measures just 3 by 1.7 inches.

GEEKTECH TOM MAINELLI

Can AMD Still Compete in High-End Chips?

PC ENTHUSIASTS LOVE competition—especially at the high end of the hardware spectrum. When a company launches a new flagship desktop CPU or graphics chip, we throw ourselves into the benchmarking minutiae, looking to see how it compares with its most current competitor. To us, this is fun.

> Intel and nVidia own the high-performance CPU and GPU crowns—and that's bad news for the enthusiast crowd.

Of late, unfortunately, we haven't had much to sink our teeth into. On the CPU side, AMD hasn't had a competitive high-end product since Intel launched its Core 2 Duo processors in July 2006. In graphics, similarly, nVidia has enjoyed a stranglehold on the top spot for a long time, as AMD-owned ATI's recent Radeon HD 2000 line launch (see find.pcworld.com/57871) did not produce a high-end competitor to nVidia's GeForce 8800.

AMD's inability to push the envelope has had some people suggesting it has abandoned the enthusiasts who helped put it on the map so as to focus on the more lucrative mainstream. Clearly, AMD acquired ATI to better contend with Intel in mainstream markets, where vendors like to buy all-in-one packages that have a CPU, a chip set, and graphics.

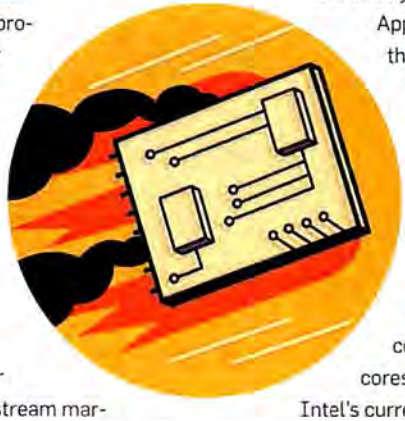
However, I think it is shortsighted to assume AMD will give up on the high end. Here's why: Enthusiasts may account for only a small percentage of sales, but we're the ones everybody else comes to for buying advice. Add in the large number of enthusiasts who also happen to work in IT departments (and are responsible for purchasing huge quantities of mainstream PCs), and you begin to understand why AMD must be more competitive at the top.

AMD's Fall From Grace

Just how bad is AMD's situation on the high-performance front? Kelt Reeves, president of high-end PC purveyor Falcon Northwest, says his company doesn't even stock AMD processors. He'll special-order one for you, but he says performance-minded customers—who bought AMD almost exclusively prior to the Core 2 Duo launch—just aren't interested.

So what must AMD do to become a contender again? For starters, it's time for the company to ditch the aging K8 architecture. It served the company well—so well it forced Intel back to the drawing board with stunning results—but now we need to see something new.

And something new is coming: AMD's 10h architecture will power new server chips (code-named Barcelona) due very shortly, as well as new desktop chips (code-named Agena) that are due by the end of 2007.



Apparently AMD also decided that a year of whupping by the Core 2 Duo has tarnished the Athlon name: The new top-of-the-line CPU is called Phenom. AMD says Phenom will ship in dual- and quad-core flavors. A key advantage of the quad-core Phenom is that all four cores are on one die, AMD says. Intel's current quad CPUs are essentially two dual cores linked by a frontside bus.

AMD's approach certainly seems more elegant, but we won't know whether the new design is really a plus until we see test results. Meanwhile, for the truly hard-core, the company has also previewed a new enthusiast platform, code-named FASN8, that supports two quad-core Phenoms.

Intel isn't sitting still: The company will soon launch its next desktop chip, a Penryn family member code-named Yorkfield. Based on an updated version of the highly successful Core 2 Duo architecture, these quad-core chips will feature improvements such as larger cache sizes and new SSE instructions. They won't easily surrender Intel's crown.

I'm not picking sides. As an enthusiast, I just want the fight to be interesting again.

ILLUSTRATION: HARRY CAMPBELL

New Version!

Are Your Employees Caught in the Web?

[Find out by monitoring all PC and Internet activity]

Reclaim Lost Productivity

Every day the average employer loses 81 minutes of productivity per employee to Web-based distractions. Most employees don't realize how quickly the stolen minutes add up. But research shows some 13% of workers habitually log two or more hours of internet-based off-task activity per day.

BeAware Corporate Edition

BeAware helps identify problem areas, offenders and frequency so you can coach employees, reduce company risk and help teams reclaim lost productivity.

BeAware allows you to view activity by user, department or enterprise.

How Does It Work?

BeAware tracks all employee PC activity through live, real-time monitoring of E-mails, Web-surfing, Chats and program usage (recording screen shots, time accessed, and content).

"BeAware showed me exactly what my team was doing so I could coach & motivate them toward our goals."

BeAware can be remotely deployed on any networked company PC (local or remote) to monitor specific individuals, departments or an enterprise up to 10,000 employees.

Administrators can view reports of on-line activity from anywhere, and receive automatic notification when select keywords, websites or specific applications are accessed.

Once problem areas are identified, you can resolve them with better policies, access control, employee coaching and motivation for improved focus and productivity.

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Microsoft Wants to Put a Server in Your Home

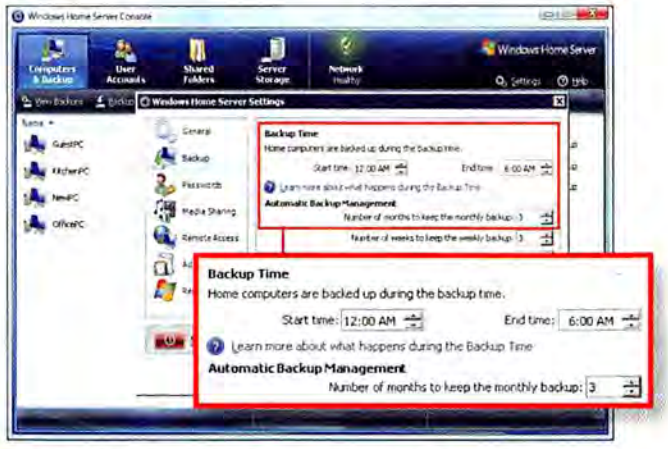
REMEMBER WHEN servers were giant, expensive machines sitting in a closet? This fall a new class of device running Microsoft's Windows Home Server operating system could help civilize the server even more.

You'll see this OS first in hardware such as HP's MediaSmart Server, which will offer centralized storage for up to ten PCs; automated backups of multiple PCs on a network; and photo, music, and video sharing, all both from within and outside of a home's network.

The MediaSmart Server is due out by the end of September (at press time, HP hadn't said how much it would cost); similar products are expected from Gateway, LaCie, and Medion.

We like what we've seen from Release Candidate 1 of the Home Server software. Streaming daily backups and remote data access work as advertised. Other features, such as remote desktop access, centralized reporting on which of your PCs need patches or virus-definition updates, and the ability to search through files of PCs backed up on the server prove extremely useful.

> Windows Home Server devices will automatically back up multiple PCs and let you share media files between rooms or over the Web.



MICROSOFT'S HOME SERVER makes it easy to set up automated backups of the PCs on your network, using this console.

Inside Home Server

Microsoft focused on making Home Server easy to set up by automating much of the configuration process. For example, setup will attempt to configure UPnP 2.0–based home routers automatically for remote server access, removing one often-complex step. Router configuration remained a major headache during our Release Candidate 1 testing, but Microsoft says that this feature should be supported by "leading" router manufacturers at launch.

Home Server will allow you to assign a unique name to your server, making it easier to connect to remotely. By visiting Windows Live Custom Domains, you can register—for free—a domain name that lets you access your home server from an address such as YourName.homeserver.com.

Server Deployment

Windows Home Server will initially be available only on dedicated server systems such as HP's MediaSmart Server, which isn't designed for use as a regular PC. But Microsoft is considering making the software available separately. Its system requirements are surprisingly spare: a 1-GHz, Pentium III–class processor; 512MB of RAM and an 80GB hard drive; and network access.

—Elizabeth Montalbano and Tom Spring

Xbox 360 Repair Bill to Hit $1 Billion

MICROSOFT HAS admitted significant problems with its Xbox 360 game console and pledged—at an estimated cost of $1 billion—to extend the console's warranty for any customers who have experienced the phenomenon that gamers have termed "the Red Ring of Death."

The Xbox 360 will now be covered by a three-year warranty that will start on the date of purchase. Microsoft will repair or replace the console, including the cost of shipping, within that time. The company will also reimburse customers who have already paid for repairs.

Reports of new heat sinks appearing in repaired consoles (see find.pcworld.com/57899) would seem to point to inadequate cooling as the source of the problem, which is indicated by three flashing red lights around the console's power button. But Microsoft refuses to describe its exact nature. "We understand the issues and have made changes to dramatically reduce the problem going forward," says Robbie Bach, president of Microsoft's entertainment and devices group.

Customers have been reporting hardware problems since the consoles first hit stores in 2005, according to IDC analyst Billy Pidgeon. But Microsoft says serious problems started later. "For the first year plus, this was something that was not on our radar," says Bach. "In the last couple of months we started to see a significant increase in repair requests... so we geared up to respond to that appropriately."

—Nancy Gohring

ILLUSTRATION: STUART BRADFORD

Tell PC World about your experiences with PCs, cameras, printers, and other electronic devices to automatically enter your name in the drawing for a 1080p Toshiba LCD HDTV. The Web site explains the official rules and specifies how to participate in the drawing if you choose not to take the survey. You need to submit only one entry to qualify, and you can enter through October 15, 2007.

Enter Here To Win:

www.pcworld.com/pcwsurvey

A 46" Toshiba HDTV!

SURVEY DETAILS

NO PARTICULAR ANSWER will impact your chances of winning. We will not sell your personal data or share it with any third parties. The prize drawing is open to all legal U.S. and Canadian residents (except those in Quebec and Puerto Rico), age 18 or older. No purchase or survey participation is required to enter or win the prize drawing. Toshiba is a registered trademark of Toshiba Corporation or its corporate affiliates. Toshiba is not affiliated with PC World and does not sponsor this contest.

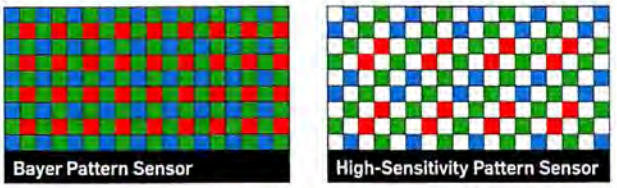
PCWorld

Kodak Camera Sensors See Well in the Dark

SHOOTING IN LOW light can be a source of frustration. Eastman Kodak aims to make such shots easier with a new image sensor technology that makes digital cameras more sensitive to light and yields sharper pictures.

With current technology, photos taken in challenging lighting are "either noisy, or you have to leave the shutter open for a long period of time," says Mike DeLuca, Eastman Kodak market segment manager for professional and applied imaging.

The new sensor is two to four times more sensitive to light than sensors available today, which translates to one or two photographic aperture stops, so photographers can expect better performance and reduced motion blur when taking pictures in low lighting.



CURRENT CAMERA SENSORS (left) use a system of red, green, and blue pixels. New low-light sensors add a clear, panchromatic pixel.

Pushing Pixels

The revised approach builds on the image sensor technology in wide use today, which is based on the "Bayer Pattern," an arrangement of red, green, and blue pixels introduced by Kodak scientist Bryce Bayer in 1976.

Half of the pixels on a sensor collect green light; the remaining pixels collect red and blue light. Software later reconstructs a full-color signal for each pixel. Kodak's new sensor introduces a fourth pixel type. "This one is clear—it's panchromatic," explains DeLuca. "So all wavelengths of light go through, and are detected by, the pixel. The panchromatic pixels are more sensitive, because they do not filter out any light. We can then use those panchromatic pixels to increase the sensitivity of the sensor, and use the color pixels to collect the color information.

"We're not changing the fundamental structure of the silicon, which gives us the opportunity to deploy this broadly," DeLuca notes. "This technology has the opportunity to become a new standard."

Kodak expects the sensors to become available for digital cameras in 2008.

—Melissa J. Perenson

BETA WATCH

ED ALBRO

Windows Live Mail: Buggy, but Promising

This eventual successor to Outlook Express in Windows XP and Windows Mail in Vista is a free download, but be warned: It's a true beta, with bugs and incomplete features. By default, the program shows a pane of Web search results based on terms contained in your e-mail. We quickly turned that useless feature off. More promising is the photo-message feature that lets you compose captions and even do light editing within your message. But the messages didn't display properly in other e-mail apps. find.pcworld.com/57865

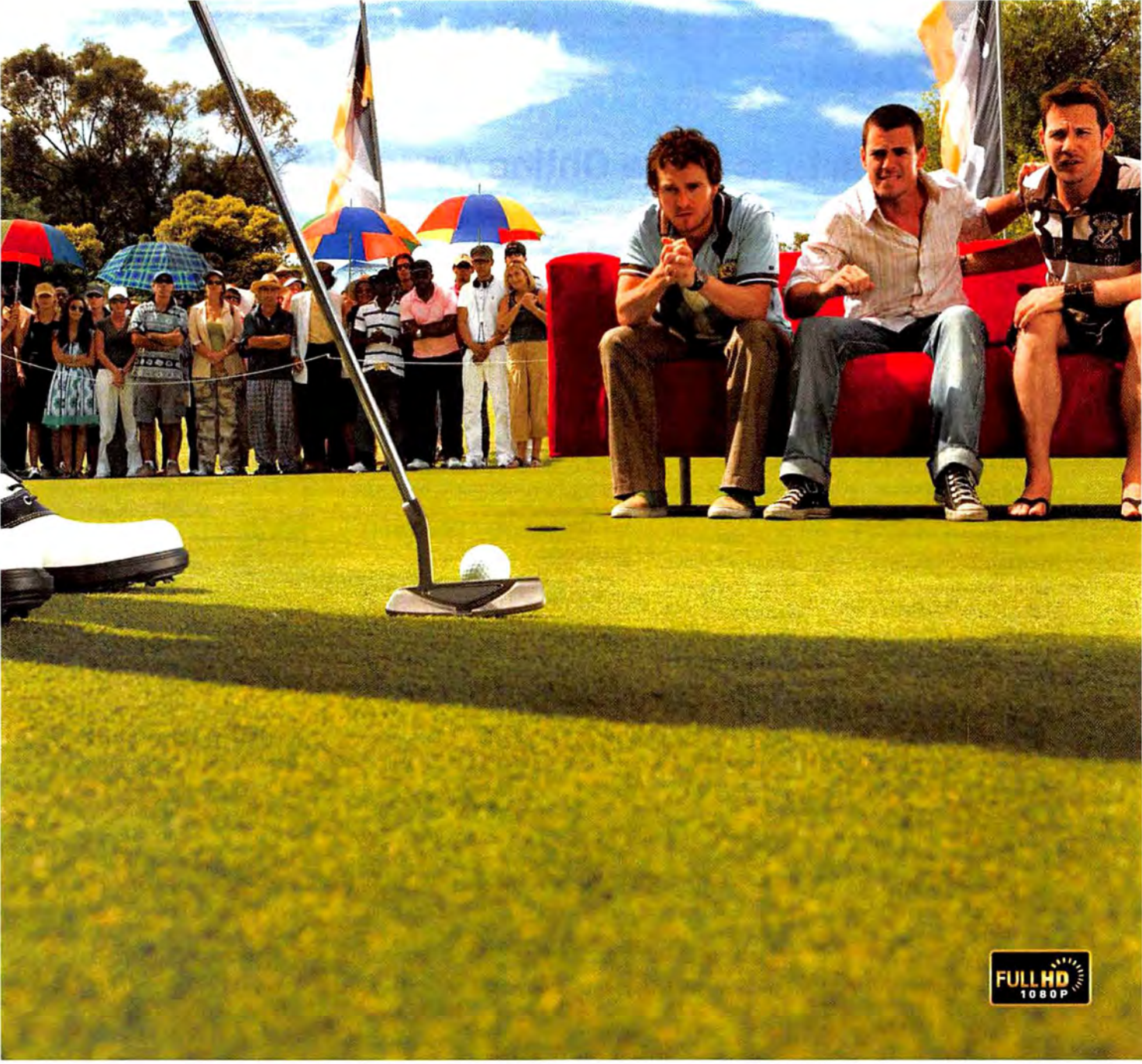
Mahalo: People-Guided Search

If you want to know more about Jessica Alba or the iPhone, Mahalo, a search engine that uses human beings to create pages of results, will be great for you. If your interests are less mainstream, you may be out of luck. Search for a topic that Mahalo is prepared for, and the results are nicely presented. You get quick facts about the subject in a box on the right and categorized sets of links in the main part of the page. Ask about a topic for which Mahalo's human Guides haven't put together a page, and you get mostly Google results, along with suggestions of Mahalo pages on supposedly similar topics. We'll have to see whether the real people driving Mahalo, which is currently in a public alpha, will be able to keep up with the many topics Web users search for. mahalo.com

MAHALO'S SEARCH RESULTS are put together by human Guides.

Yoomba: IM Anybody

The idea of Yoomba is appealing: To send someone an instant message or make a VoIP call, all you need to know is their e-mail address—no more remembering handles from the myriad other chat programs out there. You enter the person's e-mail address, and if they aren't using Yoomba, they'll get an e-mail invitation to download the program. Whether Yoomba will succeed in dislodging people from AIM, Yahoo Messenger, or Trillian is questionable, though. Installation went fine on one of our PCs, but froze on another. And chatting on Yoomba is still relatively primitive: You can't share files or obtain a log of your conversation. yoomba.com



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LGusa.com/FullHD

Google Starts to Make Online Apps Work Offline

How useful are your Web apps if you don't have a Net connection? Google's Gears API aims to make online data available anywhere, anytime.

USE ENOUGH WEB applications, and you'll grow very familiar with one common complaint: Anytime you're offline, you can't get to your data. But a growing number of applications are working to change that.

Zimbra, a popular open-source e-mail application, added an offline version called Zimbra Desktop back in March. Mozilla has announced that Firefox 3 will support caching to allow Web apps to work offline. And Adobe's desktop Ajax application framework called AIR will offer some support for offline data. But, as it often does, Google has made the biggest splash so far with the Gears API it announced in May.

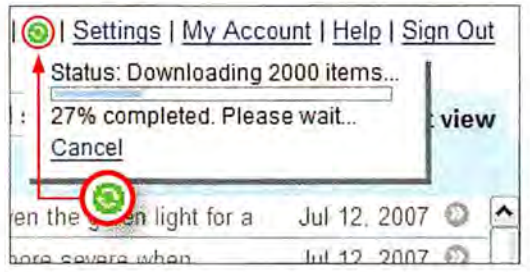
Google released Gears along with the first app to make use of it, a new version of Google Reader that allows for offline reading of RSS feeds. Other companies have begun to use the Gears framework, too; the first one I found to have implemented it is the online to-do list tracker Remember the Milk (rememberthemilk.com).

Getting Into Gears

Both Google Reader and Remember the Milk have taken the same simple approach to offline support. Click the little green arrow icon on the toolbar at the top of either to download and cache the data you'll need to work offline. Once you're synced up, you can unplug your connection and keep working, even if you close and reopen your browser. When you're ready to reconnect, click the blue arrow icon in the same location, and your changes migrate back online.

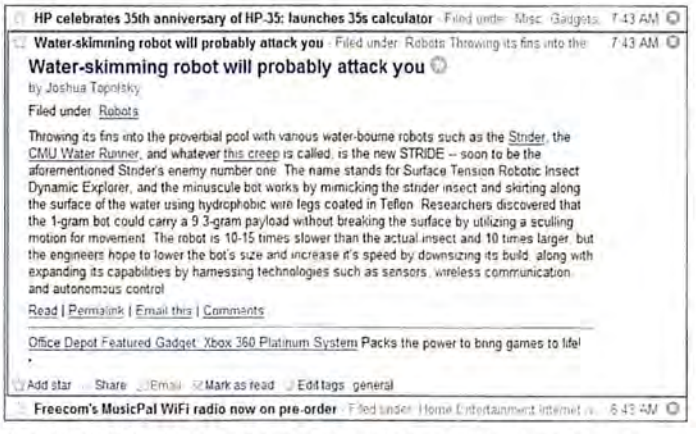
The Gears-enabled Reader works quite well, though its offline support is a bit rudimentary. Full-text feeds such as Engadget and Techcrunch work best, of course, but even in those I'd like to be able to tell Reader to also sync images in the feeds, and to boost the number of posts it syncs for offline reading. Stranger still, if you're browsing online and you click the offline button, you're unceremoniously dumped back at the top of the feed you're reading, and any feed-based images that you're viewing go away.

Remember the Milk has some similar issues. Delete a task in offline mode, and there is no way to recover it, though you can easily undo that action online.



CLICK THIS LITTLE green arrow icon, and a Gears-enabled app will cache data so that you can do your work offline.

Most of all, though, going offline with a Gears app requires some planning. Don't expect to just boot up your PC without a connection and start working in Reader. With current Gears apps, you'll want to start with a live connection and switch them all into offline mode before you dump your connection. It would be nice to have the option to sync automatically whenever you're online.



OFFLINE SUPPORT DOESN'T bring you everything you'll want in Google Reader—for one thing, you won't see any images attached to a feed.

Our Offline Future

Still, these Gears-based apps offer a tantalizing glimpse of the future. Sure, Gears support is confined to Reader for now—but wouldn't a Gears-enabled Gmail or Google Calendar be great? And how about Docs and Spreadsheets, or any other member of the Google Apps family of tools?

Offline support will be a key step in making browser-based applications truly capable alternatives to desktop apps. Adding offline support to Gmail or Docs and Spreadsheets won't be easy—for one thing, that could be a lot of data to move. Careful work will have to be done to sync what's already on the PC with what's living online. But you can bet that such offline support is coming.

In the meantime, plenty of small, tightly focused Web 2.0 apps like Remember the Milk will benefit from offline support. Tool kits such as Dojo Offline (dojotoolkit.org/offline) are springing up to make it even easier for developers to construct Gears applications. And as Firefox 3.0 creates deeper support for offline data caching, the situation should only improve.

—Eric Dahl

kingston.com/flash

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Kingston's DataTraveler® II Plus – Migo Edition and DataTraveler Mini – Migo Edition are multifunctional drives that let you sync your own files, settings, desktop appearance and more on all your computers – at home, in the office or on the road. So you can work the way you want to, everywhere you go.

DataTraveler II Plus – Migo Edition supports Microsoft® Outlook,® Outlook Express, Exchange and Mozilla Thunderbird/Firefox® and Internet Explorer.® DataTraveler Mini – Migo Edition supports Microsoft Outlook Express, Mozilla Thunderbird/Firefox and Internet Explorer.

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ISO 9001:2000 SGS

Please note: Some of the listed capacity is used for formatting and other functions and thus is not available for data storage. For more information, please consult Kingston's Flash Memory Guide at kingston.com/Flash_Memory_Guide. ©2007 Kingston Technology Company, Inc. 17600 Newhope Street, Fountain Valley, CA 92708 USA. All rights reserved. All trademarks and registered trademarks are the property of their respective owners.

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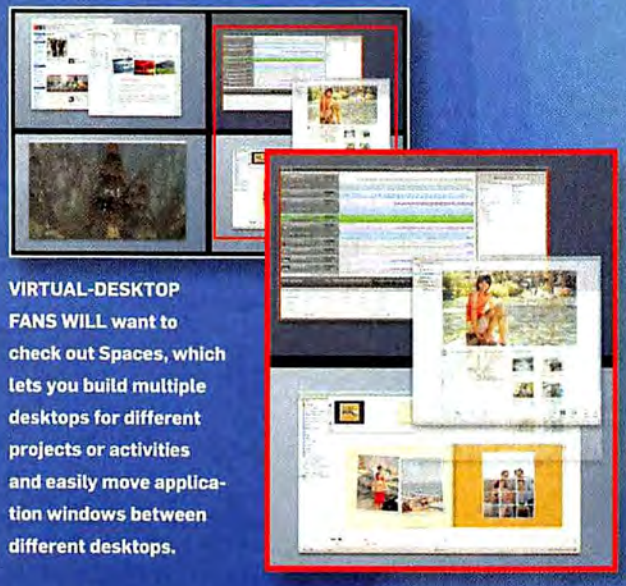
COMMITTED TO MEMORY®

Forward

LEOPARD'S REWORKED FINDER now lets you flip through documents and images using the same Cover Flow interface iTunes employs to let you browse through albums. You can flip through multipage documents or play videos right in Finder.

LEOPARD'S NEW SYSTEM for eliminating desktop clutter is called "Stacks." Click any stack that you've created, and the images, folders, applications, and other files you've added to it fan out from its icon in the dock.



VIRTUAL-DESKTOP FANS WILL want to check out Spaces, which lets you build multiple desktops for different projects or activities and easily move application windows between different desktops.

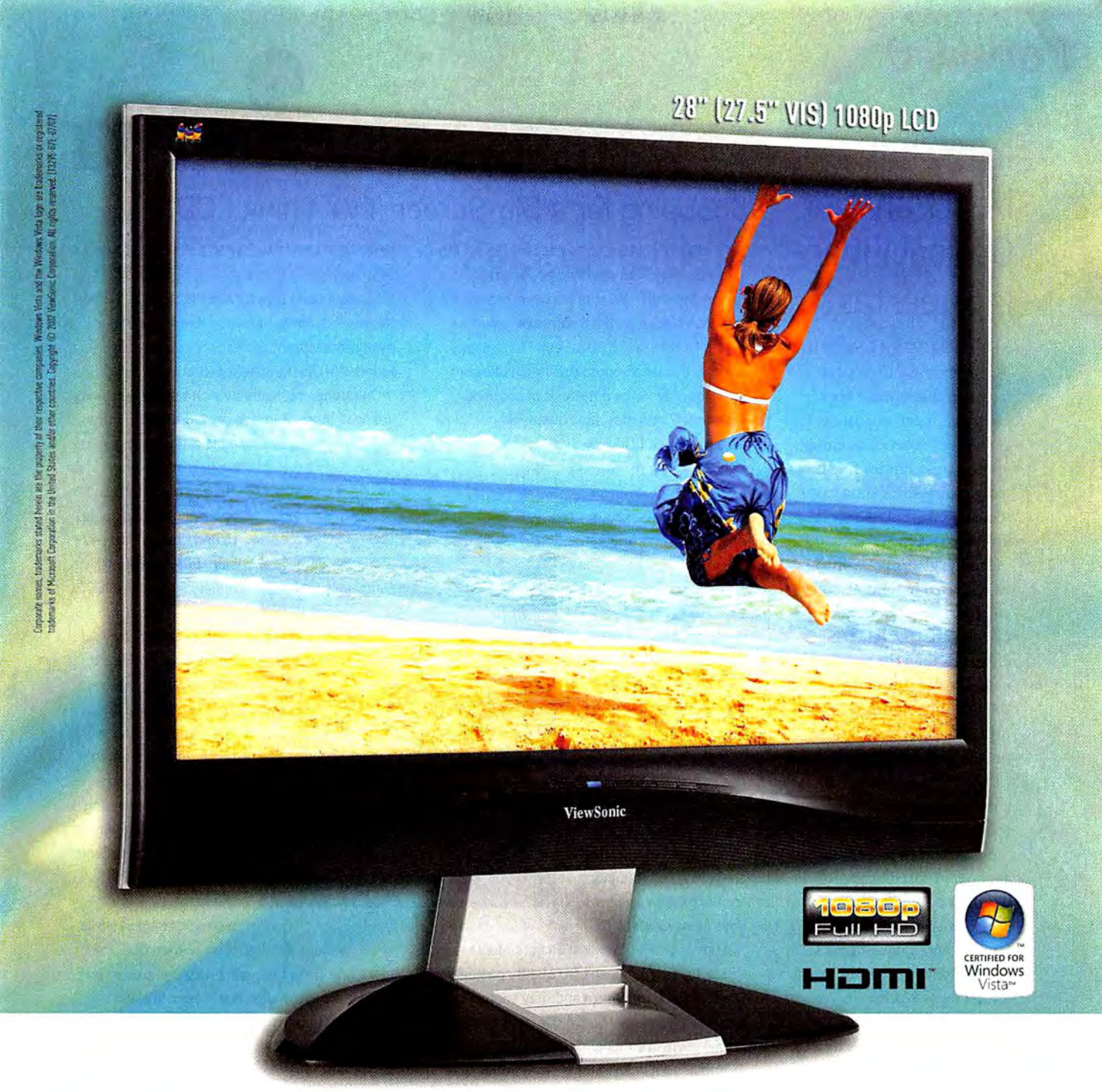
EVEN THE NORMAL icon view for files should look more detailed. A new file viewer called Quick Look drives the thumbnails that appear here. Apple promises that Quick Look will work with nearly any format on your system, including videos and multipage documents.

CONNECT AN EXTERNAL drive, and Time Machine will offer to begin automatically backing up your files. If something goes wrong and you'd like to retrieve a previous version of a file, simply fire up Time Machine and use its timeline interface to zip back to the last time you edited the file.

OPERATING SYSTEMS

Leopard Features That You'll Wish Vista Had

WHEN MAC OS X 10.5 (Leopard) finally arrives in October, this new version of Apple's operating system should introduce plenty of features to make Vista users jealous. Apple's Boot Camp software, which makes it easy to install Windows as a dual-boot option, will at last come out of beta. An automatic backup feature called Time Machine should help remove some drudgery from safe computing. And attractive new interface options promise to boost productivity further and brighten up the look of OS X. We'll have to wait and see how well it all actually works after Leopard shows up, but for now here's a quick peek at several of the snazzy new features Apple showed off at this year's Worldwide Developer Conference.


28" (27.5" VIS) 1080p LCD

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In the Lab: New Polymer Optical Fiber Is Superfast

RESEARCHERS AT Siemens AG have transmitted data over polymer optical fiber cable at a speed of around 1 gigabit per second, opening up new possibilities for the technology—including easy-to-build home networks that link PCs and HDTVs.

Though glass optical fiber—widely used in long-distance and local loop networks—can carry data at much higher speeds than the polymer version, it is also much thicker once wrapped in a protective shield, and it breaks if bent too severely. Cutting it cleanly to attach connectors or make joints requires a diamond blade.

According to project manager Sebastian Randel, the polymer optical fiber that Siemens is testing is about 1 millimeter thick, doesn't break easily, and can be cut with a razor blade.

Previous top speeds achieved over polymer were around 100 mbps, but the technology that Siemens is testing employs a technique similar to that used by DSL to send signals over copper wires, allowing each pulse of light to carry several bits of information and increasing the data-transmission rate.

At press time, Randel was unable to say when a 1-gbps polymer cable product might reach the marketplace and what it would cost.

—John Blau

GADGET FREAK DAN TYNAN

Shopping for a Big-Screen TV? Think LCD

I'VE ALWAYS HAD a soft spot for plasma TVs. There's something soothing about sitting in a dark room with a bowl of popcorn, enveloped in the deep blacks and rich colors of a plasma panel. In contrast, LCD screens have always appeared washed out to me, much like computer displays—the antithesis of soothing.

Such feelings may soon qualify as nostalgia. This past year, LCD has been kicking plasma's heinie, and it may eventually boot plasma out of the consumer market.

> Good-bye, plasma; hello, LCD: The HDTV tide is turning, and LCD is rising to the top.

LCD Surge

Last fall LCDs outsold plasmas in the sweet spot of the market—40-to-44-inch panels—for the first time ever, according to DisplaySearch. Part of that is due to aggressive pricing by LCD manufacturers: The cost of big flat panels has dropped 30 to 40 percent annually for the past two years, says Chris Chinnock, president of research firm Insight Media.

But it's also because LCD quality has been catching up to plasma's and may soon surpass it. While plasma's physical constraints mean makers are struggling to produce affordable 1080p panels below 50 inches, LCDs of that size have been doing full-resolution HD for over a year. The two big knocks against LCDs—that fast action tends to blur, and that colors aren't rich enough—should disappear in rapid fashion.

This year such manufacturers as Philips and Sharp began shipping LCDs with refresh rates of 120 Hz—twice the usual rate—to eliminate the blur effect. Roughly one out of ten LCD sets sold this fall will run at 120 Hz, says Eddie Taylor, VP of TV research for DisplaySearch.

Both LCD and plasma will also benefit from "Deep Color," part of the HDMI 1.3 standard that provides a far richer palette with higher levels of contrast. TVs with HDMI 1.3 connections were scarce last year, but should be easier to find now. Next year we'll begin to see LCDs that use LEDs for backlighting instead of fluorescent lights, allowing them to produce even more vibrant colors, says Jon Peddie, founder of Jon Peddie Research.

One thing you probably won't see this holiday season? More dramatic price drops. LCD supplies will be tight, and profit margins are already razor-thin. But you still should be able to find brand-name, 42-inch, full-resolution panels for under $2000.

Get the OLED Out

So from now on you'll buy LCD flat panels—right? Not exactly.

A couple of other technologies just might entice you. One is Organic Light Emitting Diodes—a wafer-thin, superbright technology that employs light-producing polymers instead of backlit liquid crystals. Sony showed off a 27-inch OLED set at a trade show last year and plans to ship an 11-inch screen in Japan this year. We don't know exact prices yet, but everyone expects the sets to be ridiculously expensive. Mark Fihn, publisher of the *Veritas et Visus* newsletter on display technology, predicts it will be five years before we'll see big-screen OLEDs on U.S. store shelves, due to high manufacturing costs.

Don't count out DLP rear projection, either. It remains the most affordable alternative above 55 inches—and it has a few tricks up its sleeve. Fihn says Samsung is shipping DLP sets that can produce a startling 3D effect by switching rapidly between left and right images.

Once studios begin producing stereoscopic content—most likely Blu-ray and HD DVD flicks—you may find yourself wearing a pair of silly glasses while watching *King Kong II* in 3D.

And that will be something to see. ●

ILLUSTRATION: MARK MATCHO

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Acer recommends Windows Vista® Ultimate.

AMD Turion 64 X2 MOBILE TECHNOLOGY

August/September 2007

Ferrari 5000
Driving innovation

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Ferrari 5000-5832
$2,699
(LX.FR50U.059)

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- 20" wide-screen TFT LCD, Acer CrystalBrite Technology
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- 176° vertical viewing angle
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- 300 cd/m² brightness
- 8ms gray-to-gray response time
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$399
(ET.L380B.063)

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- ATI Radeon™ Xpress 1150 graphics
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- 802.11n WLAN, Bluetooth®, Bluetooth® VoIP phone, gigabit LAN, V.92 modem
- Optical mouse
- One-year limited warranty[4]

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$1,999

(LX.FR60U.051)

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Acer® LCDs

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- 178° vertical viewing angle
- VGA, DVI-D (HDCP) signal connectors
- 500 cd/m² brightness
- 5ms gray-to-gray response time
- Internal power adapter
- Silver color

$649

(ET.G16WP.001)

Acer AL2416WBsd

- 24" wide-screen TFT LCD
- 1920 x 1200 native resolution
- 1000:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI-D (HDCP) signal connectors
- 400 cd/m² brightness
- 5ms gray-to-gray response time
- Internal power adapter
- Silver color

$449

(ET.F16WP.B02)

Acer AL2216Wbd

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

$239

(ET.2216B.0D0)

Acer AL1917 Cbmd

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

$229

(ET.1917B.0DC)

Acer AL1916W Abd

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

$189

(ET.1916B.WDA)

Acer AL1717 Fbd

- 17" TFT LCD
- 1280 x 1024 native resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

$199

(ET.B17RP.F04)

Acer® Projectors with DLP® Technology

Acer PD726W
Wireless Projector

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

$1,559

(EY.J2901.012)

Acer PH530
Home Theater Projector

- 1000 ANSI lumens
- 720p (1280 x 720) native resolution
- SXGA (1280 x 1024) maximum resolution
- 2500:1 contrast ratio
- 6.0 lb. (2.7kg)

$749

(EY.J4401.007)

Acer recommends Windows Vista® Home Premium.

AMD Mobile Sempron

Acer® Aspire® 3100

ATI Radeon GRAPHICS

- Mobile AMD Sempron™ Processor 3500+
- Genuine Windows Vista® Home Basic
- 1GB DDR2 533 SDRAM
- 80GB[3] hard drive
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- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display, Acer CrystalBrite Technology
- Integrated ATI Radeon™ Xpress 1100 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty[4]

Acer SignalUp
This technology strategically positions two PIFA antennas on the notebook's top panel to generate an omni-directional signal sphere for superior wireless reception.

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

Acer DASP
DiskAnti-Shock Protection is a technology that safeguards the hard disk against knocks and provides an unmatched level of protection.

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

Acer Aspire 3100-1458

$599

Mobile AMD Sempron™ Processor 3500+
Genuine Windows Vista® Home Basic
(LX.AX60Y.229)

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PICTURE BY DLP TEXAS INSTRUMENTS

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- Gigabit LAN, V.92 modem
- PS/2®-style keyboard and mouse
- One-year limited warranty[4]

Display sold separately.

Acer Aspire T180-UD381A
$459

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

Acer Aspire AST180-UA380A
$429

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

Acer Aspire AST180-US340B
$359

AMD Sempron™ Processor 3400+
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512MB DDR2 SDRAM and 160GB[3] SATA hard drive

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Acer AL2016WBbd
- 20" wide-screen TFT LCD
- 1680 x 1050 native resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

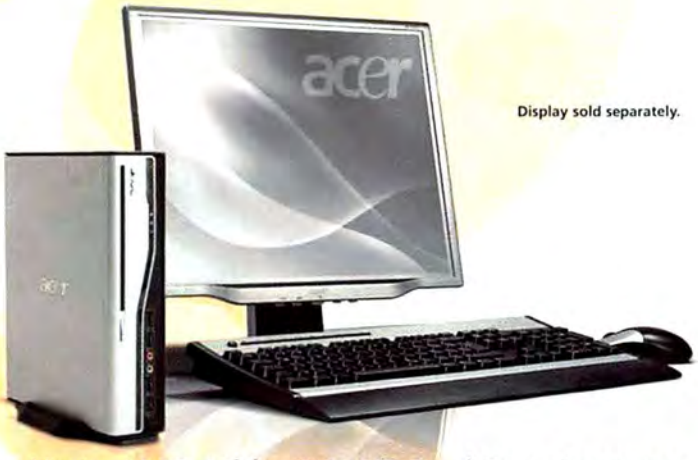
$189
(ET.D16WP.B04)

Acer AL1916 Cb
- 19" TFT LCD
- 1280 x 1024 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

$219
(ET.1916B.00C)

Acer recommends Windows Vista® Business.

Acer® AcerPower™ 1000



Display sold separately.

- Up to AMD Athlon™ 64 X2 Dual-Core Processor
- Genuine Windows® XP Professional
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- Integrated NVIDIA® GeForce® 6150 graphics
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- USB keyboard and mouse
- 2.4" W x 9.8" D x 7.9" H
- One-year limited warranty[4]

Acer AcerPower 1000-UD400P
$599

AMD Athlon™ 64 X2 Dual-Core Processor 4000+
Genuine Windows® XP Professional
1GB DDR2 SDRAM, 160GB[3] SATA hard drive and 802.11b/g WLAN

Acer AcerPower 1000-UA381P
$479

AMD Athlon™ 64 Processor 3800+
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Acer eLock Management
Acer eLock Management locks and unlocks storage media with password protection for additional security.

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Acer eSettings Management provides easy access to boot options, security or general system information.

Acer eDataSecurity Management
Conveniently integrated into the Windows® environment, Acer eDataSecurity Management provides one-click encryption and decryption of your files.

Acer AL1716 Fb
- 17" TFT LCD
- 1280 x 1024 native resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

$195
(ET.B16RP.F02)

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Acer recommends Windows Vista® Home Premium.

Acer® Aspire® 5050

- AMD Turion™ 64 Mobile Technology MK-38
- Genuine Windows Vista® Home Premium
- 1GB DDR2 533 SDRAM
- 120GB[3] hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 14.1" WXGA (1280 x 800) TFT display, Acer CrystalBrite Technology
- Integrated ATI Radeon™ Xpress 1100 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty[4]

Acer Aspire 5050-4570

$749

AMD Turion™ 64 Mobile Technology MK-38
Genuine Windows Vista® Home Premium
(LX.AXD0X.024)

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Protect Your Investment with an Acer Notebook Service Upgrade

Quality is built into every notebook Acer makes, and each comes with a one-year standard limited warranty.[4] It includes 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:

2-Year Extension of Limited Warranty (146.AB820.EX2)

$99

Prepays freight 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[4] and lim ted 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] Depends on availability of PC-supported connections and location.
[2] Enhanced Virus Protection (EVP) is enabled by Microsoft® Windows® XP Service Pack 2. By default, EVP will protect the user's Windows operating system only. Users must enable the protection of their applications and associated files to be protected from memory buffer overrun attacks. AMD and Microsoft strongly recommend that users use third-party anti-virus software as part of their security strategy.
[3] 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.
[4] 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.

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Dell Customers Complain About Credit, Service Woes

BY TOM SPRING

New York's attorney general alleges that the PC giant repeatedly reneged on promises of zero-percent financing and on-site service.

LAURIE EARHART SAYS Dell charged 12 percent interest after promising an interest-free loan.

PHOTOGRAPH: KATHERINE LAMBERT

LAURIE EARHART OF Waynesboro, Pennsylvania, takes good care of her credit rating. So she wasn't surprised last year when Dell offered her 0 percent financing on the $1063 Dell 1500 Inspiron laptop she was planning to buy. She accepted the offer and says that the laptop was everything she could have hoped for.

But when her third monthly statement arrived in January, Earhart was shocked to see $162 in finance charges on the invoice. The company had applied a 12 percent interest rate to the balance of her notebook bill. When she called to rectify what she assumed was simply an error, the Dell representative she spoke to said the company had determined that her credit rating was insufficient to merit a 0 percent loan.

An angry Earhart paid off the entire balance on the laptop, but she also complained to the Better Business Bureau in Texas, where Dell's headquarters are located. The Texas BBB helped her obtain a refund for the entire amount of the financing charges. But Earhart wasn't the only Dell customer to see a promised 0 percent interest rate jump overnight.

Last spring, New York Attorney General Andrew Cuomo filed a lawsuit accusing Dell and its financing arm, Dell Financial Services, of fraud and false advertising. The suit alleges that, in addition to raising interest rates, the companies repeatedly failed to provide timely on-site repair to consumers who purchased contracts for on-site service, failed to make good on rebate offers, incorrectly billed consumers for cancelled or returned orders, and used defective refurbished parts or computers for warranty repairs or replacements.

Dell Denies Charges

Dell and DFS have denied all of the charges in the lawsuit. "We are confident that our practices will be found to be fair and appropriate. While even one dissatisfied customer is too many, the allegations in the [attorney general's] filing are based upon a small fraction of Dell's consumer transactions in New York," the company said in a statement.

Dell and DFS officials refused interview requests, but they pointed out that the number of New York consumer complaints submitted to the Texas BBB was down by 28 percent in 2006 from the year before, while the number of complaints that the Texas BBB received from all states declined by 12 percent over the same period. The Texas BBB confirmed those statistics, but the decline may in part reflect a drop in Dell's PC sales: Research firm IDC reported that those sales dropped by 12 percent between 2005 and 2006.

Currently, Dell is a member in good standing with the Texas BBB, having responded to every complaint that the organization has filed with it on behalf of consumers. »

PCWORLD.COM

Have you had problems—or good experiences—with Dell or Dell Financial Services? See what other readers have to say, and join a discussion in PC World's reader forums at find.pcworld.com/57897.

DFS is not a BBB member, but it too has answered all complaints submitted to the relevant regional BBB, according to Karrie Hurt, president and CEO of the Central and South Central Texas BBB.

On-Site No-Shows

Part of the New York lawsuit addressed difficulties people encountered when trying to get Dell to honor on-site service commitments. For example, Charlie Smith of Fairport, New York, paid $171 extra for a warranty that included on-site service for his Dell desktop. "I was told that this warranty would cover everything and anything that might go wrong with the PC," Smith says.

Within weeks, his system was intermittently failing to recognize USB ports and the CD and DVD drives. Smith says that he clocked 12 hours on the phone trying to resolve the problems with long-distance tech support before insisting that a Dell technician visit his home and fix his system. Dell told him the problem was software-related and said he'd have to pay an additional $100 for on-site service that covered software issues.

Instead, Smith wrote an angry letter to Dell and sent a copy to Cuomo's office, which says that it contacted Dell on Smith's behalf. Subsequently, Dell did send a technician to Smith's home (for free); according to Smith, the technician diagnosed his problem as hardware-related, and Dell ultimately replaced the entire system—again, at no charge.

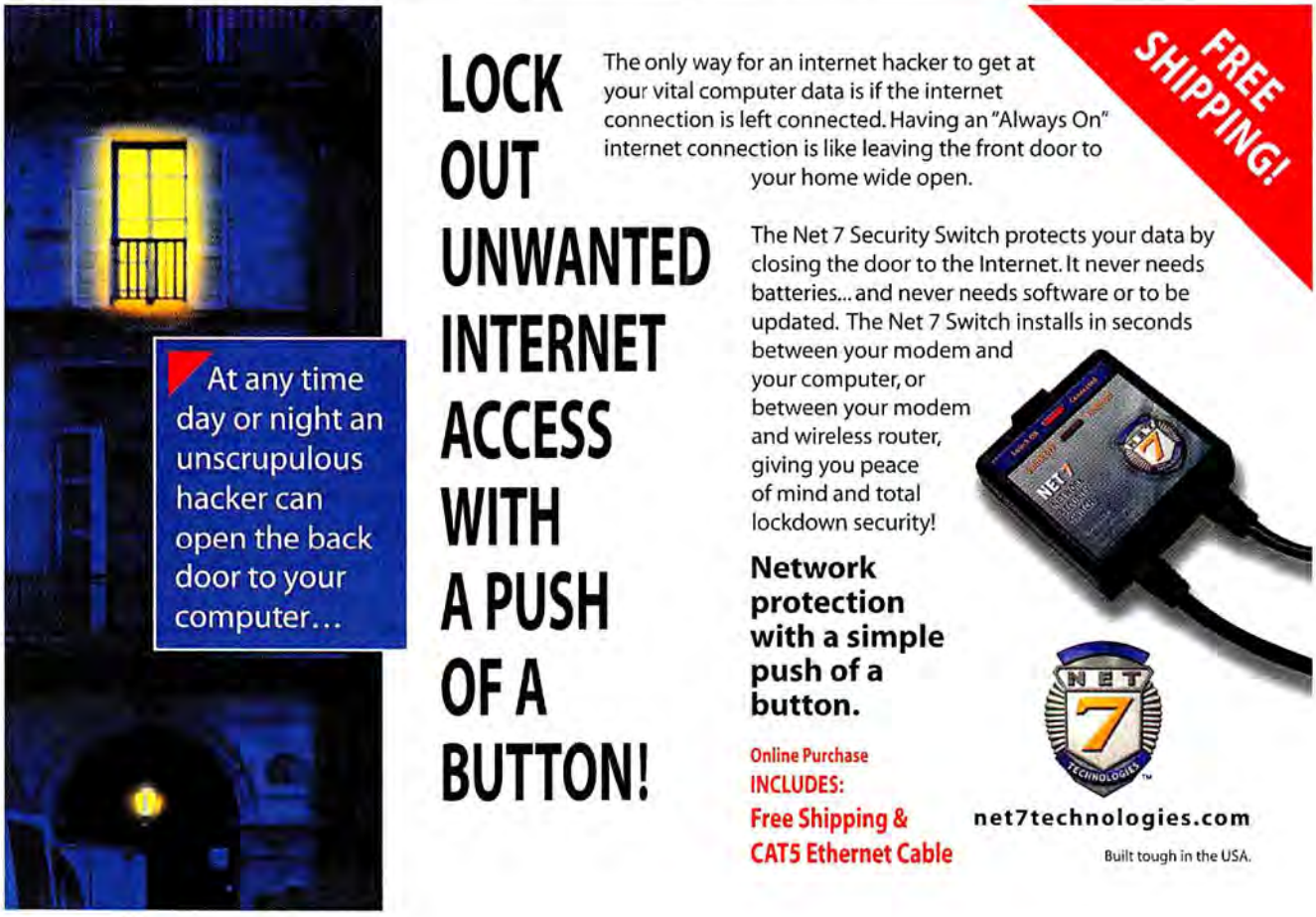
Why Dell?

Some analysts and consumer advocates express surprise that Cuomo chose to sue Dell, since the company has been trying to improve its customer service. The Texas BBB's Hurt notes that DFS has reduced the average number of days that it takes to resolve BBB complaints from 28 days in 2005 to 19 days in 2006.

Dell, meanwhile, took an average of 25 days to resolve a complaint in 2006, versus an average of 23 days in 2005. The average BBB complaint resolution time for all companies is 25 days, Hurt says.

Rashmi Vasisht, deputy press secretary for the New York attorney general's office, says that the state's lawsuit addresses systemic problems that New York consumers have had with Dell and DFS—not how quickly the companies respond to complaints. Vasisht says that the New York AG's office has received hundreds of additional complaints about Dell since the lawsuit was filed.

New Yorkers who wish to file complaints against Dell or DFS should contact the attorney general's consumer help line at 800/771-7755 or visit www.NYAGDell.com. Residents of other states should lodge complaints with either the Texas BBB or their local BBB.



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ALTIGEN COMMUNICATIONS

SKEPTICAL SHOPPER YARDENA ARAR

Are Tech Salespeople a Dying Breed?

Good sales help is getting increasingly difficult to find—and the latest high-tech substitutes have me worried.

THERE'S NOTHING MORE annoying than a hovering salesperson when you don't need one—and nothing you miss more than a knowledgeable one when you want advice. Recent developments, however, suggest that the informed, helpful sales rep may have become an endangered species.

The most alarming example of this trend: Earlier this year, Circuit City decided to fire 3400 of its most experienced (and highest-paid) salespeople and replace them with lower-paid, less experienced employees. So what happened? Store sales for the subsequent quarter went down by some 5.6 percent from the same period a year earlier.

Now I can't prove that Circuit City's personnel policies caused the drop in revenue—the company blames the decline on unrelated market factors such as plummeting flat-panel television prices and poor customer uptake on pricey extended warranties—but I am less likely to go there the next time I want help picking a tech product.

A Good Experience

Instead, I'll return to Fry's Electronics, a huge regional superstore that is notable for the quirky decors of its retail outlets (the one in Silicon Valley has a Wild West look, while branches I've visited in Southern California are based on Alice in Wonderland and a sort of jungle theme).

I received great sales help during a visit to the Palo Alto, California, store recently. I arrived with a general idea of what I wanted—a networkable hard-drive case that I could use with a couple of old hard drives—but a knowledgeable sales clerk not only did an admirable job of spelling out my options for me but also showed me where to find all of them (for some reason the Netgear product that I ultimately bought wasn't displayed with the rest of the hard-drive enclosures). That guy earned his commission.

Gadgets Instead of Humans

Ironically, some retail outlets seem to be looking to technology to replace their tech sales reps. I read with some amusement about T-Mobile's plans to use Microsoft's new Surface technology to help sell phones in its stores. Surface is basically a PC with a touch-sensitive display. No mouse, no keyboard—think *Minority Report* (or iPhone's Safari browser, for that matter) meets a coffee table. The idea, from T-Mobile's perspective, is that you'll place a handset on the Surface table, which will recognize it from a barcode-like ID tag and provide information about product features, service plans, and the like. But I can look at computer images and find sales information at home. If I take the time to visit a store, I want to try out actual products and maybe get answers to a few specific questions (see "Buy and Cell" on page 125 for more on purchasing cell phones).

Automation appears to be creeping into all sorts of shopping experiences. Motorola sells supermarkets a Windows CE gadget to hand out to shoppers who are willing to scan in the bar codes of items they buy (so the stores save on checkout clerks) and receive electronic coupons that target their shopping history. That's the new face of service these days. But somehow, I don't think the results will measure up to that nice guy at Fry's.

ILLUSTRATION: HARRY CAMPBELL

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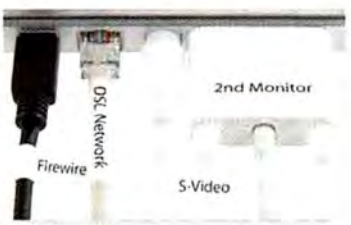

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ON YOUR SIDE AMBER BOUMAN

Vista Upgrade Payment Snafu

LAST SPRING I bought a Windows XP Professional PC with a free upgrade to Windows Vista Business. I filed the required paperwork for the upgrade, supplied credit card information to pay for shipping and handling, and received a confirmation e-mail from ModusLink (the company that handled the Vista upgrade program) stating that the software would be shipped in four to six weeks.

Nearly two months later, I checked the ModusLink site and found that the order had been canceled—because, I suspect, the temporary credit card that I had used to pay shipping and handling expired (I had set it to last only the four to six weeks I was told it would take to get the upgrade). I would have reapplied, but by then the upgrade program had ended, and calls to ModusLink were fruitless. *Mitchel Miller, Cookeville, Tennessee*

OYS Responds: ModusLink told us that Miller was correct: The Vista upgrade was delayed for so long that his temporary credit card number had expired by the time the company was ready to charge for the shipment. ModusLink says that in this situation it tries to reach customers by e-mail, and Miller did hear from the company but was unable to get through on the phone to provide a new card number. After we spoke with ModusLink, Miller was able to contact the company; he received his upgrade at the end of June.

ModusLink says that it processed Vista upgrade orders for several major PC vendors, including Dell and HP. That program ended on May 31; the company says that people whose orders were canceled (typically because they did not have valid cards) should contact their PC manufacturers if they have not already done so.

We recommend against using limited-duration credit cards to pay for services or products that might involve a waiting period. Companies shouldn't charge for services or goods until they are ready to deliver them—but that consumer protection can backfire if the card you use expires before the vendor submits a charge.

Missing in Action

Page Computer: Reader Ken Lake of Cary, North Carolina, wrote us when an LCD monitor and video card that he had purchased online from Los Angeles–based Page Computer never arrived. He couldn't reach anyone at the company, and neither could we. Our first e-mail to the company got an automated response, but despite multiple follow-up e-mail requests and phone calls, we never heard from Page again. When we checked in early July, Page Computer had received an F rating (the lowest possible) from the Better Business Bureau and had failed to answer 121 of 367 complaints lodged against it in the previous three years.

EZInkjets.com: Similarly, Joe Vecchio of Clearwater, Florida, says that he failed to receive inkjet cartridges he had ordered online from EZInkjets.com. Our e-mail inquiries sent to EZInkjet either bounced or went unanswered; phone calls to the Los Angeles–area firm were transferred to overflowing voice mailboxes.

As of early July, EZInkjets.com had an F rating from the BBB, which says the firm failed to answer 994 of 1056 complaints filed against it in the past three years.

Minimum Price Ban Overturned

LOW-END PRICES FOR tech and consumer electronics products may soon start to look the same—and not all that low—following a recent Supreme Court ruling that allows manufacturers to set minimum prices retailers may charge for their products. The ruling reversed a 96-year-old decision holding that the practice was illegal on antitrust grounds.

Though a leather-goods manufacturer filed the lawsuit in question (*Leegin v. PSKS*; find.pcworld.com/57891), consumer groups expect the decision to have a major impact on the tech industry, where upstart Internet retailers have historically competed fiercely on price.

"It places a special burden on the tech sector," says Mark Cooper of the Consumer Federation of America.

For its part, however, the Consumer Electronics Association (which primarily represents major electronics manufacturers) asserts that the ruling will promote competition in areas other than price—for example, customer service.

The 5-4 majority opinion didn't rule out challenges to minimum prices on antitrust grounds. But it said that price fixing can "have either procompetitive or anticompetitive effects," and thus shouldn't be subject to the blanket ban imposed by the 1911 ruling, *Dr. Miles Medical Co. v. John D. Park & Sons Co.*

The *Leegin* decision will make it tough for newcomers to compete on price, according to Cooper, who adds: "You've got to start with an army of lawyers to sue your way into existence."

—Yardena Arar

ILLUSTRATIONS: HARRY CAMPBELL (TOP); ROBERT NEUBECKER (BOTTOM)

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10 Great Freebies for Your Company

BY RICHARD MOROCHOVE

Sure, you can buy pricey software and services. But do you need to? With free tools like these, the answer may be no.

GOOD NEWS FOR penny-pinching managers: The golden age of free applications and online services is now. These impressive no-cost offerings handle everything from customer relationship management to e-commerce Web sites and more. (Some of the tools are available in paid versions that sport additional features and higher capacities.)

1. Highrise: Using this Web-based customer relationship management (CRM) program, you can keep track of all your contacts, with the aim of converting more of them into sales prospects. First you enter or import customer contact information; afterward you can create new tasks, set deadlines, and assign tasks to categories. Establishing a case lets you bring together related contacts and tasks. When you log in to the service, the Highrise dashboard displays recent activity and upcoming tasks. The virtue of this Web service lies in its simplicity: It's straightforward and provides few extras, but it offers a handy way to keep on top of your customers. www.highrisehq.com

2. FreeCRM.com: Since this online CRM service is more sophisticated than Highrise, it requires more time to set up and learn. But it allows easy tracking of potential deals in your sales pipeline, and a large variety of user preferences let you tailor it to your business environment. For example, you can select a different currency or decide whether to display completed tasks and deals in your calendar. There's no limit on the number of users, but the ad-supported free version is capped at 10MB of data storage. www.freecrm.com

3. Microsoft Office Live Basics: You can easily establish a Web presence for your small business through Office Live Basics, which provides a domain name plus the capacity for managing a good-size site and a couple dozen e-mail accounts. Design choices are limited, but the templates let you quickly develop a simple site even if you know nothing about HTML. Convenient interactive Web components, such as a forms submitter and a site search engine, are also included. office.microsoft.com

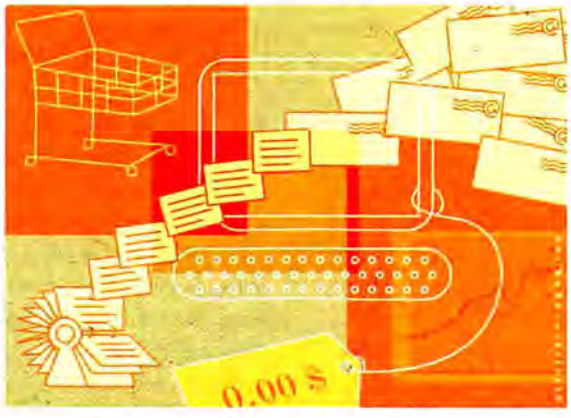


ILLUSTRATION OTTO STEININGER

4. HitTail Basic: Intended for Web sites with up to 100,000 visitors per month, HitTail collects information about the search phrases your visitors use so that you can tweak your pages to improve their exposure in search engine results. After signing up for an account, you add a bit of HitTail-provided JavaScript code to each of your Web pages. You'll see HitTail's findings when you log in to your account. The service also suggests underperforming search terms so you can create new Web content to emphasize those words. www.hittail.com

5. AgoraCart: If you sell items on your site, you'll find that AgoraCart is a flexible and highly capable shopping cart. Reasonably quickly, you can set up a simple template-based store suitable for a business just starting in e-commerce. AgoraCart also supports the integration of fairly sophisticated Web designs for an established e-business, though such integration requires more time and technical skills to implement. www.agoracart.com

6. Mailman: This mail application can help you deliver messages to all of your valuable customers. The program has a polished look and an accessible menu interface. It can automatically process bounced messages, and you can configure it to retain temporarily unavailable addresses while removing truly dead ones, helping to slim down your mailing list. www.gnu.org/software/mailman/

7. PoMMo: An open-source mailing list manager with an attractive and easy-to-understand interface, PoMMo uses »

PCWORLD.COM

Our online Business Center offers technology reviews, news, how-to advice, and other practical information for small and medium-size companies. Check it out at find.pcworld.com/57875.

templates to control the look and feel of subscription forms, so you can match them to the look of your Web site. The program's handy personalization capabilities let you easily customize outgoing messages (by adding a customer name, for example). You can also set up PoMMo to send a different message to specialized groups that you create—useful if you have product lines that appeal to widely varying customer interests. www.pommo.org

8. CIT Small Business Lending Corporation: On the CIT site you can find useful information designed to help you create a workable business model. The site's free, two-part, online multimedia tutorial explains how you should develop your business plan and includes a list of items your plan should discuss. You also get a useful glossary of terms to help you decipher financial jargon. www.smallbizlending.com

9. PlanWare: At this site you'll discover software that can help you forecast your business's financial future. PlanWare offers free Excel templates for financial projections and for cash flow planning. www.planware.org

10. SBA Free Online Courses: The Small Business Administration has links to more than 40 free, business-related online courses. Subjects cover many areas of managing a company, including finance and accounting, marketing and advertising, e-commerce, and international trade. The typical course is self-paced and requires about half an hour to complete. www.sba.gov

TECH AT WORK RICHARD MOROCHOVE

Keep Tabs on Your Company's PCs, Peripherals, and Apps

AS YOUR GROWING small business purchases more PCs, managing computer assets becomes a challenge. If your company owns just two or three PCs, one person probably knows about them and the software they run. But with more than five, keeping track is more difficult.

Does the Gateway PC in payroll need a memory upgrade to support Windows Vista? If you own 12 PCs and 10 Microsoft Word licenses, do you need to purchase more licenses or do you have enough because some of the PCs don't run the application?

You could track your computer assets manually by taking notes about each PC, but a computer asset management tool can automate the chore by querying the systems on your network. With this kind of utility, you can easily update your asset list and run reports such as a tally of software installations organized by application.

If You Can't Standardize, Organize

Standardization—using the same systems and applications—makes supporting and managing computers easier. But most small businesses tend to purchase PCs as the need arises, making buying decisions based on deals or sales available at the time. Typically they end up with a mix of brands and varying configurations.

This practice makes asset management particularly useful for small businesses, but the big names in the sector—such as IBM's Tivoli and Computer Associates' Unicenter Asset Management—are aimed at, and priced for, large enterprises. Softinventive Lab's Total Network Inventory doesn't have all the frills of Tivoli or Unicenter, but its price—as low as $89—is right for a small business.

You install the downloadable software (get it at find.pcworld.com/57847) on only one networked PC; but for TNI to survey all of the PCs in your network, you may need to adjust software firewalls to permit access. And unless you already have a common Windows administration account, you must give TNI a valid user account and password for each networked PC you wish to scan.

> Total Network Inventory helps you manage your computer hardware and software assets.

After the one-time setup, the scanning wizard takes but a minute or two to survey each PC. When it's done, you can view details about your hardware, including peripheral devices; installed software, including Windows updates; user accounts; and other items such as shared resources, including printers and files.

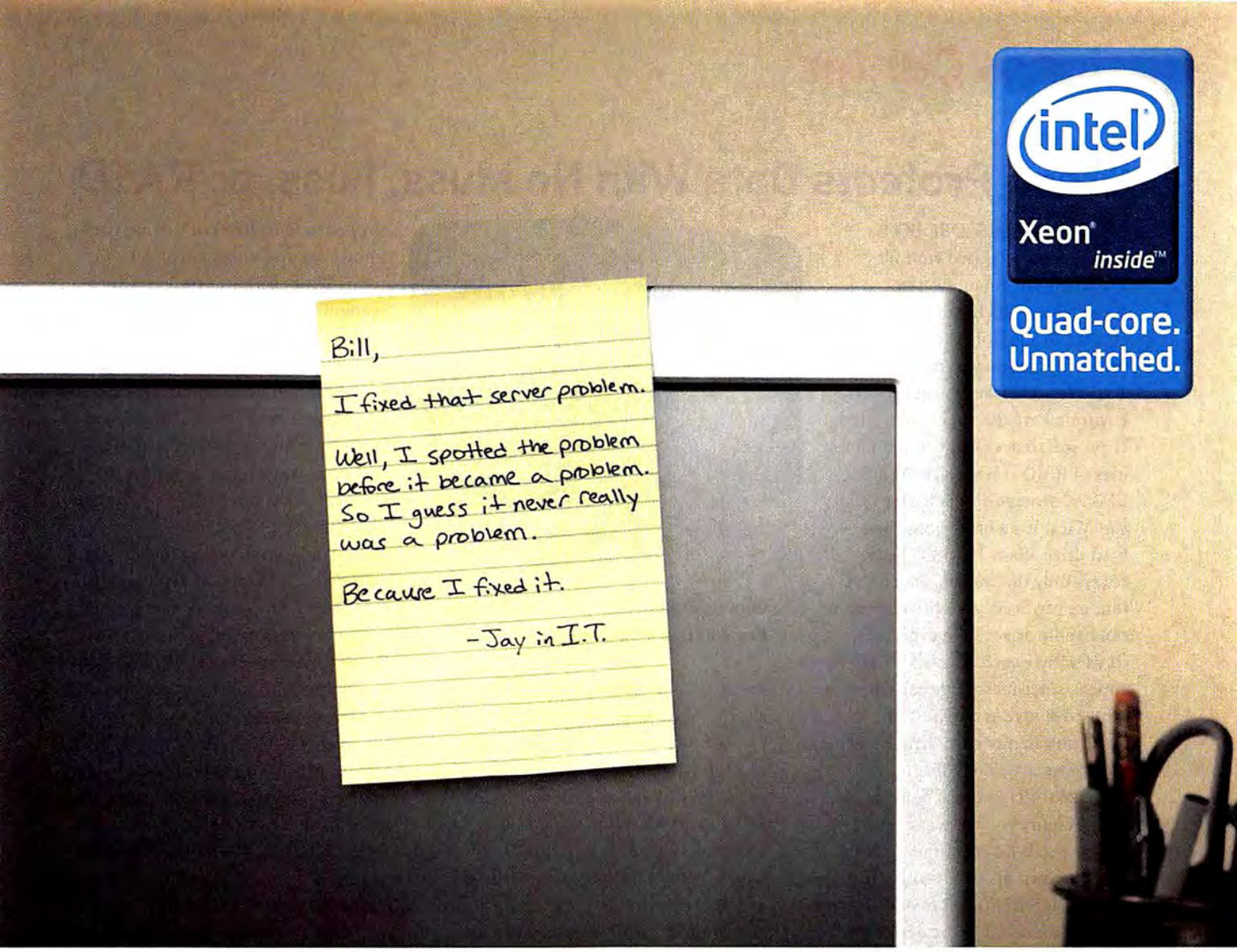
You may opt to manually insert additional information—such as purchase date, price, and physical location—for each PC scanned. You can also have TNI make reports on any or all assets scanned.

For Windows Only

TNI does have a few limitations. It works only on Windows PCs, so it isn't suitable for managing mixed-OS systems. You may have to install WMI (Windows Management Instrumentation) software, a free download from Microsoft, on computers running Windows 95, 98, or NT. In my trials TNI didn't drill down as deeply as I would have liked on a few hardware details; it identified SATA hard drives in a RAID array as being based on the SCSI interface, as well. And report customization options are somewhat limited.

A free evaluation copy of TNI lets you manage 25 or fewer networked devices for up to 30 days; after that you'll need to buy a license, which costs $89—reasonable for that many devices. Licenses for larger networks are available, too, including an unlimited worldwide license for $1699. TNI may not be perfect, but as an affordable tool for keeping tabs on your computer assets, it definitely beats a pen and a pad of paper.

ILLUSTRATION: HARRY CAMPBELL



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Drobo Protects Data With No Muss, Fuss, or RAID

DATA ROBOTICS' DROBO is designed to safeguard your files automatically. An innovative approach to data handling distinguishes Drobo from the sea of multidrive external enclosures currently available and makes it a great fit for environments that lack a dedicated IT person to decipher the complexities of RAID storage. Drobo is a USB 2.0 storage appliance for PCs and Macs. It's a bring-your-own-hard-drive affair: The $499 price covers only the chassis, which has four empty Serial ATA drive bays that can handle drives with capacities of up to 1 terabyte each. This adds to Drobo's appeal, since its storage capacity can grow to suit your needs. (For a look at how you can mix hard-drive capacities, see find.pcworld.com/57814.)

DROBO SAFEGUARDS YOUR data with more flexibility than a typical RAID 5 setup does.

Unlike RAID 5–based systems, which often require you to tweak settings, Drobo needs no adjustments: It employs its own disk and storage virtualization algorithms to provide automatic data redundancy. The device gives users many of the benefits of RAID 5 without the complexity of such a multidrive setup. With its own operating system, CPU, and memory to power data-handling smarts, the appliance allows you to swap a drive out, even as you continue working on files stored on the system. Drobo knows where each block of data is stored on a disk, and its algorithms are more flexible than those of widely used RAID standards. Together, these factors help the user more easily manage the data device as one large "pool" of data, and they allow Drobo to monitor itself for data corruption and other disk failures.

I found the product exceptionally friendly and simple to use. To start, I slipped in four drives of varying sizes. I powered up Drobo and attached it to my Windows Vista system, which recognized it as a USB mass-storage device. Installing the Drobo Dashboard software went smoothly. This no-frills program identifies which drives are in which bays, provides a capacity chart, offers some utilities, and gives you a way to monitor the device beyond the status lights to the right of each drive. The lights use a color-coded approach to inform you of the health of each individual drive inside Drobo. The unit ran cool to the touch, and it was quiet, too.

Data-transfer speeds were middle of the road, but Drobo isn't about speed. You should choose this device if you want an easy way to put extra storage on your desk—or on that of one of your employees—without the IT resources needed to support a RAID 5 system.

—Melissa J. Perenson

84
VERY GOOD

Drobo | Data Robotics
The slick design and easy setup of Drobo make this USB appliance a strong choice for expanding your system's storage. List: $499
find.pcworld.com/57896

Big-Business Security for Small Companies

IF YOU RUN a small business, you've probably often wished you had the resources that the big guys do when it comes to implementing new technology—especially if that technology can help secure your data. Recently, Postini announced that it will begin offering services to companies with 5 to 250 employees. Its service filters e-mail to weed out viruses, worms, and other threats; it either eliminates suspicious messages or moves them into quarantine, and alerts the user. (At press time, Google announced that it would acquire Postini.)

Postini is teaming up with Iomega, best known as the company that brought you the Zip drive. In addition to maintaining its traditional focus on storage, Iomega is branching out into security and data-recovery services, making the company a logical choice to help Postini reach a broader market. While the message-filtering technology remains the same, Postini is taking advantage of Iomega's infrastructure and sales channel, which is attuned to serving smaller businesses—a group that Postini has not previously targeted.

The result of the partnership is Iomega's new service, called "Iomega OfficeScreen Managed Email Security and Spam Defense—Powered by Postini." Though quite the mouthful, the service is easy to implement and manage. Either Iomega or a VAR sets it up on an off-site hosted system that Postini manages. Because Postini handles all of its customers via its central systems, smaller businesses receive the same updates that large enterprises do—no manual updating is necessary. Pricing averages about $35 per user per year. For more information, go to www.iomega.com.

—Cheryl England

PHOTOGRAPH: MARC SIMON

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Don't believe us? This photo is 100% real, and if you think the Antec P182SE is beautiful on the outside, wait 'til you see what it's like on the inside. This special edition enclosure boasts amazing high performance features like a dual chambered power supply and up to 5 configurable cooling fans, not to mention its sleek mirrored stainless steel finish and its stylish black interior. If you want a PC case that's completely irresistible, inside and out, look no further than the P182SE. For more information, visit **www.antec.com**.

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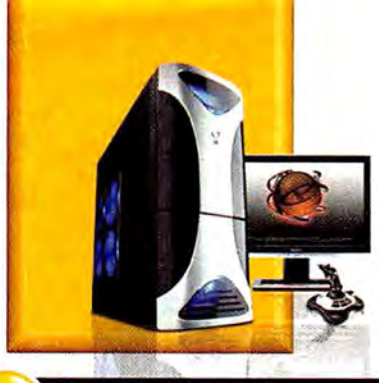

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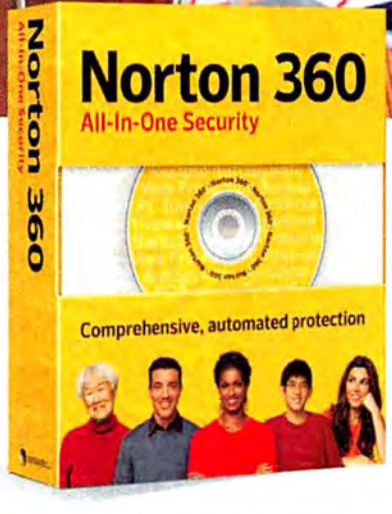

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Security Alert

E-Mail Scams Target Deep-Pocketed Victims

BY ERIK LARKIN

A WAVE OF sophisticated attacks disguised as bills from supposed business partners, complaints from the Better Business Bureau, and investigations from the Internal Revenue Service is snaring wealthy business victims with malware-carrying e-mail messages. Worse, these messages don't bear the usual telltale signs of phoniness, so even savvy users are getting tricked.

"When you get one of these things, they're so well crafted, they look real," says Dave Jevans, who chairs the Anti-Phishing Working Group.

The attacks target executives and other high-level employees at a variety of firms. Victims who open attachments or follow download links pick up a malware infection and may surrender control of their PCs, hand over the keys to their corporate banking network, disclose financial account log-ins, and reveal a wide range of other valuable data. "It's a lot more lucrative than stealing a credit card number and making small purchases," says Jevans.

To improve their odds of success, the attacks start with real names and company references. For example, a faked invoice sent to *PC World* came with the following subject line: "Proforma Invoice for PC World Communications Inc. (Attn: Harry McCracken)." Both the company name and that of our editor in chief were correct.

Phishers Do Their Homework

Experts suggest many ways thieves could collect the company and employee names needed to make such scams work. Criminals could "scrape" the information from the Web sites of targeted companies, since these often list the names and titles of executive staff. Alternatively, they may worm their way into popular online contact databases or even purchase lists of such data from legitimate marketing firms.

Regardless of the source, seeing an e-mail with your name on it helps convince you that it's real. To allay a recipient's suspicions further, the messages are grammatically correct and professionally presented. The faked IRS and BBB e-mail notes even include the name of the person who made the supposed complaint, along with the date it was filed.

Sophisticated phishing attacks aimed at business executives have hooked thousands of users.

And finally, many of the attacks disguise malware as embedded objects inside attached but innocuously named Word documents, such as "Documents_for_Case.doc," which are otherwise clean. For the scam to succeed, you have to click the doctored icon inside the file, but embedding it like this lets the malware slip past many antivirus programs. Still, the presence of such an icon gives users a big clue that something is amiss. Other attacks include links within the e-mail message to downloadable malware purporting to be case files. If you click such a link, you'll notice one of the few other attack clues: The download file begins with a valid-looking name, but ends with the telltale .exe (for example, "Complaint.doc.exe"). To install successfully on your PC, a download needs that .exe extension.

Though this type of attack takes more time and polish, the stolen data is potentially more valuable than that taken in by more large-scale endeavors, says Joe Stewart, a senior threat researcher with SecureWorks, who studied the attacks. "Targeting execs is a way better payoff for the work involved."

And it's working, he says. Within a day of being sent, the Proforma scam had led to about 200 infections, Stewart says. Thousands more have fallen prey to the BBB and IRS e-mail, he adds, and he expects we'll see many more such attacks.

ILLUSTRATION: BRIAN STAUFFER

PCWORLD.COM

Learn to spot the telltale signs of scam e-mail and fake alerts at find.pcworld.com/57887, and check our Spyware & Security center at find.pcworld.com/57888 for the latest on threats and fixes.

ZoneAlarm's New Firewall Beats Vista's

CHECK POINT HAS released a new version of its popular free ZoneAlarm firewall (find.pcworld.com/57841), which is now Windows Vista–compatible. The main advantage of this firewall over Vista's built-in version is the easy control you gain over what programs can access the Internet.

Microsoft's Vista firewall allows similar outbound filtering, but the feature is disabled by default. Not only that, but it's hidden—you can't reach it even through the normal Windows Firewall interface.

ZoneAlarm's firewall, by contrast, tells you when a new program attempts to gain access to the Internet, and it blocks access until you say otherwise. Installation of the 18MB app on my laptop went smoothly for the most part.

But as in the older version, the many alert pop-ups you receive may not help. Outbound-connection alerts can block malware that evades your antivirus software and tries to send data stolen from you to a Web repository (for example), but you need to know whether an alert is for a valid program or for malware. Alerts about oddly named programs running from a temp directory should set off warning bells, but telling the benign from the evil can be hard otherwise. And if you block the wrong thing, some programs may not work correctly.

Check Point's Antivirus and Internet Security Suite apps now work on Vista, too; the suite did well in our recent review (see find.pcworld.com/57842).

Vista's Firewall Option

If you want to use Vista's outbound filtering, skip the default interface—it's better suited to systems administrators than to regular users. Instead try the free Vista Firewall Control utility (find.pcworld.com/57843); it uses ZoneAlarm-like pop-ups to configure the firewall.

—Erik Larkin

BUGS & FIXES

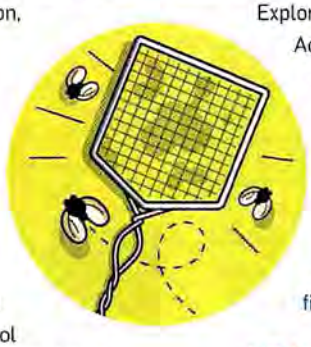
STUART J. JOHNSTON

Web Attack Kit Makes IE Patches Crucial

Plus: Close holes in Windows XP and 2000, and in Windows Server 2003.

HERE'S A PERFECT example of why you need the critical Internet Explorer fixes for this (and every) month: Thousands of legitimate sites were recently hijacked by online thugs who used MPack, the "latest and greatest tool" for sale by the Russian underworld, according to Ken Dunham, an engineer with VeriSign's iDefense.

The kit, which costs approximately $500 to $1000, loads a hijacked site with a range of attacks. You can expect MPack and other Web attacks to strike certain IE flaws—fixed by Microsoft in a cumulative patch this month—soon, if they haven't already.



The security problems affect IE 6 or 7 on Windows XP SP2, IE 7 on Vista, and IE 5.01 or 6 SP1 on Windows 2000 SP4; and they leave you vulnerable to at least one critical bug that can give an attacker control of your PC if you view a poisoned Web page. Make sure you've patched via Automatic Updates or find.pcworld.com/57765.

Even if you don't use IE, a hacker can exploit two other flaws with a rigged site to achieve much the same result. XP SP2 has a problem handling encrypted Web connections using Secure Sockets Layer and Transport Level Security. Windows 2000 and Server 2003 are also affected, but the bug can annoy those OSs only by breaking encrypted connections or forcing your PC to restart. Patch via Automatic Updates or find.pcworld.com/57766.

Finally, Windows 2000, XP SP2, and Server 2003 are vulnerable to attacks against a Win32 API component of the OS. Head to find.pcworld.com/57767 for the fix or get it from Automatic Updates.

Vista E-Mail Problem

Your clicking a link in a doctored e-mail message in Windows Mail can allow an attacker to run any command on your PC if you haven't fixed this critical bug. Hackers have already posted sample attack code on the Web, so get the patch from Automatic Updates or find.pcworld.com/57768. The bug affects Outlook Express 6 on XP, too, but for that program it's rated as only important (not critical).

Yahoo Messenger Hacks IE

Versions downloaded prior to June 8, 2007, create a gaping hole in Internet Explorer by adding a flawed ActiveX control to IE. A hacked Web page can target the ActiveX control and take over your PC. Download the latest YM version from find.pcworld.com/57769; read more about the issue at find.pcworld.com/57770.

HP Laptop Help Flaw

HP isn't saying much about it, but a problem with the Help and Support Center on all of its Windows XP notebooks can let an attacker read or write files on your HP laptop if you view a malicious site. For the fix, you'll need to download a 6.2MB update from find.pcworld.com/57774.

QuickTime Java Vulnerability

Versions 7.1.5 and older of Apple's program allow for a drive-by download if you visit a tainted Web site with a booby-trapped Java applet. You can disable or uninstall Java (upgrading Java itself won't help) to avoid the risk, or get QuickTime 7.1.6 from find.pcworld.com/57771.

BUGGED?

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ILLUSTRATION: HARRY CAMPBELL

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Safari for Windows: 'Worry-Free'? Not Exactly

ON THE HEELS of the release of a Windows beta of the Safari Web browser, reports of security holes in the program started dropping like, well, apples from a tree. Despite Apple's optimistic initial claims, Windows users can't "enjoy worry-free Web browsing" simply by using Safari, something the company tacitly acknowledged with its quick release of an updated beta (www.apple.com/safari/) that fixed some of the problems.

The identified bugs can lead to various troubles familiar to Windows users: crashing, denial of service, and remote code execution, the last of which can transfer control over your PC to a criminal (see find.pcworld.com/57833 for more).

SAFARI FOR WINDOWS retains a Mac look and feel, but it's not immune to Web attacks.

The degree of risk that Safari users face compared with users of other Windows browsers will depend not only on the program's design, but on how many people use it. These days, however, working with a less-popular browser doesn't guarantee you'll fly under the radar: Do-it-yourself attack kits (read more at find.pcworld.com/57834) enable even relatively unskilled criminals to load up a malicious page with multiple attacks that can hit a range of browsers.

So if you decide to run Apple's browser on your Windows machine, it's essential that you continue to apply patches quickly, and that you cast a critical eye on suspicious sites, downloads, and links—particularly since some popular security tools, such as McAfee's SiteAdvisor (find.pcworld.com/57835), do not work with the Safari browser.

—Erik Larkin

PRIVACY WATCH ERIK LARKIN

Set a Hacker Alarm on Your Web Mail Box

Use a clever trick and free tools to find out if someone has been snooping into your e-mail to steal sensitive information.

YOUR WEB MAIL account is a treasure trove of private and potentially valuable information—and thieves know it. In an online interview, one phisher claimed to make thousands of dollars every day by breaking into people's e-mail accounts and searching for messages that contain financial details (read more about this interview at find.pcworld.com/57837).

Normally you can't tell whether you've been hacked in this way. Even if you cannily leave a juicy-sounding e-mail unread, a thief or snoop may read it and then return its status to unread. But with a little bit of know-how, you can create an electronic trip wire that will trigger whenever someone reads a rigged e-mail.

I came across the idea, which takes advantage of a free Web hit counter, in a blog post by Jeremiah Grossman of WhiteHat Security (find.pcworld.com/57838). After I talked with him, we came up with a setup that's easier than the one he originally suggested.

The gist of it is to keep an e-mail message in your account that includes the code for the counter. Opening the attachment trips the counter, thereby alerting you that someone was snooping.

Here's how to set it up:

1. Head over to OneStatFree.com and register for a free Web counter account. You can list anything for the site URL, and use a disposable e-mail address to complete the registration process (see find.pcworld.com/57839 for tips on using such e-mail accounts).

2. Look for an e-mail from OneStat sent to the address you used when you registered. It will come with an attached file named OneStatScript.txt. Save that file, and note your account number. Then delete the e-mail, which has your account details.

3. Give the .txt file a name that will catch a spy's eye, like "BankPasswords," and make it an .htm file so it opens automatically in a Web browser (and trips the counter).

4. Send the file as an e-mail attachment to the Web mail account that you want to monitor. Use a similarly baited subject line, like "Account log-ins," for the message. Just be sure not to open the file when you send it—you don't want to set off your own alarm.

5. Sit back and wait like the patient spy-catcher you are. If anyone opens your rigged attachment, the hit counter will reflect that fact and will record information about them, including the IP address of the accessing computer. To check the counter stats, just log back in to your account at OneStatFree.com.

Of course, the way to maximize your protection is to avoid keeping sensitive financial data in your Web mail in the first place. The excellent, free Stanford Password Hash browser add-on (find.pcworld.com/57836) provides additional security by making it easy to use strong, unique passwords for all of your accounts.

ILLUSTRATION: HARRY CAMPBELL

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Reviews & Rankings

The iPhone: Pretty, Powerful, but Imperfect

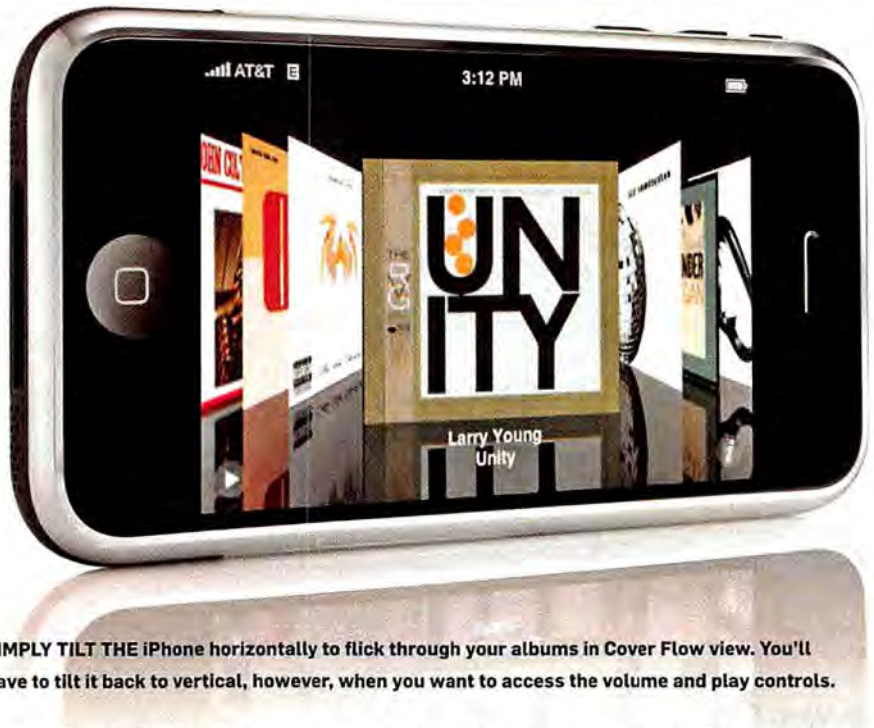
This innovative phone brings you the best of the Web but has some flaws.

ULTIMATE MOBILE TECH GUIDE

AMONG THOSE who queued up on June 29 to buy an iPhone were several of our editors; we have been putting it to the test ever since.

Our verdict: There's plenty to love, and plenty to lament. The iPhone offers a solid design and a beautiful, touch-sensitive 480-by-320-pixel screen you can control with multiple taps or pinches of your fingers. Its browser, while not as versatile as the one on your notebook, is impressive. And of course, it works fine as a cell phone.

But activation requires signing up for a two-year service plan, which may outlast the sealed-in battery. The iPhone doesn't work with AT&T's fastest (HSDPA) data network, and it doesn't work with any third-party apps except Web-based ones—and even those may not run properly, since the iPhone doesn't support several Web formats like Flash.



SIMPLY TILT THE iPhone horizontally to flick through your albums in Cover Flow view. You'll have to tilt it back to vertical, however, when you want to access the volume and play controls.

Overall, the iPhone ranks fifth in our PDA phones chart (see the next page); despite a Superior design score, its specs score and high price weighed it down. Unlike the T-Mobile Wing and Dash, for example, the iPhone lacks productivity apps for editing documents.

Easy Sign-Up and Use

You can sign up for phone service yourself via Apple's iTunes 7.3. In the first days after its launch, we heard many reports of problems with activation; our staffers didn't experience such glitches, however.

Your finger does almost all the navigation, because the iPhone has only four hardware buttons. Once you power it up, sliding your finger across the screen unlocks the phone. Pinching, a two-finger movement, zooms the part of the screen framed by the pinch. Flick or drag your finger to scroll through menus or Web pages. The screen will autorotate content between landscape and portrait mode, depending on which application you're using.

For any feature that requires text input, the iPhone displays an on-screen keyboard that you can toggle between QWERTY text keys and numbers/symbols. It's still no match for the hardware keyboard you get on a BlackBerry or Treo, but it certainly beats any standard cell phone keypad.

PHOTOGRAPHS: MARC SIMON

INSIDE

74 TOP 5 GAMING PCs

78 CANON POWERSHOT TX1

80 GARMIN NUVI, MIO DIGIWALKER

82 NEWERTECH NUPOWER VIDEO+

As a phone, the iPhone works well. Touch-screen dialing is easy enough, although getting to a numeric keypad requires two taps of the phone icon (the first tap just brings up your contacts). We found this two-step process annoying when attempting to dial a number directly—and we wouldn't try to do that while driving. The iPhone lacks voice dialing, and we're not convinced we could successfully dial blind, as we can on a hardware keypad.

Most calls sounded good, albeit with an occasional hiss that was audible to the caller but not to the person on the other end. The speakerphone was faint.

The device can get warm with constant use, and you'll need to wipe smudges from the glass screen frequently with the included cloth. The screen is smart enough to darken and deactivate some controls while you're on a call, so you don't accidentally press something with your cheek. We also loved the visual voice-mail feature, as it lets you choose which voice messages (identified by number or address-book name) to listen to first. However, we wish that the phone also had multimedia messaging and instant messaging capabilities (it allows text messaging, of course).

PC WORLD TOP 5 PDA PHONES

	SMART PHONE	PCW Rating	Performance	Features and specifications
1	BEST BUY RIM BlackBerry 8300 Curve $200 find.pcworld.com/57386	90 SUPERIOR	• Battery life (hours:minutes): 10:00[1] • Battery life score: Superior • Overall design: Very Good	• Carrier: AT&T • Form factor: Candy bar • Weight: 3.9 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: An impressive contender for people seeking a smart phone with strong e-mail and multimedia features.			
2	T-Mobile Wing $350 find.pcworld.com/57415	85 VERY GOOD	• Battery life (hours:minutes): 10:00[1] • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Slide • Weight: 6.0 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: Offers clear calls and long battery life, but some of the buttons are difficult to press.			
3	T-Mobile Dash $200 find.pcworld.com/57387	84 VERY GOOD	• Battery life (hours:minutes): 8:40 • Battery life score: Very Good • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.2 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: The already impressive Dash now has support for Microsoft's productivity applications.			
4	Nokia E62 $130 find.pcworld.com/55628	84 VERY GOOD	• Battery life (hours:minutes): 10:00[1] • Battery life score: Superior • Overall design: Very Good	• Carrier: AT&T • Form factor: Candy bar • Weight: 5.1 ounces • Camera resolution: n/a
	BOTTOM LINE: Affordable and Symbian-based, the E62 is perfect for people who want to use productivity software.			
5	Apple iPhone $599 find.pcworld.com/57879	83 VERY GOOD	• Battery life (hours:minutes): 10:00[1] • Battery life score: Superior • Overall design: Superior	• Carrier: AT&T • Form factor: Candy bar • Weight: 4.8 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: This touch-screen phone is innovative, but it costs a lot, lacks 3G network access, and has limited software.			

CHART NOTES: Prices and ratings are as of 7/11/07. Prices are for phones purchased with an accompanying two-year service agreement, before any rebates. n/a = not applicable (no camera). FOOTNOTE: [1]We cap battery life testing at 10 hours; this phone reached our test maximum with battery life remaining.

Tons of Talk Time

The iPhone's rechargeable lithium ion battery lasted the maximum 10 hours in our talk-time tests, running 2 hours longer than Apple's own stated call time. The phone lasted only 4 hours, 21 minutes, however, when we viewed a 320-by-128-pixel version of *Serenity* at a 647-kbps bit rate—almost 2.5 hours less than Apple's stated video playback time. You can't remove the battery, so you'll have to ship the unit back to Apple if it needs to be replaced.

Apple says that the battery is designed to keep up to 80 percent of its charge after 400 full charge cycles, and that the company will replace the battery if the

capacity falls below 50 percent during the one-year warranty period. To get the battery replaced out of warranty, you will have to send it to Apple and pay $86 (including shipping). You should be prepared to relinquish your phone for three days. A $69 extended warranty covers the battery and the rest of the iPhone's hardware for a second year.

Better Mobile E-Mail

The iPhone's touch-screen text input is not ideal for people who need to compose a lot of e-mail, but the device comes preloaded with settings for AOL Mail, Gmail, .Mac Mail, and Yahoo Mail, and it supports Exchange, IMAP, and POP3 mail. We easily set up access to a Gmail account and, to our surprise, a Lotus Notes IMAP account (mail only, however—we couldn't see our calendar or contacts).

On the PC, the iPhone syncs to your address book (Outlook, Outlook Express, Windows Live Mail, or Yahoo), calendar (Outlook or Outlook Express), mail settings (Outlook or Outlook Express), and bookmarks (IE or Safari). Of course, it syncs to equivalent Mac apps too.

Some editors thought that messages displayed beautifully; others thought that some HTML messages were too small, and they didn't like being unable to rotate the screen for more width. Some people may quibble with Apple's decision not to let users see messages from multiple e-mail accounts in the same window, but moving between accounts is easy. Another nice touch: Deleted messages swoosh into the trash can at the bottom of the mail screen.

The Safari Web browser delivers shrunken versions of desktop-style pages that you scroll and zoom in on to read. As a tool for reading Web content—news sites, say—Safari looks terrific.

But there are problems. The touch screen makes typing URLs and, especially, asterisked-out passwords tricky, and Safari's lack of support for Flash, Java, Real, Windows Media, and other non-QuickTime multimedia formats made some sites function incorrectly, so they wouldn't load visual elements, or didn't let us listen to audio or even log in. Downloading Web pages over AT&T's EDGE cellular data network wasn't as snappy as with Wi-Fi, but EDGE can certainly be usable for Web browsing if you are not in any particular hurry.

THE ON-SCREEN QWERTY keyboard comes up when needed.

THE BUNDLED GOOGLE Maps offers detailed images.

THE SAFARI BROWSER shows mini versions of full Web pages.

SOME MEDIA-RICH SITES don't display or work properly.

Nano-Like Sound

The iPhone comes preloaded with a YouTube player that currently plays about 10,000 videos that have been reformatted for the iPhone's screen. The device has a 2-megapixel camera, but it lacks a zoom and other adjustments, and the photos we took didn't seem very sharp; it won't capture video, either. It'll play video, which can look great, but you'll battle resolution issues. The video of *Serenity*, which appeared fine on an iPod, showed its warts on the iPhone. A higher-resolution (640-by-272-pixel) copy of *Lord of War* looked great but took up 1.35GB—or more than one-fourth of our test phone's 4GB of space.

As a music player, the iPhone sounds like a current-generation iPod Nano. The 4GB model turned in a particularly strong performance on our crosstalk test (of sound leaking between the left and right channels), tying Creative's Zen V Plus for the best score we've seen. It also matched the iPod Nano's impressive score on our test of maximum usable output level. One significant drawback: You'll likely need to use an awkward $10 adapter to plug music headphones (other than the ones that come in the box) into the iPhone's recessed port.

So should you buy an iPhone? Sure, if you want to own a beautifully designed phone/Internet device/music player and are willing to put up with some occasionally exasperating problems. Everyone else, especially those who already rely on a PDA phone for messaging, should probably wait.

—Yardena Arar, Eric Dahl, Harry McCracken, and Melissa J. Perenson

MORE ONLINE

Just how tough is the iPhone? View our iPhone Stress Tests video (find.pcworld.com/57880).

PHOTOGRAPHS: MARC SIMON

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1. Copy protection technology may prevent or limit recording or viewing of certain optical media (e.g., CD or DVD). 2. Lightest model configuration of 1.72 lbs is based on a 64GB solid state drive (SSD), a 3-cell battery and no optical disk drive. The Portégé R500 with the solid state drive will not be available until the end of July 2007. 3. Battery life may vary considerably from specifications depending on product model, configuration, applications, power management settings and features utilized, as well as the natural performance variations produced by the design of individual components. 4. Hard drive capacity may vary. 1 Gigabyte (GB) means 10^9 = 1,000,000,000 bytes using powers of 10. See Hard Disk Drive Capacity Legal Footnote at www.info.toshiba.com. Portégé is a registered trademark of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel and Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Windows Vista is a registered trademark of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners. While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, prices, system/component/options availability are all subject to change without notice. For the most up-to-date product information about your computer, or to stay current with the various computer software or hardware options, visit Toshiba's website at pcsupport.toshiba.com. "World's" claims are based on data as of June 5, 2007. © 2007 Toshiba America Information Systems, Inc. All rights reserved.

Factory Overclocking Juices Up Gaming PCs

PCW Test Center

EVEN BUSINESS PC stalwarts like Dell and Gateway now sell exotic gaming machines with CPUs that they've overclocked for you. In our tests of Dell's new XPS 720 gaming desktop, benchmarked with and without Dell's factory tweaks, we found that the system's overclocking boosted its performance by 6.5 percent.

Each of the desktops ranked in our chart—which also includes new PCs from Alienware and Gateway—boasts an overclocked CPU. The key benefit of buying such a machine: Left at its stock settings, the revved-up chip is covered under the system's warranty—a safety net you don't enjoy when you overclock the CPU in a gaming rig you've built yourself. Our Best Buy, CyberPower's Gamer Infinity Ultimate, is equipped with a quad-core 2.66-GHz Core 2 Extreme QX6700 processor (set to 3.46 GHz). The system earned a score of 129 in WorldBench 6 Beta 2, the highest result achieved by any PC we've tested to date. The Gamer Infinity Ultimate may lack the customized touches you'll see from boutique vendors such as Alienware and Voodoo, but it packs a lot of value for gamers and power users who need speed, storage, and the ability to upgrade.

Polywell Computers' Poly 580CF-2900 (the least expensive system we tested at $3399, and one that doesn't come with an overclocked CPU) missed the chart because of its WorldBench 6 Beta 2 score of 93, a result roughly 26 percent behind its rivals' average of 126.

KEEPING IT COOL: Alienware's Area-51 7500 uses a silent liquid-cooling system (the green pipes shown) to temper its overclocked processor.

PC WORLD TOP 5 GAMING DESKTOPS

	GAMING DESKTOP PCs	PCW Rating	Performance[1]	Features and specifications[2]
1	BEST BUY CyberPower Gamer Infinity Ultimate $4399 find.pcworld.com/56849	89 VERY GOOD	• WorldBench 6 score: 129 • WorldBench 6 rating: Superior • Graphics: Very Good • Overall design: Very Good	• 3.46-GHz Core 2 Extreme QX6700 • Dual (SLI) 768MB XFX GeForce 8800 GTX • 22-inch ViewSonic VG2230WM LCD • 800GB (RAID) drive capacity
	BOTTOM LINE: Moderately priced system packs a lot of value for gamers needing speed, storage, and expandability.			
2	Alienware Area-51 7500 $6007 NEW find.pcworld.com/57629	89 VERY GOOD	• WorldBench 6 score: 125 • WorldBench 6 rating: Superior • Graphics: Superior • Overall design: Very Good	• 3.2-GHz Core 2 Extreme QX6700 • Dual (SLI) 768MB EVGA GeForce 8800 GTX • 24-inch Dell UltraSharp 2407WFP LCD • 550GB (RAID) drive capacity
	BOTTOM LINE: Speedy but expensive liquid-cooled machine includes SLI graphics and high-quality Logitech peripherals.			
3	Xi MTower IGE-SLI $3595 find.pcworld.com/56855	86 VERY GOOD	• WorldBench 6 score: 127 • WorldBench 6 rating: Superior • Graphics: Superior • Overall design: Very Good	• 3.46-GHz Core 2 Extreme X6800 • 320MB EVGA GeForce 8800 GTS • 22-inch Sceptre X22WG-Gamer LCD • 300GB (RAID) drive capacity
	BOTTOM LINE: Water-cooled dual-core system actually outperformed the quad-core CyberPower gaming PC on some tests.			
4	Dell XPS 720 $4959 NEW find.pcworld.com/57625	85 VERY GOOD	• WorldBench 6 score: 124 • WorldBench 6 rating: Superior • Graphics: Superior • Overall design: Very Good	• 3.2-GHz Core 2 Extreme QX6800 • 768MB nVidia GeForce 8800 GTX • 24-inch Dell UltraSharp 2407WFP LCD • 320GB (RAID) drive capacity
	BOTTOM LINE: Well-designed and overclocked PC has plenty of performance and expandability for gamers who can afford it.			
5	Gateway FX530XT $4760 NEW find.pcworld.com/57628	83 VERY GOOD	• WorldBench 6 score: 126 • WorldBench 6 rating: Superior • Graphics: Superior • Overall design: Good	• 3.2-GHz Core 2 Extreme QX6700 • 768MB EVGA GeForce 8800 GTX • 24-inch Gateway FPD2485W LCD • 300GB (RAID) drive capacity
	BOTTOM LINE: Quad-core system delivers strong performance, but offers little room for expansion.			

CHART NOTES: Prices and ratings are as of 7/11/07. For more information on the PCs reviewed in this chart, including testing details, go to find.pcworld.com/57869. [1]As tested with WorldBench 6 Beta 2 version. [2]CPUs are overclocked from stock speeds.

Quad-Core Popular, but Not Yet Vital

Of the systems on the chart, only the Xi MTower IGE-SLI lacked a quad-core CPU (four processor cores on a single chip), the design that currently provides the most gains in complex video editing and 3D rendering. Dell's stylish XPS 720 has Intel's newer QX6800 quad-core CPU overclocked to a relatively conservative 3.2 GHz, coupled with 1066-MHz memory. If price isn't an

PHOTOGRAPHS: MARC SIMON

issue, you may find more appeal in Dell's XPS 720 H2C (for which liquid cooling and a QX6800 processor overclocked to 3.46 GHz are standard specifications). However, a quad-core processor won't be of true benefit for gamers until game developers can fully harness the multicore capabilities of such CPUs.

Though a system's configuration accounts for 20 percent of its overall PC World Rating, pixel-pushing power is the essence of a gaming PC. As such, 50 percent of our rating considers the system's performance—namely, a combination of its WorldBench 6 Beta 2 score and its results in our Doom 3 and Far Cry gaming tests. (In our regular power-PC evaluations, performance is just 30 percent of the rating.)

Gaming Under Vista

These high-performance systems each shipped with, and were tested under, Windows Vista (mostly Premium or Ultimate). If you want to squeeze every last drop of performance from your games, however, you can opt to have your new gaming machine configured with Windows XP. With some vendors, you can also request that your PC be able to dual-boot between both operating systems. But DirectX 10—the Windows technology that's set to allow games to appear visually richer—is exclusive to Vista. All of the nVidia GeForce 8800–series graphics boards that the PCs on our chart use are DX10-capable, and the SLI (dual-card) technology that our top two systems employ now has vastly improved support under Vista. You can expect both nVidia and its rival, ATI, to ensure that their respective dual-card technologies support hot upcoming DX10 titles like BioShock, Crysis, and Hellgate: London. The bottom line is, it could almost be time to leave Windows XP behind for good.

THE INSIDE OF Gateway's FX530XT is cramped and has limited room for expansion.

The best performer in our Doom 3 test run at 1280 by 1024 resolution (with antialiasing turned on) was the Alienware Area-51 7500. Equipped with dual 768MB EVGA GeForce 8800 GTX graphics boards (which together cost at least $1200 on their own), the Alienware PC achieved an average frame rate of 165 frames per second, versus the rest of the gaming-desktop field's average of 143 fps. The Xi MTower IGE-SLI (which uses a single, roughly $280, 320MB EVGA GeForce 8800 GTS graphics board on an SLI-capable motherboard), lagged behind at 133 fps.

Though it too had just a single graphics board, a 768MB nVidia GeForce 8800 GTX, the Dell XPS 720 led the way in our GPU- and CPU-intensive Far Cry game script, which we run at 1280 by 1024 with antialiasing turned on. It averaged 202 fps, easily besting the Alienware and Gateway PCs, which achieved 187 fps and 181 fps, respectively.

Gamer Chic

The futuristic styling of the Dell XPS 720's big, red, aluminum case is both attractive and practical. The large grilles on the front and the rear offer plenty of ventilation, and extra-large fans move air through the very spacious case. Three LED lights illuminate the USB 2.0 ports at the rear, while eight lights shine on the drive bays on the front of the system. Dell's QuickSet software lets you adjust the lighting colors and effects.

DELL'S STYLISH XPS 720 includes Intel's newer QX6800 CPU, overclocked to 3.2 GHz.

The Area-51 7500 has Alienware's signature imposing black case. We liked that the fans in the case's removable side are connected by touch contacts instead of wires, so you can easily remove the side panel without the hassle of having to unplug the fans first.

Though high-end gaming systems usually sport huge, heavy cases, Gateway's FX530XT packs its muscle into a more standard yet still stylish case that stands just 16.5 inches high. It's a little cramped compared with the massive cases of the other systems we reviewed, however. Meanwhile, the Xi MTower's black midsize tower case has a large window on one side that reveals the system's innards bathed in an eerie blue light. The CyberPower Gamer Infinity Ultimate uses a Cooler Master CM Stacker 830 tower case.

Our CyberPower and Alienware test systems also came with the Logitech G15 keyboard, which has an LCD screen for displaying game stats plus 18 programmable buttons for in-game command shortcuts.

The online version of our gaming-PCs chart (find.pcworld.com/57869) has the latest on these pricey but enviable systems. Keep an eye out too for gaming PCs using Intel's Penryn and AMD's Phenom quad-core desktop processors, which are set to ship by year's end.

—Danny Allen

MORE ONLINE For the hottest news and latest reviews on PC gaming, visit our Games Info Center at find.pcworld.com/57943.

Premiere Pro CS3 Goes Light on HD

ADOBE'S PREMIERE PRO CS3 lets you drag and drop clips into an order, and then with one click put them into a video sequence with default transitions added automatically.

THE BIG NEWS about Adobe's Premiere Pro CS3 video editor is that it runs on Windows Vista and, once again, the Mac. However, some features are either missing or not yet fully developed.

For example, Premiere Pro accepts HDV (High Definition Video) footage, but the $799 program will not edit AVCHD (Advanced Video Codec High Definition) footage—something that some video editors costing about $130 can do. Adobe says that it may add AVCHD support after this initial release of the software.

On the bright side, Premiere Pro CS3 costs $50 less than the previous version, and it includes Adobe's Encore DVD authoring software and the OnLocation app for setting up video shoots (determining lighting, sound levels, and so on). Encore supports Flash output and Blu-ray Disc creation but shuns HD DVD. Again, some $130 apps output to both HD disc formats.

The Dynamic Link feature (which isn't new) allows you to send projects from Premiere Pro to Adobe After Effects, or vice versa, without rendering them first—a huge time-saver. Premiere Pro has a new "Export to Encore" feature, but unfortunately you must render your timeline before you can work on it in Encore.

Features I found useful include the new Time Remapping function, which lets you implement slow motion (or fast motion) in the application's timeline simply by dragging a line on the clip. Though it makes the task easier, you have to right-click and select from a pop-up menu the function of the line (which also serves as an adjustment tool for other effects). To change the playback speed of a clip, you must make adjustments and then play the clip (and on slower PCs, you'll need to prerender before you can play it). I would prefer seeing a live preview.

You can now create multiple asset bins (windows) of video source files. This allows you to drag and drop files into the order you want and then select which files to insert into a new video sequence, with default transitions automatically inserted. Plus, you can now substitute clips in a timeline without having to reimplement existing transitions and effects (you must render the effects again, though).

Premiere Pro remains the gold standard of video editors, and I like that you get two bundled applications without having to buy the expensive Production Premium CS3 suite to obtain them. But other elements of this year's suite—such as the audio-editing application Soundbooth—are more compelling than the upgrade to Premiere Pro is on its own.

—Alan Stafford

85
VERY GOOD

Premiere Pro CS3
Adobe Systems
Still the top dog of video editors, Premiere Pro is powerful and well priced, though better high-def support would be welcome.
Street: $799
find.pcworld.com/57795

ASK OUR EXPERTS

Green Graphics Boards?

MY COWORKER WANTS me to build him a "green" PC, but I'm having trouble when it comes to the video card. It needs to run the games Neverwinter Nights 2 and Oblivion.

Kitrax, via the PCWorld.com forums

Senior Editor Narasu Rebbapragada responds: Get a board that meets the European Union's Restriction of Hazardous Substances Directive (RoHS), which forbids the use of six toxic materials. Measuring energy efficiency is trickier, however, as Energy Star does not rate graphics subcomponents. When researching wattage specs, ask which state the board was in (idle or otherwise) when energy consumption was measured.

For the mentioned games, nVidia recommends a GeForce 8800 GTS–based card with 320MB of on-board RAM; compared with more powerful cards, it uses less on-board frame buffer memory (thereby reducing power consumption).

E-mail your question to askourexperts@pcworld.com or post it online at forums.pcworld.com.

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Go to find.pcworld.com/57249

Shoot Stills, HD Video With New Canon Camera

PCW Test Center

THOUGH THE CANON PowerShot TX1 resembles a miniature camcorder, it's best suited for still photography. Oddly, you hold the TX1 vertically instead of horizontally. The compact design comes at the hefty price of $500.

When you power the TX1 on, the lens barrel pops out from the front edge. You flip the LCD panel out from the side of the camera to frame subjects. You can operate the zoom lever with your thumb, and separate buttons let you quickly switch between shooting still photos and capturing movies.

The 7.1-megapixel model offers a lens that zooms to 10X and has optical stabilization, which can reduce the effect of shaky hands. Automatic face detection matches the focus and exposure to your subject. You can record 720p HDTV-quality video at 30 frames per second, while recording stereo sound with the twin microphones in the back of the LCD panel. But keep your videos short: When I recorded a movie at the highest quality setting, I filled a 4GB SDHC media card in less than 15 minutes.

THE EASY-TO-USE CANON TX1 takes high-quality photos and records high-definition video.

In our formal lab tests the TX1 produced high-quality still images, earning a score of Very Good. Our jury was most impressed with the TX1's color accuracy.

The 1.8-inch LCD is a little small by today's standards. You get no optical viewfinder or manual modes, either. The tiny joystick is a little fiddly when you're navigating the on-screen menus.

Nonetheless, if you are comfortable using a camcorder, the TX1 could be a good choice. It's hard to imagine packing a 10X zoom into a smaller package.

—Paul Jasper

84
VERY GOOD

PowerShot TX1 | Canon

Though the TX1 crams a stabilized 10X zoom lens into its compact frame, its camcorder-like design will suit some users better than others, and it's pricey. Street: $500

find.pcworld.com/57775

Windows Moves In, Gets More Comfy on the Mac OS

PARALLELS DESKTOP for Mac 3.0 lets you run Windows XP or Vista on an Intel-based Mac. This virtualization software's new 3D graphics support lets you play PC games on one, too—but it supports few titles.

The $80 software requires at least 512MB of RAM. You can run Windows in Full Screen mode, with the Windows Desktop in a Mac Finder window, or you can put Windows apps in a window on the Mac desktop.

PARALLELS LETS YOU open Windows files in Mac OS X.

Parallels supports OpenGL and DirectX 8.1 but not DirectX 9 or 10, so newer 3D games may not play. When we ran Windows XP SP2 on an iMac equipped with a 2.16-GHz Core 2 Duo chip, older titles such as Doom 3 worked well enough at 800 by 600 resolution, but performance wasn't top notch. For now, Mac-PC gamers should stick with Apple's Boot Camp for its superior DirectX support.

Parallels 3.0 improves file sharing between the two OSs. For example, using the 'Open With...' command now shows relevant Mac apps along with the PC ones. You can also drag and drop files between Windows and Mac folders.

Though Boot Camp is better for playing PC games on a Mac, 3D graphics support gives Parallels 3.0 a welcome new level of functionality.

—Eric Dahl and Narasu Rebbapragada

91
SUPERIOR

Parallels Desktop for Mac 3.0
Parallels

Though the 3D graphics support won't thrill gamers, usability enhancements in Parallels 3.0 let you run Windows applications on a Mac effortlessly. List: $80

find.pcworld.com/57863

PHOTOGRAPH: MARC SIMON

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Go to find.pcworld.com/57634

GPS: A Deluxe Unit Versus a Lower-Cost Alternative

THE LATEST GPS devices from Garmin and from Mio Technology—the Nuvi 680 and the DigiWalker C520, respectively—do a lot more than provide detailed maps. Each unit offers an SD Card slot for viewing images and video on its 4.3-inch touch screen, as well as for playing music while you navigate a map.

Garmin's $675 Nuvi 680 can also stream directions and other audio—such as audio books downloaded from Audible.com—over your car's FM stereo. Mio's $350 C520 lacks extras, but it's a capable navigator.

IN ADDITION TO offering navigation features, the Garmin Nuvi 680 (left) and Mio DigiWalker C520 play media via their SD Card slots.

GPS Deluxe

In addition to clear on-screen and voiced directions, high-quality 3D maps, and a points-of-interest database, the Nuvi 680 offers translations and pronunciations in French, German, Italian, Portuguese, and Spanish.

You also get one free year of the MSN Direct service, which provides traffic and weather information, gas prices, and movie times. After the first year, you can pay a one-time fee of $130, or $50 a year. The traffic information is available in limited areas (for a list, see find.pcworld.com/57827).

When I drove into the coverage area north of San Francisco, MSN Direct began downloading information to the GPS. I started receiving traffic reports after about an hour. The Nuvi 680's suggested alternate routes wouldn't have saved me much time, but this feature could still come in handy.

Several times the Nuvi 680 gave directions too slowly for me to follow them, while the Mio was quicker. The Nuvi 680 generally suggested faster routes than the C520 did, however.

More-Affordable GPS

Mio's less-expensive DigiWalker C520 offers the most important GPS features, the major exception being its inability to stream its audio through your car's FM radio. The C520 itself, however, pronounces street names as it directs you. The device's 3D maps and trip information are easy to see on its wide screen, but the display isn't as bright as that of the Nuvi 680, nor are the maps and other on-screen options as easy to spot.

Both products deliver fast and accurate positioning, although the C520 was less inclined to offer true alternate routes. For example, both devices directed me into the teeth of morning commute traffic, and both recalculated quickly when I ignored their advice and took surface streets. But while the Garmin's first recalculated route was my preferred alternate, the Mio kept instructing me to turn right in an attempt to resume its original route.

The Mio DigiWalker C520 packs in a lot of GPS features, but it lacks the polish and the range of features of the Nuvi 680. If you want extras such as a free year of MSN Direct, the Nuvi 680 is well worth the higher cost.

—Dennis O'Reilly

88
VERY GOOD

Nuvi 680 | Garmin
Boasts a bright screen, loads of features, and streaming audio through a car stereo, but the price is hefty. Street: $675
find.pcworld.com/57849

78
GOOD

DigiWalker C520 | Mio
This affordable GPS device is full-featured and has an SD Card slot, though it can't play audio via your car stereo. Street: $350
find.pcworld.com/57851

PHOTOGRAPH: MARC SIMON

TECH TREND

Living-Room Hard Drives

HITACHI'S CINEMASTAR SERIES, Seagate's DB35 Series, and Western Digital's new My Library Video Edition (find.pcworld.com/57895) are part of a wave of hard drives meant for living-room entertainment devices. "Access time and speed aren't important factors [with video]," says Western Digital's Cathy Scott. The $200, 500GB My Library Video Edition uses a fast eSATA connection but has a slow seek time so that it delivers data just in time, thereby reducing power consumption and noise. Its Mean Time Between Failures (MTBF) rate of 1 million hours is higher than that of WD's desktop drives, though Scott won't say how much higher.

The My Library Video Edition works only with Scientific Atlanta 8300 series DVRs, but Scott says to "stay tuned" for other compatible devices. One candidate is the new TiVo HD, which has an eSATA port. Unfortunately, TiVo hasn't enabled it yet.

—Alan Stafford

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Photo Frames: Choose Wi-Fi or a Huge Screen

SHARING YOUR DIGITAL photos online is easy. But storing them on a PC can make them less convenient to share with guests at home. If you would rather not pass around photo prints, a digital photo frame can help.

83
VERY GOOD

EasyShare EX811 | Kodak
Wireless picture frame produces pleasing images and can access content wirelessly from your PC or from Kodak's EasyShare Gallery.
Street: $180
find.pcworld.com/57815

84
VERY GOOD

PAN-150 | Pandigital
A terrific but pricey photo frame for showcasing digital images at home. List: $299
find.pcworld.com/57816

Both Kodak's 8-inch EasyShare EX811 frame ($180) and Pandigital's 15-inch PAN-150 frame ($299) will play slide shows of digital images. Both come with memory card slots, and both can play music and video files while propped up on their kickstand. But there the similarities end.

Kodak's EX811 displays images via Wi-Fi from your PC or from Kodak's EasyShare Gallery Web site. The frame's 802.11b/g wireless connection is easy to set up via the on-screen menus, except that you must enter your security passcode and account information using the remote (or the buttons on the frame) and maneuver through the on-screen keyboard. Kodak's frame displays photos in shared online albums, without your having to turn your computer on. Though the frame quickly displayed photos taken from my existing shared Gallery albums, it may require up to 2 hours to detect newly shared albums.

KODAK'S EASYSHARE EX811 offers wireless photo sharing; the Pandigital PAN-150 has a huge 15-inch screen.

To send files from your PC to the frame, you need to use Windows Media Player 11 and enable media sharing.

My images looked quite attractive on the Kodak's 800-by-480-pixel LCD, with high contrast and appealing color saturation. The screen has a 16:9 aspect ratio, and I noticed some obvious image cropping in my tests.

Big and Beautiful

The 15-inch PAN-150 frame from Pandigital screams to be the centerpiece of your living room with its large, beautiful picture—but the price is steep at $299.

In my tests the 1024-by-768-pixel screen did a lovely job of rendering my images, delivering well-saturated colors and pleasing contrast. Also, the frame comes with two interchangeable bezels.

The unit has mini-USB and USB ports for attaching other flash storage devices. Menus are easy to figure out, and the navigation buttons on the rear of the unit are conveniently located near the edge. The included remote, though small, is a little easier to use than Kodak's, and it tucks away in the CompactFlash slot.

These two frames offer distinct reasons for preferring one over the other. If size is paramount, the 15-inch Pandigital should satisfy your desires. If easy wireless connectivity and flexible content playback are higher priorities for you, the 8-inch Kodak EX811 is a very good choice.

—Melissa J. Perenson

PHOTOGRAPHS: MARC SIMON

QUICK TAKE

Cheap, Portable iPod Power

NUPOWER VIDEO+ adds battery life—and heft—to an iPod.

NEWERTECH'S NUPOWER Video+ is a $50, 4-ounce, lithium-polymer battery pack for late-model iPods. The company claims that the battery pack supports up to 16 hours of video or up to 80 hours of audio (the 80GB iPod is spec'd to last for 20 hours when playing music). In my tests I got 47 hours of audio-only playback from the NuPower Video+ and a fully charged iPod—far short of the promised life, but lots of juice nonetheless.

The iPod fits pretty snugly onto the connector, though the base is a little thick at about an inch deep. Still, I don't have to charge so often, and the price is pretty good.

—Alan Stafford

79
GOOD

NuPower Video+ | NewerTech
Increases battery life significantly for a relatively low price, though its design is somewhat clunky. Street: $50
find.pcworld.com/57919

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Ultramobile PC Proves Ultradifficult to Operate

HERE'S A SENTENCE that I typed on the split-QWERTY keypad of Samsung's new Q1 Ultra-V ultramobile PC (UMPC): "The quuck browm focx jumprd o er the gence." Tiny, closely packed keys and slow processing make this $1199 mini-PC hard to use.

Fingers larger than chopstick tips will struggle with the minute keys, though you can also use a stylus, a touch screen, an on-screen keyboard, or handwriting recognition. In addition, I much preferred connecting a USB mouse to using the "Mouse" toggle with my left thumb.

This UMPC packs a 60GB hard drive, measures just 9 by 5.5 by 1.25 inches, and weighs only 1.5 pounds. Unfortunately, it is saddled with Windows Vista Home Premium Edition, which seems to plunge every function into a molasses bath. Samsung claims that its AVStation Now software can run movies, music, or photos without performing a full Windows boot; but I found that it booted Windows anyway and took more than 3 minutes to load. An "AV" button on the side of the device starts the program.

The crisp, bright, 7-inch-wide WSVGA LCD touch screen has a native resolution of 1024 by 600, but the type was too small—even through my reading glasses.

Battery life was long (4.5 hours in my informal test), even with the 802.11b/g and Bluetooth 2.0 on. But when will the Q1 Ultra-V improve productivity? Maybe when "The quick brown fox jumps over the fence."

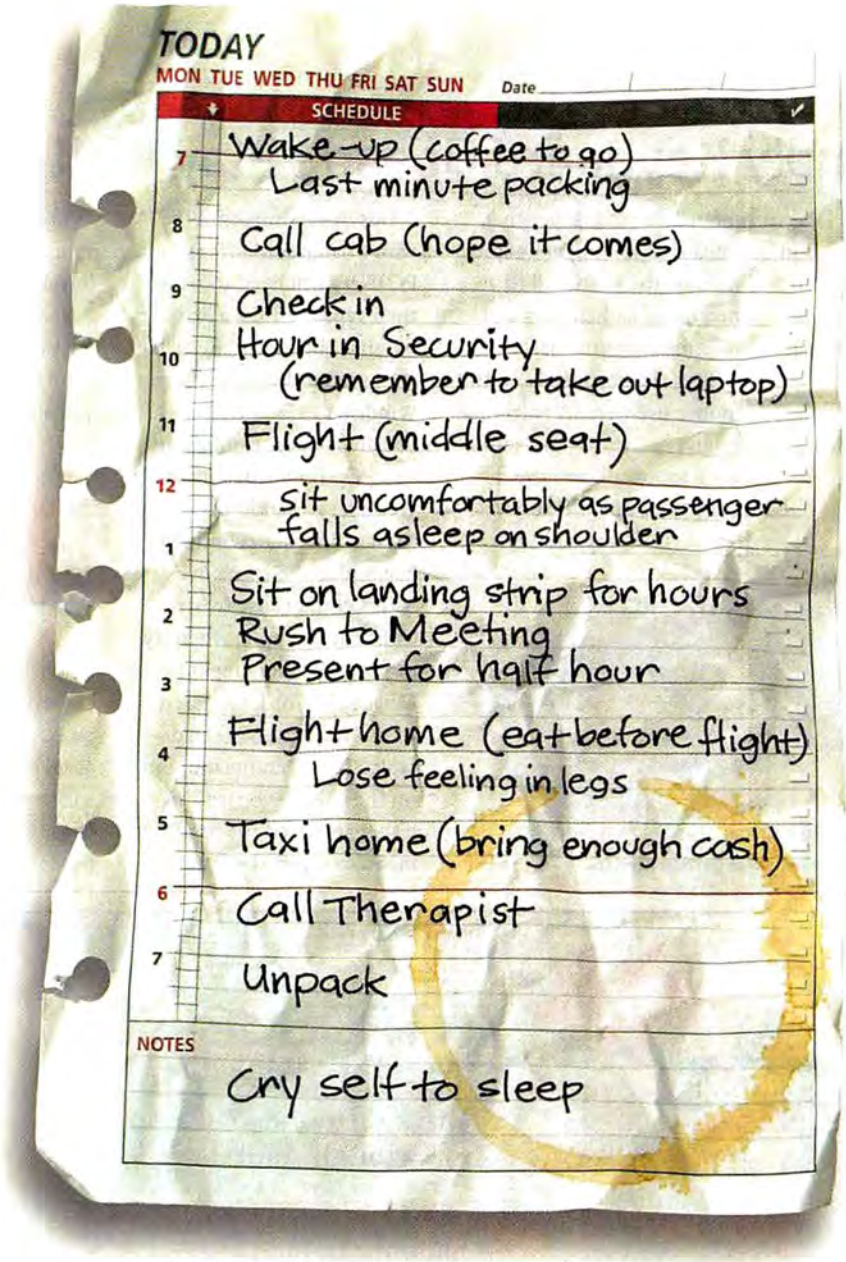
—Michael S. Lasky

73
GOOD

Q1 Ultra-V | Samsung
This full-featured UMPC has a big, bright screen, but slow performance and an awkward keyboard mar its usability. List: $1199
find.pcworld.com/57822

THE SAMSUNG Q1
Ultra-V is slow and its keyboard keys are too small.

PHOTOGRAPH: MARC SIMON



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Mac-Friendly Keyboard Doesn't Play Well With PCs

KENSINGTON'S CI70 Desktop Set aims to cut clutter in your work space. The input-device set includes a stylishly flat wireless keyboard that is much smaller than a standard multimedia keyboard, and a flattish wireless scroll mouse that is thinner than most desktop mice. Despite its size, the keyboard has dedicated launch keys and multimedia controls.

Both the keyboard and the mouse use two AA batteries each. Plus, there's no software to install, and the devices offer dual PC and Mac compatibility.

THE CI70 WIRELESS keyboard/mouse set frees desk space, but its dual PC/Mac design takes some getting used to.

PHOTOGRAPH: MARC SIMON

This dual compatibility won't hamper Mac fans, but PC users will need to adjust their typing habits a little because the Mac's cloverlike ‹Command› key sits where a Windows PC's ‹Ctrl› key usually resides. Hooked up to a PC, the key defaults to a secondary ‹Windows› key, though another ‹Windows› key is just two spots over.

This could cause frustration. For example, when trying to save a document in Microsoft Word, I pressed what I thought was the default ‹Ctrl›-S command; but on the Ci70 keyboard this either activated the Start menu or typed the letter *s*.

Also, the Ci70 mouse is so slim that I found it uncomfortable to use for very long.

Nonetheless, if you're willing to adapt to its design, the handsome Ci70 set will save you a chunk of work space.

—Michael S. Lasky

80
VERY GOOD

Ci70 Desktop Set (Titanium)
Kensington
The keyboard is stylish and sleek, but PC users will have to adapt to its key placement, and the mouse is uncomfortably small.
Street: $70
find.pcworld.com/57823

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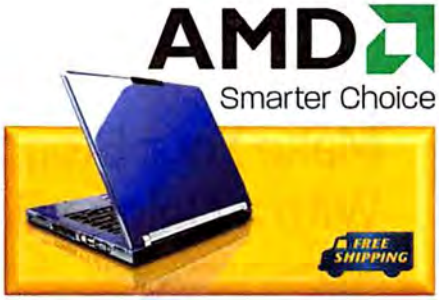
AMD
Smarter Choice



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Make Your Blog Stand Out With a Unique Design

SIX APART'S MOVABLE Type is a powerful blogging tool because of its extensive management features and customizability. But if you don't need professional support and multiple licenses, the free version may be all that you need. I tested Movable Type 4.0 Beta, which significantly improves on the previous free offering.

The most important addition may be the tool's new WYSIWYG editor, with a toggle that lets you quickly alternate editing screens—a feature that users of the competing WordPress have enjoyed for quite a while.

The software's client and server components install in minutes. If you don't host your own blog, you upload the server portion of the software to your host's server.

A clear improvement to Movable Type is the level of customizability. Also, Movable Type's page design is cleaner than the alternatives.

Nevertheless, the Movable Type interface is clumsier than the ones in WordPress and Blogger. For example, when editing your blog's design in Movable Type, you have no simple way to switch back and forth between template sections, such as the header and the footer.

Also new are traffic statistics, shown in graphs and charts on the dashboard, so you don't need to rely on a hit-counter site like OneStatFree.com. A new community tool allows site members to post text, audio, and video.

Users who want to create a unique blog will appreciate this updated version, though the awkward interface makes it less than ideal for inexperienced Web publishers.

—Don Reisinger

MOVABLE TYPE 4.0'S dashboard offers graphs of your site's traffic.

Movable Type 4.0 Beta
Movable Type Open Source Project
Beta software, not rated
The free version of this powerful blogging tool is now open-source, and thus much more customizable.
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Web-Based Note Taker Is Powerful and Free

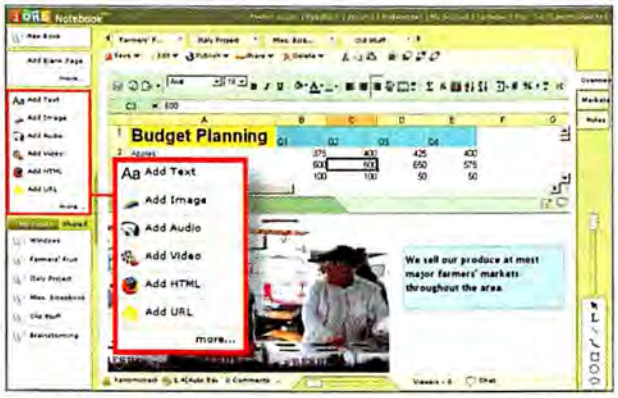
TAKE MICROSOFT'S OneNote note-taking program, put it on the Web, add lots of cool collaborative tools, and make it free—and you'd have something resembling AdventNet's Zoho Notebook service (notebook.zoho.com).

Like OneNote, Zoho Notebook allows you to organize multiple-page on-screen binders that include information such as text, graphics, audio, video, and embedded Web content. I especially like how an entire notebook page can behave as a text document or a spreadsheet, complete with Office-like editing tools from AdventNet's other services.

Zoho Notebook's features outshine those in OneNote (and in Google Notebook, a Web-based rival). You can share a whole notebook, individual pages, or specific objects (such as images), and you can grant colleagues either editing or read-only privileges. It even gives you a built-in chat window.

This beta doesn't have a few common features, such as a search capability. Also, the program lacks documentation (such as, how to use a handy Firefox extension for clipping content from other sites). The company says that search and help may be up by the time you read this. But even as is, Zoho Notebook is worth checking out.

—Harry McCracken



ZOHO NOTEBOOK LETS you put all sorts of items in multipage binders.

79
GOOD

Zoho Notebook | AdventNet

A powerful tool for creating, collecting, and sharing information; the beta version, however, is rough around the edges. Price: Free

find.pcworld.com/57763

Special Advertising Supplement

When Losing Files Is *Not* An Option

R-Studio from R-Tools gives major boost to data recovery and business continuity

The R-Studio Vista-ready business continuity solution continues to improve. Now **R-Studio** from R-Tools, the industry leader in high-performance data recovery solutions, includes HFS and HFS+ file systems support, UFS/BigEndian support, GPT partition layout schema support and Apple partition map support.

Another recent enhancement is a universal hexadecimal editor to inspect and edit file system structures. These can include NTFS and FAT boot sectors, MFT file record, MBR, LDM structures and others. This advanced tool is particularly helpful for specialists working in lower-level data processing, IT security, data recovery and computer forensics. R-Studio is an ideal file recovery solution for IT specialists and advanced users who need to recover or undelete lost data on a local computer or server only.

R-Tools also recently launched an enhanced version of **R-Wipe & Clean,** which automatically keeps applications free and clear of harmful clutter. R-Wipe & Clean now supports Windows Vista and removes useless or unwanted data from more than 200 third-party applications, including Microsoft Office 2007.

Other business continuity solutions in the R-Tools lineup include **R-Drive Image 4.0,** which enables users to totally, quickly and confidently restore their systems after a major crash, attack or hardware failure. R-Drive Image 4.0 is flexible in that imaged files can be stored in a variety of places and on various removable media such as CD-R(W)/DVD, Zip disks, Jazz disks and so on. The utility is accurate in that image files contain exact byte-by-byte copies of a hard drive, partition or logical disk.

Other superb utilities and solutions from R-Tools include:

- **R-Mail for Outlook** and **R-Mail for Outlook Express**, which reconstruct inadvertently deleted email messages or damaged .pst and .dbx files
- **R-Word** and **R-Excel**, which recover damaged Word or Excel files that have been corrupted or attacked

To learn more about the latest release of R-Studio and the rest of the exceptional solutions from R-Tools designed to keep your business up and running efficiently, visit **www.r-tt.com**.

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Networked Storage Gets Extremely Affordable

PCW Test Center

NETWORK-ATTACHED storage (NAS) for homes and small businesses is becoming cheaper and easier to use. We tested four new drives, three of which made our chart. All are simple to set up, all come with USB 2.0 ports for backing up to an external hard drive, and all support some kind of multidrive RAID configuration.

Our new Best Buy, Netgear's lightning-fast ReadyNAS NV+, is a rebranded version of our previous winner, Infrant Technologies' ReadyNAS NV. (Back in May, Netgear announced that it was acquiring Infrant Technologies.) The Netgear's shiny silver case holds four hot-swappable drives, good for 1 terabyte (1000GB) of capacity and configurable as RAID 0, 1, or 5, or as Netgear's proprietary X-RAID, which lets you add drives and rebuild the RAID on the fly. The browser-based settings are highly configurable and well explained. You get quite a lot for your money, too, though this expensive device delivers more NAS than most home users will need.

NETGEAR'S READYNAS NV+ is fast and highly configurable.

Hammer's 500GB Myshare, our third-ranked drive, is a better home-user option. It lacks DLNA support for media server capabilities, but Hammer says that an impending firmware update should correct that shortcoming. This inexpensive dual-drive device turned in above-average performance and has a solid design that includes two USB ports, one of which allows the Myshare to back up files to an external USB drive automatically. On the other hand, it was the only drive of the group that didn't come with backup software.

Buffalo Technology's 1TB TeraStation Live has a nicely designed settings interface, the best on-screen display, and a lock for securing its case of four removable drives. It performed slowly compared with the others we tested, perhaps because of its default RAID 5 setting, which ensures data redundancy across drives. It was the only new device to lack print server capabilities too.

HP's Media Vault Pro mv2040 scored less than a point below the TeraStation Live in our ratings, just missing the chart. You can swap out only one of its two 500GB drives, and it has the fewest RAID options. It was a slightly below-average performer. HP sells this drive at its online store for small and medium-size businesses.

—Narasu Rebbapragada

PC WORLD TOP 5 NAS DRIVES

	NETWORK-ATTACHED STORAGE	PCW Rating	Performance	Features and specifications
1	BEST BUY Netgear ReadyNAS NV+ $1099 NEW find.pcworld.com/57859	88 VERY GOOD	• Overall performance: Superior • Copy files: 373 seconds • File search: 563 seconds	• 1000GB • 7200 rpm • USB 2.0, gigabit ethernet • Cost per gigabyte: $1.10
	BOTTOM LINE: Fast but expensive device comes with deep settings that are well suited for business use.			
2	Maxtor Shared Storage II $500 find.pcworld.com/55239	82 VERY GOOD	• Overall performance: Very Good • Copy files: 333 seconds • File search: 245 seconds	• 1000GB • 7200 rpm • Gigabit ethernet • Cost per gigabyte: $0.50
	BOTTOM LINE: Solid performer has a backup button, a print server, and a media server, and it helps organize media files.			
3	Hammer Myshare $280 NEW find.pcworld.com/57856	78 GOOD	• Overall performance: Very Good • Copy files: 360 seconds • File search: 265 seconds	• 500GB • 7200 rpm • USB 2.0, gigabit ethernet • Cost per gigabyte: $0.56
	BOTTOM LINE: Inexpensive networked device lacks bundled backup software but is otherwise easy to use.			
4	Maxtor Fusion $600 find.pcworld.com/55231	77 GOOD	• Overall performance: Superior • Copy files: 283 seconds • File search: 237 seconds	• 500GB • 7200 rpm • Gigabit ethernet • Cost per gigabyte: $1.20
	BOTTOM LINE: Good beginner's option comes with slick-looking (but not always intuitive) software for organizing media.			
5	Buffalo Technology TeraStation Live $699 NEW find.pcworld.com/57853	76 GOOD	• Overall performance: Good • Copy files: 415 seconds • File search: 347 seconds	• 1000GB • 7200 rpm • USB 2.0, gigabit ethernet • Cost per gigabyte: $0.70
	BOTTOM LINE: Large NAS device has an informative on-screen display and multiple RAID options.			

CHART NOTES: Prices and ratings are as of 7/11/07. Drive capacity may represent total space on multiple hard drives. Media server capabilities do not include media players.

MORE ONLINE For more information about network-attached storage and for details on how we test, go to find.pcworld.com/55290.

PHOTOGRAPH: MARC SIMON

30 million computer users don't trust the power grid.

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

They do trust APC. Shouldn't you?

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– Venture Development

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

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

According to the Department of Energy, electricity consumption will increase by 40% over the next 10 years. Yet today, investment in utilities is at an all-time low. It's a "perfect storm" for computer users, one that makes APC protection even more essential.

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

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'Shred' Your Personal Data

VELOSECURE'S intelligently designed Identity Finder software locates sensitive information on your PC and prompts you either to delete that info or to shield it from data thieves and snooping malware. The app searches your e-mail, files, Web history, and Windows Registry for data such as passwords or credit card numbers, without your having to enter them. It also can find a birth date, a mother's maiden name, or a driver's license number, for example, after you've input that data.

Unfortunately, the software seems overpriced to me, at $40 per PC license.

Searching your entire computer can take hours—but what the app finds may surprise you. It discovered my credit card number in three saved Firefox forms, though it also labeled a few things as passwords that weren't.

Identity Finder works with equal success in Windows Vista, XP, and 2000.

—Erik Larkin

78
GOOD

Identity Finder | Velosecure
This data-shredding software is effective at finding and protecting personal information on a PC, but it's expensive. List: $40
find.pcworld.com/57801

DOWNLOAD THIS LAURA BLACKWELL

Freebies for Writers and Readers

THE PEN MAY be mightier than the sword, but it's not always easier to use. This month's downloads make writing and reading simpler, better, and more productive. Two are completely free of charge, and one offers a feature-rich free trial version with no time limit.

PDF Improved

Adobe's popular PDF format re-creates print documents electronically, and you can enjoy the files for free with Adobe Reader. But Reader doesn't let you point out errors or add comments; to handle that, you could invest $229 or more in Adobe Acrobat—or you could use Tracker Software's free PDF-Xchange Viewer.

This attractive, easy-to-use application can't create PDF files, but it's great for monkeying with existing ones. PDF-Xchange Viewer supports many kinds of markup, from highlighting to circles to sticky notes—and you can even export the product as another PDF. Now that's flexibility. (Free, find.pcworld.com/57736)

AutoCorrect Everything

Slow typing wastes time, but hurried mistakes create confusion and embarrassment. PhraseExpress spares you these extremes. This simple macro utility pastes its own stock phrases, favorite ones you add, or whatever's on your Clipboard into documents, e-mail messages, blogs, and so forth. Because it simulates actual keyboard input, PhraseExpress should work with any Windows app (I couldn't find any application it didn't support), but the developer makes no guarantees.

PhraseExpress's AutoText feature lets you create code words that it automatically converts into the phrases you associate with them—for example, typing **myaddress** in the AutoText field could produce your street address in a document. Conveniently, PhraseExpress can import AutoText and AutoCorrect settings you may already have created in Microsoft Word.

A caveat: If you import AutoCorrect entries from Word, both PhraseExpress and Word will use them, yielding duplicate text entries. Bartels Media, maker of PhraseExpress, suggests turning off AutoCorrect in Word and letting PhraseExpress do the job. (Free, find.pcworld.com/57737)

Keep Tabs on Your Tomes

Have you ever wracked your brain trying to remember whether you own a certain book, or turned your living room upside down looking for an errant volume? If so, Collectorz.com's Book Collector could be the organizing software of your bibliophilic dreams.

When you enter a book's title, author, and/or ISBN, Book Collector searches for it in databases such as those of Amazon.com and the Library of Congress, and downloads information from publication date to cover art to plot synopsis. Once the software creates an entry, you can add data about your copy: condition, physical location, notes...even e-book or paper type. You can browse your database by title, author, genre, cover image, or other category.

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The free trial version lets you catalog 100 volumes, after which you can't add or change any books or data. To unlock the data vault, upgrade to the $40 full version, which includes loan tracking so you can keep tabs on your book-borrowing friends. (Free 100-volume trial, $40 full version, find.pcworld.com/57738) ●

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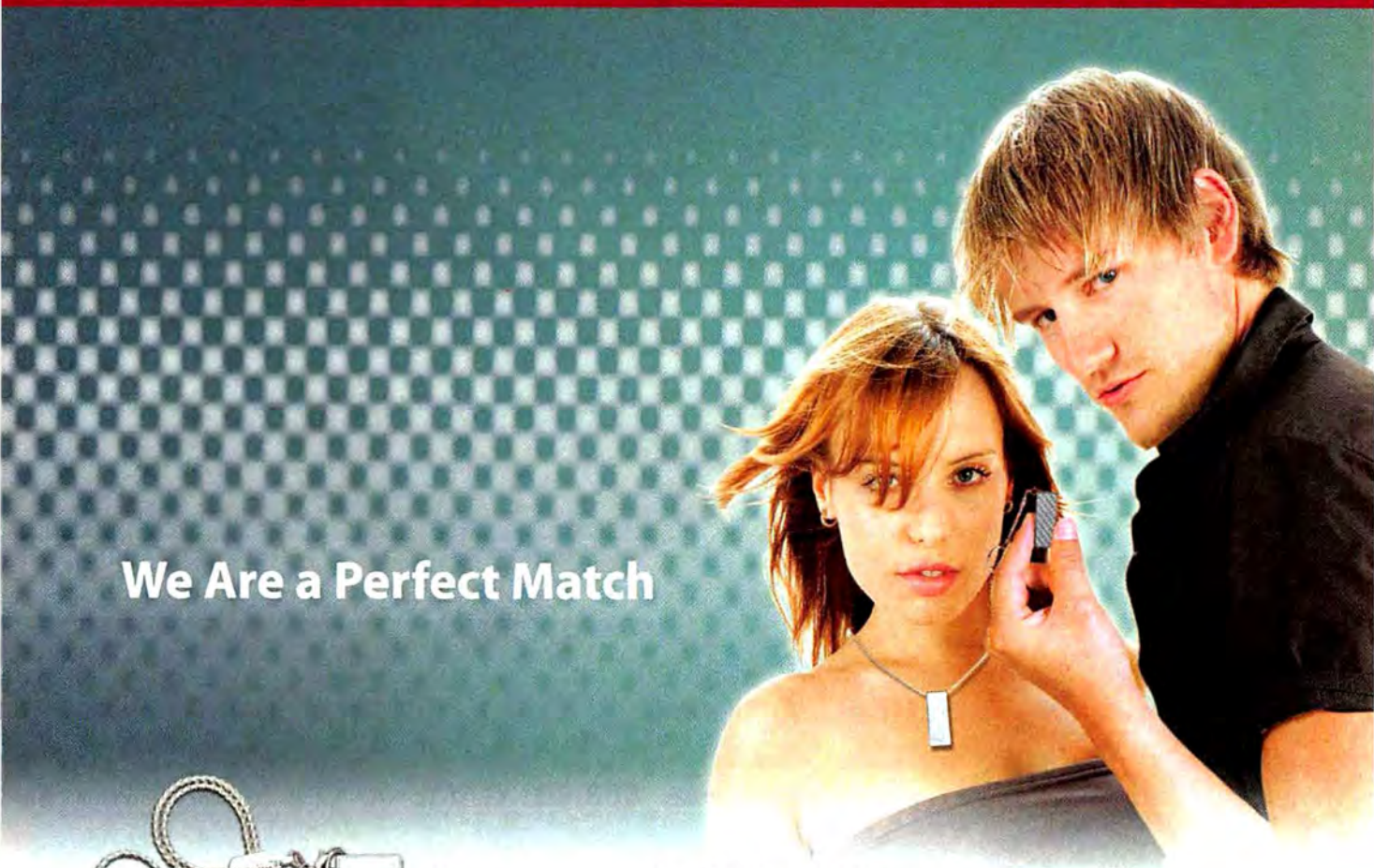

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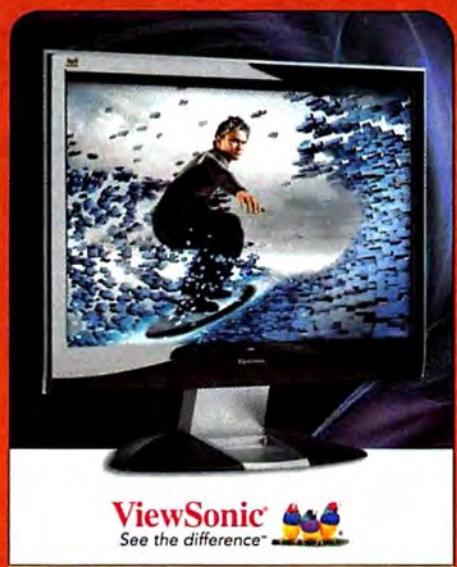

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A truly decked-out notebook is the ideal traveling companion. We lab-tested six new portable powerhouses, and picked accessories that let them do even more.

Laptops of Luxury

BY CARLA THORNTON
TESTING BY THOMAS LUONG AND WILLIAM WANG

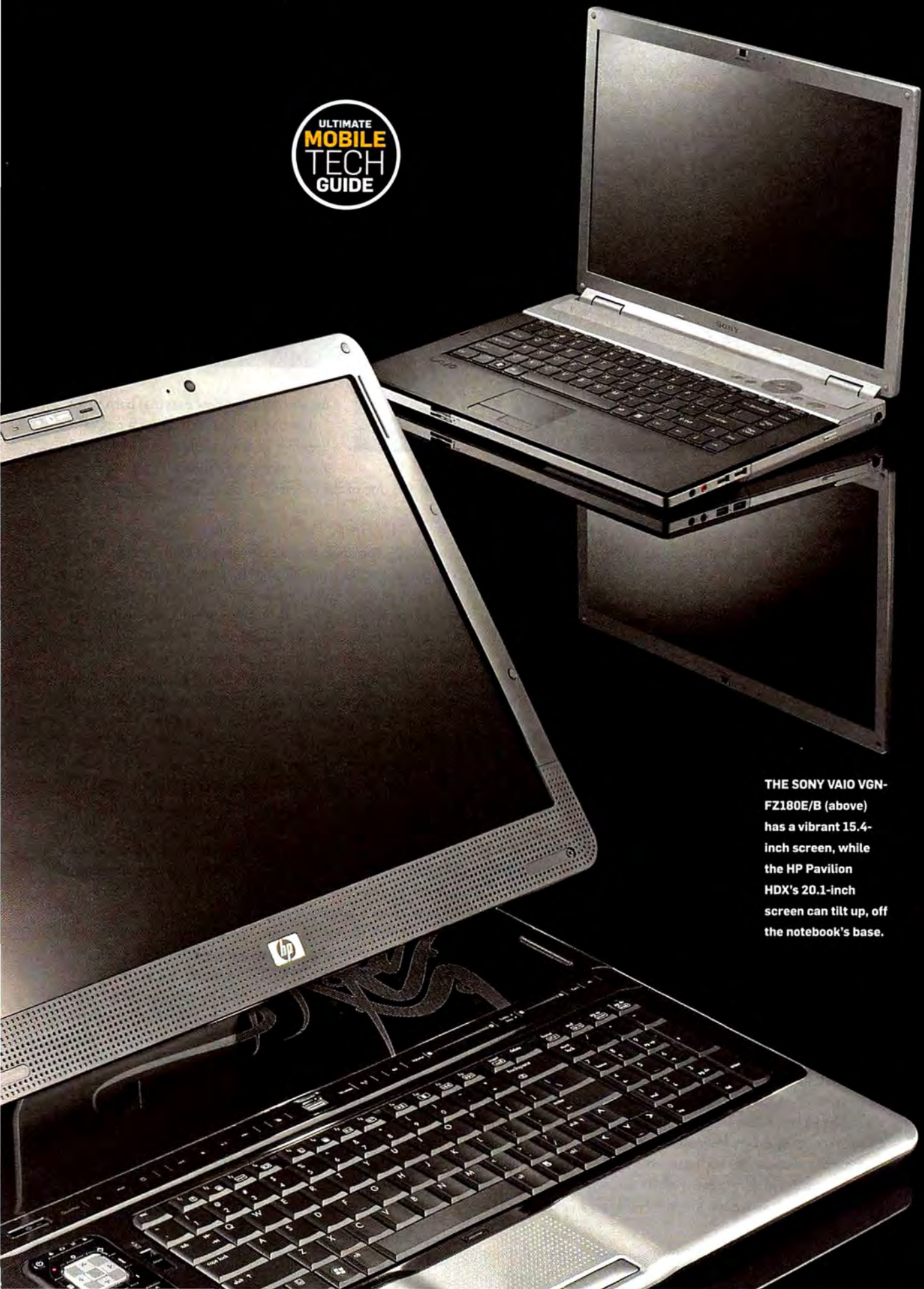
LAPTOPS HAVE GONE EXTREME. Some of the latest models come loaded with giant screens, massive hard drives, dual processors, Blu-ray or HD DVD drives, and even designer lids, if you so desire. Laptops have also become incredibly popular in recent years—major vendors say that portables are on track to outsell desktop PCs by 1 million units this year. Laptop companies must be doing the right things to make their machines so enticing.

We rounded up six of the biggest, baddest laptops we could find to see which are worth your hard-earned dollars. We tested three desktop replacement models (the Apple MacBook Pro, Dell Inspiron 1720, and HP Pavilion HDX) and three all-purpose laptops (the Lenovo ThinkPad R61, Sony VAIO VGN-FZ180E/B, and Toshiba Satellite A205-S4639). We ran our WorldBench 6 Beta 2 benchmark test suite—as well as our battery tests—on the notebooks, and we also put them through our rigorous hands-on evaluations. In the end the HP notebook came out atop the desktop-replacement category, while the Lenovo portable bested the other all-purpose models.

In addition to looking at some of the most decked-out portables available, we examined the latest mobile broadband options to help you stay connected when you're on the road. We also checked up on solid-state technology and how it's changing the way laptops perform. We peeked a bit into the »

PHOTOGRAPHS BY CHARLIE NUCCI

ULTIMATE MOBILE TECH GUIDE



THE SONY VAIO VGN-FZ180E/B (above) has a vibrant 15.4-inch screen, while the HP Pavilion HDX's 20.1-inch screen can tilt up, off the notebook's base.

APPLE'S MACBOOK Pro (left) is lightweight and fast, while the Dell Inspiron 1720 is ideal for entertainment.

future to see where laptop technology is headed. And finally, we rounded up a number of carry-on bags for protecting your machine and looked at some accessories that can help increase your productivity when you and your notebook are traveling.

HP Pavilion HDX

BEST BUY

Gamers have a new best friend in the HP Pavilion HDX Entertainment Series Notebook PC. Superfast, with great sound and a huge 20.1-inch screen, it's a good, fairly portable entertainment system. Digital editors, artists, and multimedia enthusiasts will like this all-in-one, too. Just be ready to dig deep for it: Our test unit cost $3000.

The machine we looked at came maxed out with the 64-bit version of Windows Vista Ultimate; Intel's best mobile chip, the 2.4-GHz Core 2 Duo T7700; and 4GB of RAM. All of that horsepower helped the HDX earn a WorldBench 6 Beta 2 score of 86 and generate a frame rate of 109 in our Far Cry gaming tests. The HDX's 2-hour, 22-minute battery life is quite poor for an ordinary notebook but remarkably good for a massive (15.5-pound) desktop-replacement model.

The HDX is impressively crafted. For one thing, the machine looks stylish; the exterior is a subtle variation on HP's designer imprint finish called "The Dragon." The 1680-by-1050 glossy screen is easy to move back and forth on its adjustable arm for a comfortable viewing angle, and it's bright without being too reflective. The keyboard, which includes a dedicated number pad, offers desktop-like typing comfort along with one-touch QuickPlay media controls.

The system's four integrated Altec Lansing speakers, aided by an HP triple-bass-reflex subwoofer, produce very loud, rich sound, but a rear audio-out port makes it a snap to add a nicer, external set of speakers for gaming surround sound. Its many multimedia connections include a coaxial port for a TV signal. Our test system included two 100GB hard drives, and if even that isn't enough space for you, the HDX has an eSATA port for adding a fast new external hard drive.

If you've been searching for a powerful, luggable gaming machine or an ultrahigh-end desktop replacement, give the HDX a look. It's one of the nicest 20.1-inch models we've seen yet.

Apple MacBook Pro

For people who appreciate finer laptop accoutrements such as a backlit keyboard and a slot-fed DVD drive, Apple has crafted another tasty offering in the form of the 17-inch MacBook Pro. Sleek, powerful, and able to run Windows as well as the Mac operating system, the MacBook Pro makes a strong case for becoming anyone's ultimate notebook.

Equipped with a 2.4-GHz Core 2 Duo T7700 processor, the maximum 4GB of RAM, a 160GB hard drive, and nVidia's new top-of-the-line notebook graphics card, the nVidia GeForce 8600M GT, our $2949 test unit set new speed records. The MacBook Pro outperformed the rest of the notebooks we tested, all of which claim Windows as their primary—nay, their only—operating system. We loaded Windows Vista Home Premium on the Apple notebook, and it snagged a WorldBench 6 Beta 2 score of 88. In games it achieved a blazing frame rate of 141 frames per second in Far Cry (with antialiasing turned off).

At 6.6 pounds and just 1 inch thick, the MacBook Pro is the lightest 17-inch notebook available. But it has no memory card slots and only three USB ports, and it comes configured with an ExpressCard/34 slot instead of the more versatile ExpressCard/54 slot. Though it has Bluetooth and 802.11n Wi-Fi, built-in broadband is not an option. On the other hand, video editors will be happy to have not one but two FireWire ports. Battery life was disappointing: Apple pegs it at 5.7 hours on one charge, but in our tests we got less than 2 hours, 45 minutes.

Nevertheless, the MacBook Pro is elegantly designed and remarkably mobile for a 17-inch notebook.

Dell Inspiron 1720

A powerful laptop does not have to be a boring laptop. Take Dell's Inspiron 1720, a robust system that also happens to be available in seven colors besides black. The 1720 is a heavyish

17-inch notebook, but its multimedia design is outstanding.

Superbly crafted for a demanding home office, the 1720 has a full-size keyboard with a separate number pad. Our test machine had a single 160GB hard drive, as well as a complete contingent of connections—five USB ports, an ExpressCard/54 slot, and a memory card slot. The 1720's weight (8.7 pounds) makes it a less-than-ideal notebook for the road.

When you're ready to kick back, Dell's DirectMedia button provides instant access to the full panoply of entertainment choices: DVD movies, music, photo slide shows, and videos. The stereo sound is good; a Blu-ray Disc drive is an option, albeit a costly one ($660 on top of our test unit's $2409 price).

Configured with a 2-GHz Core 2 Duo T7300 processor, 2GB of RAM, and an nVidia GeForce 8600M GT graphics card, the 1720 proved an agile workhorse and gaming machine. Its WorldBench 6 Beta 2 score of 75 puts it in the top 10 percent of currently tested notebooks. The 1720 kicked booty in our gaming tests, producing 116 frames per second playing Far Cry at 1024 by 768 resolution. Its 3-hour, 33-minute battery life, while not great, is above average for this class.

Our review notebook had an espresso-brown lid that I found a little drab, but if you're looking for a notebook with some pizzazz, try the Inspiron 1720 in spring green or flamingo pink, among other available hues. Who said work isn't fun?

Lenovo ThinkPad R61

BEST BUY

A classic ThinkPad, the R61 is full of nice features you don't usually find in a laptop, such as the ThinkLight, an LED that illuminates the keyboard. The R61's 14.1-inch screen and 5.8-pound weight make it an ideal travel companion, too. For a work-oriented notebook decked out with all the trimmings, this model is hard to beat.

The first-rate keyboard includes both a touchpad and an eraserhead nub, as well as dedicated Internet forward and back buttons. An integrated fingerprint reader, located in the right palmrest, makes log-ins a breeze once you set it up. You »

Loaded Laptops for Everyone

PCW Test Center

These six laptops offer diverse options. Some, like HP's desktop replacement, are loaded but big and heavy, while the Lenovo is ideal for travel. For pure speed, check out the MacBook Pro, the fastest Windows notebook we tested.

DESKTOP REPLACEMENT	PCW Rating	Performance	Features and specifications	Bottom line
1 BEST BUY HP Pavilion HDX $3000 find.pcworld.com/57901	86 VERY GOOD	• WorldBench 6 Beta 2 score: 86 Superior • Overall design: Superior • Tested battery life: 2:22	• 2.4-GHz Core 2 Duo T7700 • 20.1-inch wide screen • 15.5 pounds • HD DVD-ROM/DVD±R DL/DVD±RW/-RAM	Stylish, high-end desktop replacement is huge and heavy, but its fast performance makes it a great gaming machine.
2 Apple MacBook Pro $2949 find.pcworld.com/57902	84 VERY GOOD	• WorldBench 6 Beta 2 score: 88 Superior • Overall design: Very Good • Tested battery life: 2:44	• 2.4-GHz Core 2 Duo T7700 • 17.0-inch wide screen • 6.6 pounds • DVD±R DL/DVD±RW/-RAM	Lightweight 17-incher has a beautiful screen and comes loaded with useful software. It's exceptionally fast, too.
3 Dell Inspiron 1720 $2409 find.pcworld.com/57903	82 VERY GOOD	• WorldBench 6 Beta 2 score: 75 Very Good • Overall design: Very Good • Tested battery life: 3:33	• 2-GHz Core 2 Duo T7300 • 17.0-inch wide screen • 8.7 pounds • DVD±R DL/DVD±RW/-RAM	Splashy laptop offers top-notch entertainment options and great sound, as well as strong performance.
ALL-PURPOSE LAPTOP	**PCW Rating**	**Performance**	**Features and specifications**	**Bottom line**
1 BEST BUY Lenovo ThinkPad R61 $2004 find.pcworld.com/57905	81 VERY GOOD	• WorldBench 6 Beta 2 score: 80 Superior • Overall design: Very Good • Tested battery life: 3:19	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 5.8 pounds • DVD±R DL/DVD±RW/-RAM	Slim size and light weight make the R61 a perfect choice for taking on the road. Its battery life is unimpressive, however.
2 Toshiba Satellite A205-S4639 $1500 find.pcworld.com/57906	79 GOOD	• WorldBench 6 Beta 2 score: 67 Very Good • Overall design: Very Good • Tested battery life: 2:28	• 1.73-GHz Core 2 Duo T5300 • 15.4-inch wide screen • 6.5 pounds • DVD±R DL/DVD±RW/-RAM	Though hampered by poor battery life, the A205-S4639 offers reasonably good performance and great sound.
3 Sony VAIO VGN-FZ180E/B $1999 find.pcworld.com/57907	78 GOOD	• WorldBench 6 Beta 2 score: 75 Superior • Overall design: Good • Tested battery life: 4:28	• 2-GHz Core 2 Duo T7300 • 15.4-inch wide screen • 5.7 pounds • BD-R/RE/DVD±R DL/DVD±RW	Midsize notebook with a nice screen turned in excellent performance and long battery life in our tests.

CHART NOTES: Prices and ratings as of 7/11/2007. The price of the Apple MacBook Pro includes the cost of Windows Vista Home Premium.

can hot-swap devices—the dual-layer DVD drive or an extra battery, among others—in and out of the right-side modular bay with one hand. On-screen documentation and system recovery utilities are just a button press away.

The 2.2-GHz Core 2 Duo T7500–equipped R61 performed admirably in our speed tests, with a WorldBench 6 Beta 2 score of 80. The R61's 3-hour, 19-minute tested battery life is good.

The $2004 ThinkPad R61 is a nicely designed machine that deserves consideration as a travel-worthy portable.

Toshiba Satellite A205-S4639

The Toshiba Satellite A205-S4639 lacks the wow factor, and it doesn't have a mobile-broadband card or even Bluetooth. But it can handle most applications, looks good, and has two hard drives—one with a capacity of 160GB and the other 120GB. If you generate big files, this $1500 Windows Vista Ultimate portable could make you quite happy.

The A205 turned in pretty good speed numbers: Equipped with a 1.73-GHz Core 2 Duo T5300 processor and 2GB of RAM, it earned a WorldBench 6 Beta 2 score of 67, putting it in the top 25 percent of currently tested laptops. But its 128MB nVidia GeForce Go 7300 graphics card isn't powerful enough for reliable 3D gaming. It managed a smooth and perfectly playable 41 frames per second in Far Cry with antialiasing turned off, but it reached an all-time low of 9 fps in Doom 3. Its battery life was way below par, too, at 2 hours, 28 minutes. Still, this laptop offers a nice 15.4-inch screen, a piano-black lid that adds style, and terrific-sounding Harman/Kardon stereo speakers. The vast amount of storage (almost 300GB) gives you room to grow or a convenient way to back up files.

Sony VAIO VGN-FZ180E/B

If you can adapt to the Sony VAIO VGN-FZ180E/B's slippery keyboard, you'll like this peppy $1999 laptop. It offers a big, bright screen, weighs very little, and has great battery life.

The VAIO VGN-FZ180E/B is certainly well equipped, with

Accessorize, Accessorize

WHAT IS THE well-dressed laptop wearing these days? I found several pricey but must-have wireless, USB, and ExpressCard peripherals that you'll want to pack.

The $69 Lubix Stereo Bluetooth Headset is marketed as a cell phone accessory but works with laptops for VOIP calls or music, and it has a cool design. When you aren't using the set, the two magnetized halves stick together to make a pendant.

What, your laptop has no built-in Webcam? Creative Labs' $129 Live Cam Optia AF is a sleek, 2-megapixel, USB 2.0 model that clips onto your notebook's lid. It can capture images at almost any angle with its 270-degree swivel.

Like to pace during meetings? Logitech's $119 Orbicam, with an eyeball-like mechanized lens, keeps you in the picture during videoconferences.

If you're still using a wired mouse, ditch it at once for either the $70 Targus Rechargeable Bluetooth Laser Mouse or Logitech's $86 VX Revolution Cordless Laser Mouse. Since the Targus mouse uses Bluetooth, you don't need a separate receiver as you do with USB wireless mice; in addition it uses laser optics, the latest in mousing technology. The VX Revolution requires a USB receiver and an AA battery, but it offers word highlighting, which conducts an automatic search in your favorite search engine.

ExpressCards are the latest way to add neat stuff to your laptop way beyond storage. Interlink Electronics' $60 Bluetooth ExpressCard Media Remote stores and charges in an ExpressCard/54 slot when you're not using it to crank up the volume on the latest DVD blockbuster. ExpressCard mice should be available from HP and Newton Peripherals in early August.

All of these products are great add-ons, but they're useless if your notebook's battery suddenly poops out. The $139 Kensington Wall/Auto/Air power adapter for notebooks works everywhere and can also power your cell phone, PDA, iPod, or MP3 player.

FROM LEFT: Lubix's UBHS-NC1-3D Bluetooth earphones, Logitech's Orbicam Webcam, and Targus's Rechargeable Bluetooth Laser Mouse.

TOSHIBA'S SATELLITE A205-S4639 (left) comes loaded with storage. Lenovo's ThinkPad R61 is well equipped to hit the road.

plenty of connections and a huge 200GB hard drive. The Blu-ray Disc drive and HDMI-output port are nice extras, to be sure. Its sound quality is dismal, however, and its A/V button does nothing more than launch Windows Media Player.

But the VAIO's 15.4-inch screen is superb. Based on Sony's proprietary Xbrite HiColor high-contrast technology, it is extremely bright and really makes colors pop. At 5.7 pounds, the VGN-FZ180E/B is light enough that you can easily carry this delectable screen almost anywhere, and the notebook held out for 4 hours, 28 minutes of battery life in our tests.

Equipped with a powerful 2-GHz Core 2 Duo T7300 processor and 2GB of RAM, the VAIO turned in a WorldBench 6 Beta 2 score of 75, but the Sony couldn't even launch—much less smoothly run—Far Cry or Doom 3 in our tests.

The keyboard feels a little cheaply made, maybe because the keys are so flat and polished, but the layout is fine. With practice, I got used to the slippery feel.

If you want a top-notch multimedia laptop, look to a Dell Inspiron or a Toshiba Satellite. For a nice work laptop with a great 15.4-inch screen, though, this VAIO fills the bill.

Staying Connected

SO YOU'VE PICKED the perfect notebook and now you need to hit the road and get online. Where Wi-Fi hotspots leave off, Wireless Wide Area Networks (aka mobile broadband) theoretically pick up. Existing technology theoretically supports mobile-broadband downloads topping 2.4 megabits per second, but your real-world connecting speeds will average between 300 and 700 kilobits per second if you're lucky, with slower uploads. And if a building or a tree blocks the signal, your connection speed can turn to molasses. (By comparison, the new Wi-Fi 802.11n standard scheduled to roll out at hotspots over the next few years offers about 100 mbps.)

"[Mobile] broadband is still shaky, with flashes of quality," says Phillip Redman, an analyst for Gartner. "It's not unusual for the speed to drop to as low as 9.6 kbps."

Now priced at $7 and $10 for a day pass or $30 per month, mobile broadband also costs more than Wi-Fi. The top mobile broadband providers—AT&T (formerly Cingular), Sprint, and Verizon—all offer plans starting at about $60.

Integrated or À La Carte?

Should you buy a new notebook that has integrated mobile broadband, or should you add it via an adapter? Neither setup is perfect. An integrated card, warns Redman, makes it harder to switch carriers later if you're dissatisfied with the service—or if you want to enjoy the same carrier's technological improvements. If your carrier upgrades to a faster network, for example, you'll be stuck with an older, slower card inside your laptop. "Sprint and Verizon are rolling out CDMA-based EvDO Revision A. Revision 0 cards that came out two years ago won't take advantage of that," Redman says.

But IDC analyst Richard Shim tells clients to choose a notebook with an integrated card because it's faster. "The antenna is usually embedded along the top of the screen—the highest point, where the signal is cleaner," he says.

If you do opt for an adapter card, don't worry too much about the type of interface. It doesn't matter which kind of adapter—whether PC Card, USB 2.0, or ExpressCard—you buy, because all of them have more than enough strength to handle broadband's comparatively wimpy throughput.

Picking a Carrier

You're not required to have a voice plan with your mobile broadband carrier, but piggybacking is more convenient and usually cheaper. And for the moment, who will prevail in the race to provide the best data service is still a toss-up.

"It's impossible to say which carrier will have the best coverage at any given time," says Redman. "One week Verizon »

might be better, the next week it's Sprint. Or AT&T might be better, depending on where you're at."

Currently all three carriers offer about the same level of performance. Sprint and Verizon's CDMA (Code Division Multiple Access) 1x EvDO (Evolution-Data Optimized) networks are more widespread than AT&T's UMTS/ HSDPA (Universal Mobile Telecommunications Systems/High-Speed Downlink Packet Access) service, which has been slow to roll out.

Carriers will soon scrimmage over upload speeds, which is good news for mobile professionals who have to e-mail large files. By year's end AT&T is expected to upgrade its service with HSUPA (High-Speed Uplink Packet Access), which introduces the first symmetrical downlink/uplink speeds. In the meantime, the EvDO Revision A service to which Sprint and Verizon are upgrading bumps up download speeds to 1.4 mbps and upload speeds to 500 kbps.

When weighing your options, don't assume that data coverage will be identical to your voice plan's. Just because your cell phone receives a signal doesn't mean your laptop will. For example, Sprint's data service coverage is limited to 70 percent of its voice areas. Also, ask your carrier if unlimited data means just that, or if in fact data is being metered and might result in extra charges if it exceeds a certain limit.

International mobile broadband is likely to be difficult to manage unless you choose AT&T as your provider. Redman recommends instead that you rely on the estimated half a million Wi-Fi hotspots worldwide or that you use a service such as iPass (find.pcworld.com/57908), which patches together mobile broadband coverage from the major carriers for you.

Some cell phones, such as those in Sprint's Power Vision series, can serve as your laptop's mobile broadband modem via a USB cable or Bluetooth, sparing you the cost of an extra card. This approach might make sense if you don't need to use wireless broadband often.

Coworkers who travel together can save their company some dough by taking out a single broadband subscription and then setting up their own hotspot with a cellular router such as Linksys's Wireless-G Router (find.pcworld.com/57909). You just insert the broadband card into the router instead of into your laptop, and a small group of users will be able to connect to the router via Wi-Fi.

Regardless of which carrier you choose, you shouldn't expect to experience nonstop mobile wireless connectivity anytime soon, according to Redman. "One technology can't win; it can't be everywhere at once. Even ten years from now, we won't have one big wireless network that covers us everywhere we go. It will have to be mix-and-match coverage of wired and wireless."

Solid-State Laptops

With prices continuing to drop, flash-based solid-state drives (SSDs) have become viable options for your notebook's primary storage. Moreover, SSDs can now hold 32GB of data, making them large enough to satisfy more than just basic storage needs, and making them at least somewhat competitive with 1.8-inch hard drives, whose storage capacity ranges from 30GB to 80GB. SSDs from companies such as Samsung and SanDisk now appear in portables from Dell, Fujitsu, and Toshiba. But are they really worth your money?

Even after price drops, SSDs still carry a hefty $400 to $500 premium over ordinary hard disks. To see whether that additional cost is justified, we tested three pairs of ultraportable notebooks from Dell and Fujitsu. Each pair was identically configured except that we equipped one unit with an SSD and the other with a typical 1.8-inch, 4200-rpm hard drive.

Inconsistent Advantage

We tested each of the three SSD notebooks against its identical non-SSD counterpart. Two of the notebook pairs, Dell's ATG-D620 ($3015 with SSD, $2815 with an 80GB hard drive) and Fujitsu's LifeBook P1620 ($2578 with SSD, $2029 with a 30GB hard drive), ran Windows XP Professional. The third »

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THE SOLID-STATE-drive-based Dell ATG-D620 (left) and Fujitsu LifeBook P1620.

notebook pair, again Fujitsu's LifeBook P1620 ($2548 with SSD, $1999 with a 30GB hard drive), ran Windows Vista Business.

Our WorldBench 6 Beta 2 tests showed no definite pattern of results differentiating SSD systems from ones with standard hard drives. For example, the two Dell ATG-D620 models, packed with a 2.0-GHz Core 2 Duo T7200 CPU and 1GB of memory, each scored 76 on our WorldBench 6 Beta 2 tests. In contrast, the two Fujitsu LifeBook P1620 units, configured with a 1.2-GHz Core Solo U1400, 1GB of memory, and Windows XP Professional, varied a bit in performance: The SSD version scored 42, while the hard-drive version scored 39.

Interestingly, that performance difference grew more pronounced when we tested the pair of Fujitsu P1620 laptops running Windows Vista Business. The SSD version achieved 36 on our WorldBench 6 Beta 2 tests, while the hard-drive version scored only 30. In particular the Vista-based Fujitsu system with the SSD demonstrated a performance advantage on our Adobe Photoshop CS2 image-manipulation test, besting the hard-drive version by 36 percent.

In contrast to the generally inconclusive WorldBench 6 Beta 2 results, we saw quite decisive performance wins by the SSD models when we ran the six systems through the same file-read-and-write tests we use for our regular hard-drive testing. (The tests consist of reading and writing folders of files, and searching for files on a drive.) On these tests the SSD models bested their hard-drive-based counterparts in 11 out of 12 cases. In the most extreme example, the XP Pro Fujitsu with the SSD outperformed the hard-drive model by 63 percent when reading and writing a 3.06GB file.

Numbers don't tell the whole story for solid-state drives. SSDs also tend to be more rugged than standard hard drives because the NAND flash memory of SSD lacks the moving parts of a hard drive. Drop your notebook, and the data on your SSD will probably be safe. Also, SSDs don't generate heat (as hard drives do), and they don't produce a lot of electromagnetic interference.

Ultimately, with an SSD in your notebook, you'll see a boost in system responsiveness, as well as a positive change in the way the system handles tasks that are drive intensive—activities such as reading data off the drive, returning to active duty out of standby mode, and booting up from scratch.

Into the Future

What will the ultimate laptop of the future look like? Next year's notebooks will have Intel's Penryn processor, which is based on a new 45-nanometer manufacturing process. Penryn will shrink the size of the current 65-nanometer Core 2 Duo processor while boosting speed and improving battery life.

Though an important step, Penryn will provide only an incremental improvement. According to Gartner analyst Leslie Fiering, Penryn will "help keep notebook prices down and improve performance a little more, but it won't be earth-shattering." The ground might move more with the arrival of Intel's first mobile quad-core chips, Core 2 Extreme, due out first in high-end gaming notebooks by the end of this year.

More notebook makers are likely to follow the example of Dell, Lenovo, and Toshiba and implement "roll cage" construction, as well as head-parking technology that protects the hard drive when a notebook is tossed around. Eventually, crash-prone, magnetic, platter-based traditional hard drives will give way to solid-state hard drives. The first solid-state units are making their way into Dell and Fujitsu models such as the ones we tested. Though they top out at 32GB now, their capacity will quickly increase to at least 120GB by next year and will soon catch up with today's magnetic drives. Hybrid drives (magnetic drives with a layer of flash storage) will also help to make notebooks faster and more reliable. »

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"There's an overarching trend in the notebook market for increased durability," says IDC's Shim.

While matte-finish screens are making something of a comeback among people bothered by glare, glossy screens should continue to dominate for their higher contrast and richer-looking colors. LED-backlit screens brighten the picture even more. Already available in some Apple and Sony notebooks, LED-backlit screens are thinner and use less power while delivering noticeably brighter displays. New, vibrant OLED screens with colors "that reach out and slap you" might figure in the distant future, says John Jacobs, an analyst with DisplaySearch, but they're still too expensive to manufacture. Traditional tubular fluorescent backlit screens will be around for a long time to come, with a few improvements; one might be a switch to flat tubes, which spread light more evenly.

By year's end wide-aspect screens will become fully dominant over the traditional "tall" notebook screen. Screen size will top out at 22 inches, predicts Shim, possibly as soon as next year in a Dell or HP gaming portable, but most laptops will continue to have 15.4-inch screens for quite some time.

The jury's still out on SideShow, the new Windows Vista technology that allows laptop makers to put a smaller secondary display on the lid to show incoming e-mail and other information without your having to turn on the system. So far only a handful of manufacturers, including Asus and Toshiba, have introduced units with the display.

Notebooks will soon last longer on a charge, but not because of a new technology such as fuel cells. Laptop makers will stick with lithium ion batteries and work on components that suck less power, according to Kamal Shah, Mobility Enabling Initiative manager of Intel's Mobile Platforms Group.

Finally, though conservative notebook makers have toyed with and discarded bright exterior colors in the past, that diffidence will soon disappear. "A lot of personalization is going on, because the consumer market for notebooks has become such a big force," says Shim.

To wit: Dell is partnering with Skinit.com to enable its customers to put any image they choose—say, a logo or even a photograph they took—on a notebook lid.

Contributing Editor Carla Thornton covers notebooks for PC World. *Senior Products Editor Melissa J. Perenson contributed to this story.*

Bag a Great Carry-On

THE ULTIMATE LAPTOP deserves an equally snazzy bag. These days that means a stylish carry-on that doesn't scream to thieves, "There's a laptop inside! Steal me!" Here are three worthy contenders.

Samsonite's $99 iMobile 360 is a new breed of wheeled laptop bag. It has four wheels instead of two, and they spin 360 degrees so the bag never sticks or balks. (It can be a runaway on sloped surfaces, however.) Because you can push it in any direction, it's much easier to maneuver down airport corridors and even cobbled pathways than a two-wheeler. Two thumbs up, with a warning not to let go of the handle on steep grades or in a stiff wind.

Logitech's Kinetik 15.4 Backpack, $100, is a sturdy but lightweight semihardshell backpack with lots of nice padded pockets, big and small. (I especially liked the quick-access pocket on top for keys and airline tickets.) It has a freestanding design so it doesn't slump over when set down. Though it's designed for 15.4-inch notebooks, there's room enough for the skinny 17-inch MacBook Pro. My only beef: A choice of interior colors besides bright orange would have been nice.

Belkin's $40 SleeveTop is great for casual toting. Made of neoprene, it has built-in handles and when unzipped stays open like a briefcase so you don't have to remove the laptop to use it. It's a bit too bulky to fit inside another bag and the top doesn't close, but it's fine for room-to-room trips, and it protects your lap from being scorched. The three available colors are silver, fluorescent green, and orange.

THE LOGITECH Kinetik 15.4 Backpack (left) can stand up straight, while the Samsonite iMobile uses four wheels.

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Your Data... Anywhere

You never know where or when you'll need to get work done. With these tools and tips, your vital programs and files will always be along for the ride.

BY CHRISTOPHER NULL
ILLUSTRATIONS BY MICK WIGGINS

ULTIMATE MOBILE TECH GUIDE

FOR A WHILE now, it has been possible to carry all of your data with you everywhere you go—but until recently, doing so was a hassle. You had to take the time to install your applications and put every scrap of relevant data on a laptop, or set up remote access to a PC that had to remain on continuously. These days, however, thanks to various new and improved Web services, you can not only store your files online but edit and share them with others there—all from the comfort of your browser. And you don't need a dedicated PC of your own: Any connected computer will do.

We evaluated a wide range of options, from online services like Google Docs & Spreadsheets that combine storage and editing, to approaches that use both online and offline resources to give you more control over where you store your data and how you work on it. We also tell you how to reach your home PC's files using a cell phone, and how to take your desktop with you via a thumb drive. »

and
Anytime

Do Everything
On the Web

IN AN IDEAL world, we could walk up to any computer; punch in a Web address, name, and password; and instantly gain access to all of our applications or to an archive of all our data, ready for editing. And to do this, we wouldn't have to run a single piece of extra software, aside from the browser.

We're on a path leading toward that ideal, but challenges remain along the way. Though online office and collaboration suites are readily available now, they're not yet fully mature.

Reliability and availability continue to be major concerns. Your Internet line or the hotel's Wi-Fi connection can flake out at a moment's notice, interrupting your work and causing data to vanish. Virtually all of these services are in beta, so you can expect a few bugs and random errors. That said, the professionals who manage these services responded quickly to our questions and went the extra mile to address our bug reports.

Most services enforce strict limits on file size, too. Though a 10MB maximum is common, some companies impose far lower limits: Google's ceiling for a text document is a paltry 500KB, for example.

Finally, don't forget that you're working in a Web browser, not an offline app. Large documents will load and refresh slowly, and in most cases you won't get an "Are you sure?" warning if you accidentally try to close the browser window without saving your changes.

The bottom line: Today, hosted application services are great for occasional or emergency use when you're on the road, but we wouldn't rely on any of them as our primary system for storing and editing documents—so you should make sure to keep a copy of your data locally. Still, if you're willing to try, here are the mobile options we found that worked the best and did the most.

Google Docs & Spreadsheets

This plain-Jane addition to the Google empire (docs.google.com) is one of the easiest and most full-featured data and applications hosting services we evaluated. Though it doesn't yet include a presentations editor (one is on the way, we're told), it easily rates as the most trustworthy online host for documents and spreadsheets. It's free, too. All you need is a Google account.

GOOGLE DOCS & Spreadsheets offers perhaps the most reliable and functional set of hosted applications available.

Transferring your data into and out of Google Docs & Spreadsheets is easy. An upload system accepts files one at a time and can export them in such formats as Microsoft Office, OpenOffice, HTML, and PDF. Google even provides a custom e-mail address that you can use for sending text or attached documents (no spreadsheets yet); the system then automatically converts and stores them alongside your other online documents. If nothing else, this arrangement gives you a convenient way to make instantaneous, on-the-fly backups without monkeying around in a browser. (Caveat: The service is in beta form and still has various bugs.) Gmail users can e-mail an online document as text or as an attachment without leaving the Docs & Spreadsheets system.

You can share any document or spreadsheet, and up to 50 people can work on a file at once. Though document changes aren't visible until a user refreshes the browser window, spreadsheets update in real time; this can make for some interesting collaboration scenarios as multiple users add, delete, and overwrite data simultaneously.

Google's editing tools and controls tend toward the rudimentary, and file size is severely limited—500KB for docs and 1MB for spreadsheets. A handy revisions system keeps track of old versions of your files; most competing services lack this killer feature. In addition, each user can store up to 5000 documents and 200 spreadsheets on the service.

If you need broad project management functionality, the multiple-editors-at-once feature of Google Docs & Spreadsheets probably won't work for you. There's no workflow system, no chat or discussion system, and only a basic interface that ties in well with Google's other minimalist properties.

Still, Google Docs & Spreadsheets seems remarkably stable, and its learning curve is friendly. It is arguably the most reliable and complete hosted data and applications service available.

ThinkFree

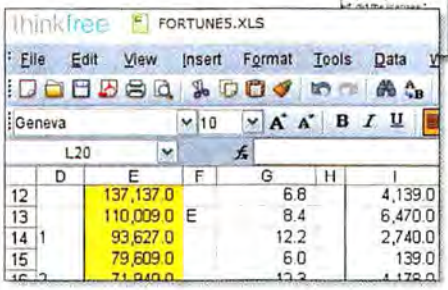
Though the no-cost ThinkFree (www.thinkfree.com) displays Google AdWords on the right side of your screen while you edit word processing, spreadsheet,

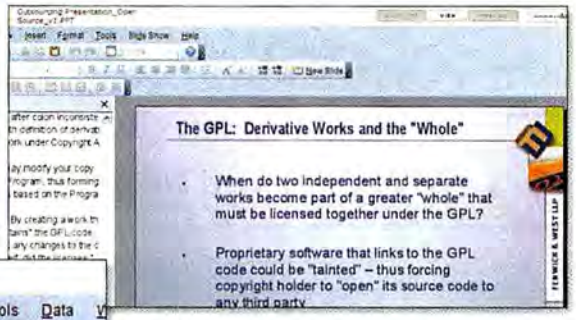
or presentation documents, the ads are fairly nonintrusive and don't narrow your workspace in other respects.

Getting files into ThinkFree is simple. The application's upload system enables you to quickly drag files from Windows Explorer into your browser and then upload them all in one shot. You can download those files just as easily, with a couple of button clicks; a "download all files" feature is in the works.

ThinkFree gives you two ways to edit files. A "quick edit" system lets you perform simple tasks like creating basic tables and changing fonts; it's most suitable for text-only documents. If you need more-advanced options (as most users will), switch to "power edit" mode, which gives you nearly the same level of control over the document as you'd have in Microsoft Word—in fact, the power-edit interface is a near clone of Office. The edit modes available for the spreadsheet and presentation subsystems are similar to those for text files. The presentations module also contains a boatload of clip art for you to use.

THE THINKFREE interface is as close to a clone of Microsoft Office as you'll find in an online app. The service is free, with some Google ads.





Like Google's service, ThinkFree gives you a good way to back up files on the fly. It offers generous storage space of 1GB, and its 10MB individual file size limit is more than enough for even the most complicated, art-heavy presentations. You can store many types of files at ThinkFree—not just data documents—though certain types (such as .exe and .dll) are excluded.

When you choose to share a file with another user, ThinkFree sends an e-mail trigger to the user you're sharing the file with, directing that person to a »

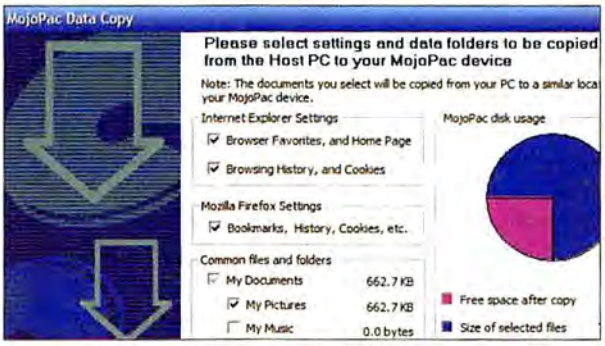
Use a USB Thumb Drive to Pocket Your Desktop

IF YOU DON'T want to depend on the Web to store or edit your data, you have another option: Keep your data and your applications on a thumb drive. USB thumb drives may be a dime a dozen, but they're endlessly useful, especially now that utilities are available to make your drive work as a clone of your desktop, which you can access thereafter via any PC, whether it's Web-connected or not.

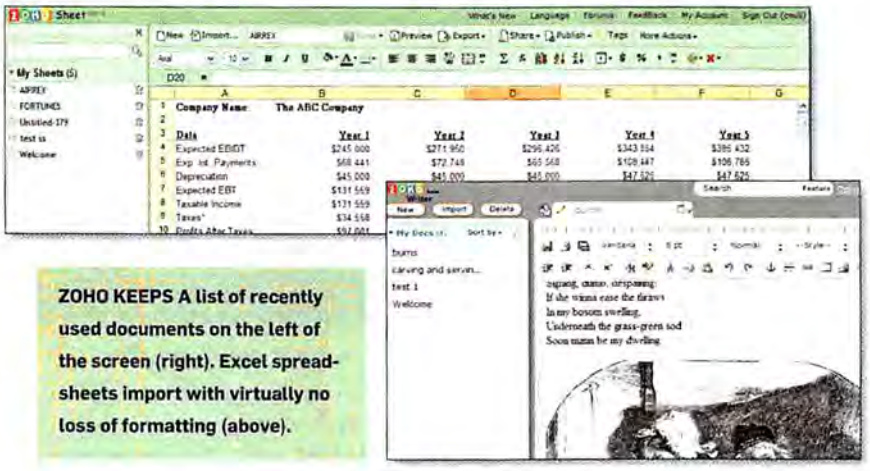
Most impressive is **MojoPac** (www.mojopac.com): It's the truest version of a mobile desktop we've seen to date. After you install MojoPac on your thumb drive and add data, the MojoPac desktop—a custom interface similar to a regular Windows desktop—pops up. Here you can install any Windows application, just as if you were using a regular PC. MojoPac even temporarily transforms your thumb drive into your system's C: drive. Once you have installed an app on the MojoPac-enabled thumb drive, it will work on virtually any PC you plug the thumb drive into. Wrapping your brain around the concept takes some time, but the software works well and is compatible with any USB device, including Apple's iPod. The bad news: The software costs $50 after the 30-day trial expires. You can obtain similar functionality from **Ceedo** ($30, www.ceedo.com), which includes a number of applications within its system. However, you'll need a second $30 piece of software, called Argo (downloaded within the Ceedo program), to run applications—such as Microsoft Office apps and Lotus Notes—that are not part of the system.

Another option is **MigoSync** ($30, www.migosoftware.com), a program that lets you synchronize e-mail, share data files, and replicate the look and feel of your desktop. Unlike MojoPac, however, MigoSync won't let you store and carry any applications that aren't already designed for installation on regular thumb drives.

If you're a do-it-yourselfer, you can manually outfit a thumb drive with the data and the applications of your choice. The result isn't the seamless experience that MojoPac offers, but it works pretty well. Your first stop should be **PortableApps.com**, which is stocked with free programs that will run directly from a thumb drive without requiring a standard Windows installation. If you're a fan of open source, PortableApps provides plenty of choices, ranging from Firefox to OpenOffice to GIMP (the Photoshop alternative)—all of them ready to run from your preferred USB device.



MOJOPAC IMPORTS user data and key preferences like bookmarks so you can fully replicate your desktop via a thumb drive.



ZOHO KEEPS A list of recently used documents on the left of the screen (right). Excel spreadsheets import with virtually no loss of formatting (above).

custom URL where the document can be edited via ThinkFree's standard interface. Invited users can view documents without having their own ThinkFree account, but they must have one to use any of the service's editing functions.

ThinkFree's Java-heavy design is the system's only troubling aspect. Java can cause browser problems, and there is no guarantee that a computer you borrow will happen to have Java installed.

Zoho

In the world of hosted office applications, Zoho (www.zoho.com) may be relatively new (the service debuted in 2005), but it's packed with features. Zoho offers a large and mostly free set of tools designed to replace almost anything you'd have installed on your PC at work. And though some of its tools are still in beta stage, the service mostly succeeds.

Zoho comprises 12 separate modules, including the usual document, spreadsheet, and presentation services, plus a project management module, a chat system, a Web conferencing tool, and even a wiki creator. Using the various Zoho applications is straightforward and simple. Apps load quickly and the interfaces will be generally familiar to any Office user. One exception is the presentations module, which is rudimentary and not very functional.

You can log in to any of the systems with a single Zoho ID, but the services are not entirely connected. In particular, if you want to store all your data online, you may be frustrated by the absence of any central repository for files in Zoho: Instead, documents are sequestered in Zoho Writer, in Zoho Sheet (spreadsheets), or in Zoho Show (presentations). Though you can have multiple applications open in separate browser tabs or windows, having a single place to browse through all of your stuff would be far more convenient. This is possible on a limited scale through Zoho's Notebook applet, which allows you to manage clusters of spreadsheets and word processing files, along with other media. (See our full review of Zoho Notebook on page 90.)

You can invite other users to collaborate on your Zoho documents by using the service's integrated e-mail invitation system. As with ThinkFree, you can share documents via an e-mailed URL. People can view Zoho documents without having to create a Zoho account for themselves, though collaborators will have to sign up to edit files online.

Putting your data into Zoho is easier than getting it back out. An innovative feature lets you install a plug-in for saving any file directly to Zoho from within Word or Excel. You can also use Word or Excel to open documents stored online in the Zoho service without ever visiting the Zoho site (you do have to be online, however). It's a handy way to use the editor of your choice while keeping all of your data online. You can export spreadsheets and documents in various formats, but only one at a time. Worse, the only way you can save a presentation is as an HTML document with an embedded Flash file, which makes it essentially uneditable offline.

Zoho has set a generous size limit of 10MB per file, with no size maximum either for word processing documents or for total storage (though the service will limit total storage to 1GB per customer at the end of its beta run).

Of the services we tested, Zoho did the best job of handling old file formats: We even managed to import some ancient Excel 4.0 files without a hitch; most other services choked on them.

Overall we were pleased with Zoho, despite some early bugs that required the intervention of a Zoho administrator. For instance, when we used an e-mail address as our Zoho user name, Zoho produced custom URLs with @ symbols in them, which won't work on the Web. If Zoho can figure out a way to tie its scattered services together better, it will be a serious contender.

The Best of Both Worlds

ONLINE OFFICE SUITES offer you a one-stop shop where you can both store and manipulate your data. In contrast, various alternatives invite you to use a combination of online and offline resources to keep tighter control over your data and applications.

There are plenty of good reasons to use a hybrid approach. You may not be comfortable with the security risk of storing data online, or you may dislike the feature set, interface, or slow response times of some of the online app services. And since it just isn't possible to

remain connected to the Internet all the time, you need to have options that don't depend on it.

WEBOFFICE'S well-organized dashboard helps you manage your online projects and your people.

Online Storage, Local Editing

One popular and easy way to take advantage of the Internet is to use it exclusively for raw data storage. When you store data online, it is always backed up automatically. And giving other users access to your files with these services is easy. You can send the files via e-mail, share folders with other users within the interface, or post the files to a public Web site that anyone working from a Web-connected computer can link to.

Unlike hosted application services, online storage services like **Xdrive** (www.xdrive.com) don't care what kinds of files you store on their sites, giving you more freedom to stash whatever you want there. Xdrive's Windows Explorer plug-in lets you access your online files from your desktop directly, without ever firing up a browser. The service provides 5GB of free storage, upgradable to 50GB for $10 a month. Microsoft is prepping its own service, Windows Live Folders, which should integrate seamlessly with Windows Vista; this service launched in late June in limited beta to a few thousand users; Microsoft says that it will soon extend the beta to more users.

For complicated scenarios—especially ones where you may need to share data with other users—consider three sites: **Basecamp** (www.basecamphq.com), **WebOffice** (www.weboffice.com), and **Central Desktop** (www.centraldesktop.com). All three sites provide advanced project-management and collaboration systems designed to give users control over large-scale projects, with features like check-out of hosted documents, to-do lists, calendars, internal chat systems, and discussion boards. Prices for these services depend on the number of users or projects, not on tiers of functional- »

Dial In to Your Data From Any Web-Enabled Cell Phone

BLACKBERRY AND TREO owners have long known the joy and the pain of having access to e-mail and critical documents at all times.

But you don't need to purchase a fancy PDA phone to get in on the action. If your cell phone has any Web browsing or text messaging capabilities, you can check your e-mail while you're on the road and you can retrieve files from your home computer.

SOONR LETS YOU select the files you wish to share from your desktop, and then access them via cell.

A few new services aim to bridge the gap between cell phone and PC. One of the most promising of these is the free **SoonR** (www.soonr.com), which may be the most full-featured application in this group. SoonR turns any Web-capable phone into a remote-access tool. Just install the compact SoonR application on your PC and leave it running in the system tray when you head out. SoonR interfaces with your inbox and gives you access to files in your My Documents folder, or in any other folder you care to share. SoonR also works remotely with any PC desktop search system you use.

Once you've found your file or e-mail, SoonR displays it on your cell phone in miniature. If you use a regular cell phone, you'll have to do some scrolling, panning, and zooming to see everything; on a larger smart-phone screen, however, SoonR displays very nicely. You also can elect to e-mail the file to another, bigger device, which might be preferable when viewing things like PowerPoint slides.

For users with modest needs, a number of services allow basic cell phones to access any e-mail account. **TeleFlip** (www.teleflip.com) lets you forward your home or work e-mail to your cell phone. Simply sign up for the free service, tweak your e-mail account as requested, and you're in business. Messages sent from individuals you specify (and only those you specify) arrive in the form of short, standard text messages. Don't expect much: Messages may not exceed 120 characters, and (obviously) attachments are not allowed. The service breaks larger messages into pieces; you set the maximum number of pieces permitted before TeleFlip should truncate the rest.

Of course, even though these services are free, text and data service charges from your cellular carrier still apply. And if you do not have an unlimited data or texting plan, these fees can add up quickly. Also, the faster your wireless service (EvDO and HSDPA services are speediest), the better.

TELEFLIP ALLOWS you to control when and how e-mail will be delivered to your cell phone.

BEHIND THE MESSY interface of iNetWord is a powerful editing system that can output PDF files, among other neat tricks.

ity. Prices can reach $700 a month for big operations (to get WebOffice's 100-user license). At the low end, Central Desktop's free basic service plan (25MB of storage for five users) delivers all the functionality of more expensive plans. A similar five-user plan in WebOffice costs $60 per month. Basecamp's pricing is based on the number of projects: Managing five active projects with the service costs $24 per month.

Local Storage, Online Editing

Conversely you can keep all your documents on your hard drive but edit them using the online apps you need. That way you retain a safe local copy of your data and don't need to rely on the apps loaded on whatever PC you have to use when you're away from your home base.

You can use this strategy with any of the hosted service sites mentioned back in the first section of this story, uploading documents as needed. Alternatively, you can use services that specialize in single applications, such as word processing, like iNetWord and gOffice.

Though it offers only a word processor, **iNetWord** (www.inetword.com) is so feature-rich that even sophisticated users should find that it satisfies their needs. You also can easily add and edit tables, images, and special characters.

The service's unusual interface takes a little getting used to, but soon reveals itself to be quite useful. In addition to the toolbar across the top, it has two Explorer-like file lists on the left side of the screen. Here you can open documents, insert and manage pictures, and share various folders with other registered iNetWord users. Though iNetWord isn't immediately intuitive, it's one of the few online editor services that offers a full, easy-to-manage folder hierarchy.

You can upload files in Word format and export them as Word or PDF files. A killer feature for power users: FTP access to your directory lets you move files around freely. iNetWord also keeps track of old versions for you, automatically.

The service's storage capacity poses a chronic problem, however. Despite the absence of any listed file size limits, we had trouble getting anything larger than about 2MB into the system. The company has since raised the limit to 10MB, but total storage capacity remains limited to a too-small 25MB.

iNetWord is relatively lightweight and mostly bug-free—praise that we can't bestow on many of the tools in this category.

Another option, the venerable online word processor **gOffice** (www.goffice.com), is actually a Web version of the LaTeX typesetting tool, wrapped in a simple-to-use package. If you want to create a PDF out of some text and then apply a custom letterhead to it, gOffice may be just right for you. The app fails to include one import feature, however: To get your data into gOffice, you have to copy it and then paste it into a browser window.

A variety of more-specialized online apps have appeared in recent years. For photo editing, you can't beat **Picnik** (www.picnik.com); and for online video editing, **Jumpcut** (www.jumpcut.com) is worth checking out. (See our review of Picnik at find.pcworld.com/57805.)

Remote Access to Data and Apps at Home

Yet another approach that remains viable is to leave all of your data on your system at home, and simply access that PC remotely when you need to.

The best free service going is **LogMeIn** (www.logmein.com). Install the software on the host PC (the system where your data resides), and leave the machine on when you're away. To access that PC from any other computer, just visit the LogMeIn site, enter your user info, and select the system that you want to connect to. An identical version of that computer's desktop will appear in a window, giving you full control over the PC, as if you were sitting in front of it. LogMeIn offers various levels of service, including a Pro version that costs $70 per year per PC or $13 per month per PC.

ONLINE WORD processor gOffice comes preloaded with various stationery and other templates.

GoToMyPC (www.gotomypc.com) is a similar and perhaps better-known alternative to LogMeIn. We found the two services practically identical except in price. GoToMyPC sells a single level of service, with prices starting at $20 per month for access to one PC, graduating upward based on the number of additional computers you want to connect to. LogMeIn offers virtually the same capabilities in its free version.

Christopher Null is a veteran journalist who covers technology topics daily on his blog at find.pcworld.com/56216. ●

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COLLEGE NOTEBOOK BUYING GUIDE

ASUS Recommends Windows Vista™ Ultimate

G2

PC World's Desktop Replacement Best Buy

PC WORLD
Best BUY
August 2007
G2P-7R009C

"If your dream laptop is a desktop replacement that doubles as a lights-flashing gaming machine, look no further." -PC World, Aug 2007

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Centrino Duo
Core™2 Duo inside™

MORE FOR YOUR MONEY
Selecting a notebook for college, work and beyond.

ALL AROUND SERVICE
Learn about ASUS's unmatched service & support program.

SURVIVING EVEREST
Which notebook brand will make it back alive?

Go to find.pcworld.com/57631

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F5R

Great Student Notebook with Brilliant Screen and ASUS Quality

You'll be surprised at what the attractive F5R can deliver for under $1,000. A beautifully enhanced, zero bright dot screen, a 1.3 megapixel webcam, and the best standard notebook warranty in the industry just begin to tell the story.

F5R-B1

- Intel® Core™ Duo T2130 1.86 GHz
- Genuine Windows Vista™ Premium
- 15.4" 1280 x 800 widescreen display
- 120 GB hard drive, 1 GB DDR2 memory
- 1.3 megapixel webcam, WLAN 802.11 B/G, Bluetooth V2.0+EDR, DVD/RW dual layer

MSRP: $899

1. Easy grip texture around hinge 2. Brushed metal details
3. Swivel webcam 4. Extensive connectivity

Get More for the Money

Want a great college notebook? On a budget? ASUS notebooks provide outstanding value in terms of quality, features and support. ASUS' **F5** and **F3** Series notebooks (above) are two student-friendly notebooks that take the concept of great value even further.

Priced Right: The **F5R** offer features that you'd expect in more expensive notebooks, like Color Shine and Crystal Shine display technology for high end visual satisfaction, and the best standard notebook protection plan in the industry. Higher end **F3** notebooks add incredibly detailed screens and powerful graphics engines for stunning DirectX10 gaming and multimedia.

::: campus companion :::

perfect for your college lifestyle

campus companions

digital dorm on the go

F3

Plow Through Multimedia and Games with a Core2 Duo Processor & Dedicated Graphics Engine

F3E-A1
- Intel® Core™2 Duo T7100 1.80 GHz
- Genuine Windows Vista™ Home Premium
- 15.4" Color Shine widescreen display (1280 x 800 WXGA)
- 120 GB hard drive, 1 GB DDR2 memory
- 1.3 megapixel webcam, WLAN 802.11 A/B/G, Bluetooth 2.0+EDR, 8x Super Multi DVD/RW dual layer, Li-ion 6 Cell, 6.5 lbs.

MSRP: $1,199

Upgrade to a better processor and graphics, higher resolution, and more features.

F3SC-A2
- NVIDIA® GeForce® 8400M G 128 MB
- 160 GB hard drive

DGE

MSRP: $1,319

F3SV-B2
- Intel® Core™2 Duo T7500 2.20 GHz
- 1680 x 1050 WSXGA+ display
- NVIDIA GeForce 8600M GS 256 MB
- 160 GB hard drive, 2 GB DDR2 memory with 1 G Turbo Memory
- 1.3 megapixel webcam with 240° swivel, DVD/RW with Lightscribe, fingerprint authentication and TPM, WLAN 802.11 A/B/G/N

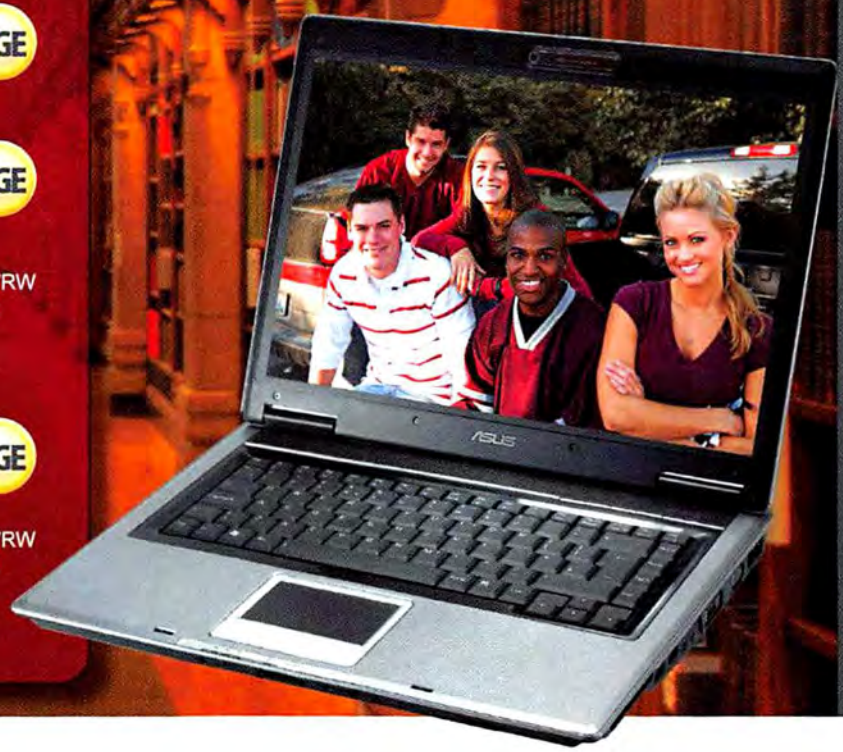
DGE

MSRP: $1,619

F3SA-A1
- Intel® Core™2 Duo T7500 2.20 GHz
- 1680 x 1050 WSXGA+ display
- ATI HD2600 512 MB
- 160 GB hard drive, 2 GB DDR2 memory
- 1.3 megapixel webcam with 240° swivel, DVD/RW with Lightscribe, fingerprint authentication and TPM, WLAN 802.11 A/B/G/N

DGE

MSRP $1,699



See Those Who Matter More Often:

Contacting family thousands of miles from home? Socializing with someone in the next dorm? No matter the distance, webcams make staying in touch much more personal. They are also useful for photo-documenting your academic achievements or adding life to your blog journal. ASUS integrates this handy tool into many of our notebooks, including the **F5R** and **F3** Series notebooks.

Unbeatable Protection: Each ASUS notebook in this catalog including the F Series come with the best standard notebook coverage in the industry. **ASUS 360** with 20224 protection. **ASUS 360** gives you a 2 year global warranty, a zero bright dot LCD guaranty, two-way FedEx standard overnight shipping to and from ASUS in the event of a problem, and 24/7 tech support (excluding holidays).

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G2P-7R009C
August 2007

PC WORLD
Best
BUY

G2S 17" Dream System for Gaming and Multimedia

DGE

The G1's big brother offers all the unique features and top specs of the G1, with a style all its own. An LCD with dual back lamps provides unsurpassed resolution and clarity. Paired with an optional Blu-ray DVD player, you'll enjoy multimedia like never before.

G2S-A1
- Intel® Core™2 Duo T7500 2.20 GHz
- Genuine Windows Vista™ Home Premium
- 17.1" Color Shine widescreen display with dual lamp high brightness & 8 ms response time (1920x1200 WUXGA)
- NVIDIA GeForce 8600M GT 256 MB DDRIII
- 160 GB hard drive, 2 GB DDR2 memory
- WLAN 802.11 A/G/N, 1.3 megapixel webcam, Bluetooth V2.0+EDR, gaming backpack and gaming mouse, DVD/RW dual layer with LightScribe, Audio DJ

MSRP: $2,099

The Best Gets Even Better

G2S-A3
- Genuine Windows Vista™ Ultimate
- 200 GB hard drive 7200 RPM
- Blu-ray disc drive

MSRP: USD $2,899

Work Hard, Play Hard

You study hard at school. Make sure you balance your efforts with some rewarding play time. ASUS' gaming series notebooks offer the very best in 3D gaming and video entertainment.

Multimedia Heaven: Your **G2S** experience starts with a jaw-dropping 17" screen with 1920 x 1200 resolution, a level of detail most people have never seen. Dual back lamps provide brilliant clarity and brightness, and an optional Blu-ray DVD player lets you take full advantage of the LCD for a brand new level of multimedia enjoyment. LCDs on the **G1S** and **F8S** offer a similar visual experience with 1680 x 1050 LCD resolution and powerful NVIDIA 8600M GT graphics engines.

Unique Gaming Features and Style: The **G2S** and **G1S**' unique flashing sidelights, gaming hotkeys, and programmable OLED secondary screens provide a unique and unmatched gaming experience on a notebook.

::: digital dorm :::

your center for work and play

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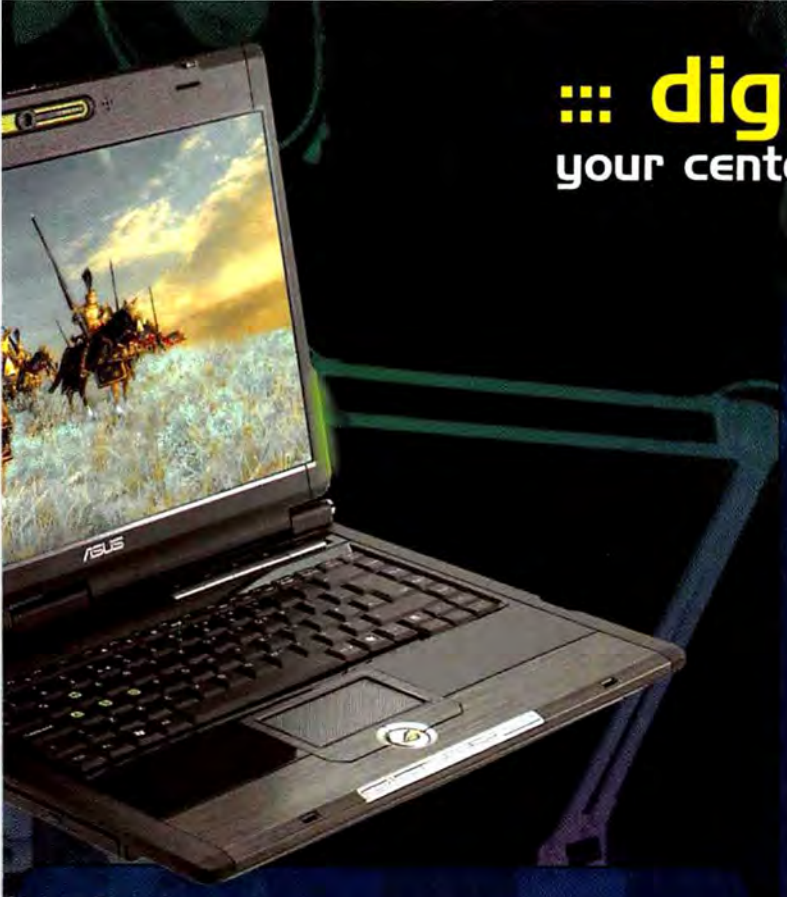

F8S Power and Style for Work or Play

The F8 looks as sharp as an Armani suit, but it knows how to loosen it tie. It gives you all the power you need for the most demanding multitasking at the office, or the most thrilling DirectX 10 gaming and multimedia at home.

F8SV-A1

- Intel® Core™2 Duo T7500 2.20 GHz
- Genuine Windows VistaTM Home Premium
- 14" Color Shine widescreen display (1440 x 900 WXGA)
- NVIDIA GeForce 8600M GT 256 MB
- 160 GB hard drive, 2 GB DDR2 memory
- 5.7 lbs., 13.6" x 9.8" x 1.5"
- WLAN 802.11 A/B/G/N, 1.3 megapixel web-cam with 240° swivel, Bluetooth V2.0+EDR, DVD/RW dual layer with LightScribe, scratch resistant In-Mold Decoration (IMD)

MSRP: $1,599

G1S Designed for the Ultimate Mobile Gaming Experience

Only a system built from the ground up for gamers could be this much fun. The enormously powerful. G1 sets a new standard with gaming features and alluring stealth-styling that no one else has.

G1S-A1

- Intel® Core™2 Duo T7500 2.20 GHz
- Genuine Windows Vista™ Home Premium
- 15.4" Color Shine widescreen display (1680 x 1050 WSXGA+)
- NVIDIA GeForce 8600M GT 256 MB
- 160 GB hard drive, 2 GB DDR2 memory
- WLAN 802.11 A/G/N, 1.3 megapixel webcam, Bluetooth V2.0+EDR, gaming backpack and gaming mouse, DVD/RW dual layer with LightScribe

MSRP: $1,899

G Series notebooks are designed to look like nothing else out there. The **G1S**' stealth-styling and glossy surfaces make your heart race, and the **G2S**' high-tech metallic appearance with glossy finish and in-mold decoration is sure to cause a commotion at the next LAN party. Tweak the resolution and let the frame rates fly!

Dedicated Graphic Engine: Enjoy next-generation DirectX10 powered 3D entertainment, armed with a Dedicated Graphics Engine (DGE). A DGE unlocks fluid Windows Aero Interface effects, and offloads HD-DVD decoding from the CPU, freeing up your computer to handle more tasks as you enjoy your favorite movies. Look for the yellow DGE icon on the **G2S**, **G1S**, and **F8**, and throughout this buying guide.

intel Centrino Duo Core™2 Duo inside™

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F9S 12.1" Portable Power, Serious Security

This ultra-light notebook provides you with a long battery life, advanced security, a webcam and a numeric keypad.

DGE

F9S-A1
- Intel® Core™2 Duo T7300 2.00 GHz
- Genuine Windows Vista™ Home Premium
- 12.1" Color Shine widescreen display (1280 x 800 WXGA)
- NVIDIA GeForce 8400M G 128 MB
- 160 GB hard drive, 1 GB DDR2 memory
- 4.2 lbs., 12.1" x 8.7" x 1.2"
- 1.3 megapixel webcam with 240° swivel, Bluetooth V2.0+EDR, DVD/RW dual layer, WLAN 802.11 A/B/G, fingerprint authentication

MSRP: $1,299

W7S 13.3" Thin & Light with High End Graphics

At 4.3 lbs., the W7S is so thin, light, and attractive that you'll want to take it everywhere you go. NVIDIA 8400 graphics make seamless video playback and 3D gaming a reality, and an integrated 1.3 megapixel webcam helps you stay close to those who matter.

DGE

W7S-A1W (white) W7S-A1B (black)
- Intel® Core™2 Duo T7300 2.00 GHz
- Genuine Windows Vista™ Business
- 13.3" Color Shine widescreen display (1280 x 800 WXGA)
- NVIDIA GeForce 8400M G 128 MB
- 120 GB hard drive, 1 GB DDR2 memory
- 4.3 lbs., 12.3" x 8.8" x 1.2~1.4"
- 1.3 megapixel webcam, Bluetooth V2.0+EDR, DVD/RW dual layer with LightScribe, WLAN 802.11 A/B/G/N

MSRP: $1,449

Connect, Communicate, or Work Anywhere

You need your notebook to take notes in class, surf the net in the library, and listen to your MP3s on the bus. ASUS offers several super-light models that let you bring it all with you for easy access anywhere. Our broad range of 12" and 14" models offer faster connectivity, longer battery life, and weights as low as 4.2 lbs. for maximum mobility.

Faster Connections and Data Transfer:

Enjoy integrated wireless for connectivity almost anywhere you take your notebook. Check out our **W7S** and **A8** models with the latest Draft N wireless allowing connection speeds up to 50 times faster than the previous generation. Our portable notebooks also offer Bluetooth with EDR 2.0 for speedy data sharing between cell phones, PDAs and your notebook.

on the go

notebooks that move with you

R1E 13.3" Core2 Duo Tablet with Handwriting Convenience

Take notes or express your ideas with the convenience of using a pen. The R1 from ASUS lets you do it all on a 13.3" screen that gives you the room you need. Rest easy with a fingerprint scanner and a Trusted platform module (TPM).

R1E-A1

- Intel® Core™2 Duo T7300 2.00 GHz
- Genuine Windows Vista™ Business
- 13.3" Color Shine widescreen display (1280 x 800 WXGA)
- 120 GB hard drive, 1 GB DDR2 memory
- 4.2 lbs., 12.5" x 9.1" x 1.4"
- Convertible screen, handwritten input support, WLAN 802.11 A/B/G, Bluetooth V2.0+EDR, DVD/RW dual layer, fingerprint authentication and TPM, hot swappable module bay

MSRP: $1,699

A8S 14" Incredible Graphics in a Thin-and-Light Design

The A8's cutting edge graphics bring a new standard of visual experience to the mobile user. See twice as much detail as you can on a standard display.

DGE

A8SC-A1

- Intel® Core™2 Duo T7100 1.80 GHz
- Genuine Windows Vista™ Home Premium
- 14" Color Shine widescreen display (1280 x 800 WXGA)
- NVIDIA GeForce 8400M G 128 MB
- 160 GB hard drive, 1 GB DDR2 memory
- 5.25 lbs., 13.2" x 19.6" x 1.37"~1.46"
- Built-in webcam, WLAN 802.11 A/G/N, Bluetooth V2.0+EDR, DVD/RW dual layer

MSRP: $1,299

Access on the Go: Jot down class notes and access data with the ease of using a pen! Our **R1** series offers stylus input, which allows ergonomic stylus input and automatically converts your writing to text. The tablet mode makes it easy for math and science students to write formulas or sketch complex molecular structures.

Stay Unplugged: All ASUS notebooks, including the four thin-and-lights featured above, come with **Power4 Gear+**, which lets you stay unplugged longer. By intelligently regulating your notebook's power usage, Power4 Gear+ extends your battery life by up to 25% -Which means extra juice for those lectures and group projects in the library.

intel Centrino Duo Core™2 Duo inside™

ASUS Quality Shines from World's Highest Peak

ASUS notebooks become the world's first to reach the top of Mount Everest!

At 6:26AM on May 24th, 2007, ASUS notebooks accompanied the Chinese Mountaineering Association on their expedition to the peak of Mount Everest, 8,844m above sea level. ASUS notebooks have performed flawlessly in outer space, the Amazon, the North and South poles, and the Path of Hsuan Tsang. Now ASUS sets a new world record for notebook computers at extreme altitudes, with the first notebook to reach the top of the world's tallest mountain.

8844.43m

Yongfeng Wang and his personal companion, an U5 ASUS notebook, successfully reach the peak of Mount Everest.

6500m

Under extreme storm conditions as low as 30 degrees below zero, and oxygen levels that are 1/3 of those at ground level, the mountaineers conquer the world's most severe conditions with ASUS notebooks. ASUS quality shines at the top of the world, and ASUS notebooks become the world's first to reach the top part of Mt. Everest!

7646m

At 7,000 meters above sea level, the hike tests the physical strength of the mountaineers, and the toughness of the notebooks. The rock solid ASUS notebooks aced the test and played a crucial communication role between the mountaineers and the outside world.

5200m

"Other people's upper limit is our starting point."

The mountaineers' camp is located at an altitude of 5,200 meters above sea level. Yongfeng Wang, the Chief Officer of the Chinese Mountaineer Association and his teammates are about to take the ultimate challenge: ascending to the top of the world's tallest mountain. They will depend on ASUS notebooks for communication and data transmission. Another well-known brand's laptops were present but could not boot up.

Find ASUS Notebooks here:

Agear Notebooks www.ageamotebooks.com	**Central Computer Systems** www.centralcomputers.com	**Excaliber PC** www.excaliberpc.com	**PC Club** www.pcclub.com	**RCS** www.rcsnet.com	**Canada Computers** www.canadacomputers.com
Alice Computer www.aicecomputer.com	**Computer Connections** www.paconnect.com	**GenTech Computers** 1toppc.com	**PC Connection** www.pcconnection.com	**Star Tech Inc.** www.stipc.com	**Lu Computers** www.lucomputers.com
Best Buy www.bestbuy.com	**Computer HQ** www.computerhq.com	**Laptop Authority** www.laptopauthority.com	**PC Mall, Inc.** www.pcmall.com	**Target** www.target.com	**Memory Express** www.memoryexpress.com
BTO Tech www.btotech.com	**Data Vision** www.datavis.com	**Micro League Inc.** www.microleague.com	**PC Portable** www.baynotebook.com	**Xotic PC** www.xoticpc.com	**NCIX** **www.ncix.com**
Buy.com www.buy.com	**Dynamism** www.dynamism.com	**NewEgg** www.newegg.com	**Portable One** www.portableone.com	**Viewmicro** www.viewmicro.com	**Pacific Notebooks** www.pacificnotebooks.com
CDW www.cdw.com	**eCost.com** www.ecost.com	**PC Buzz** www.pcbuzz.com	**Proportable** www.proportable.com	**ZipZoomFly** www.zipzoomfly.com	**PC Village** www.pcvonline.com

Find ASUS Notebooks in Canada:

For more information visit usa.asus.com/pcworld

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Buy and Cell

BY GRACE AQUINO

ULTIMATE MOBILE TECH GUIDE

Today's wireless phones? **Cool.** Shopping for them? **Complicated.** Here's what you need to know about carriers, plans, data networks, contracts, and more. »

ILLUSTRATION: MARC ROSENTHAL

Shopping for a new phone can be fun—but it can also be exhausting and frustrating. That's because picking a phone is just the start of the buying decision. You also have to settle on which carrier or cell phone service to go with, where to shop, and which voice and data services to choose. Do you get better deals online, in a store, or over the phone? Is it always a good idea to sign a contract to get the best price on a new handset? Who should consider getting an unlocked phone, and where can you find such phones? For the facts, read on.

Empty Promises

Even savvy shoppers can get caught in a tangle of conflicting wireless carrier offers. Susan Lewis, a quality assurance engineer from Monroe, Michigan, says that when she tried to get a local Verizon Wireless store to match a handset deal she saw on the carrier's Web site, the sales rep offered instead to give her a special price—50 percent off—on some accessories she didn't want.

Lewis ended up buying from a phone sales representative who promised to match the Web site's offer. But when the bill arrived, she saw that the company had not applied the incentives that she had been promised—namely, free activation and overnight shipping, along with instant rebates.

"When I went through telesales, I thought things would go smoothly," Lewis says. "The sales rep sounded very nice and reassuring. But when all was said and done, he caused even more problems. He was negligent either by omission or commission."

After Lewis complained, Verizon reversed the unexpected charges, but she remains disappointed. "I felt like I got a lot of hollow promises," she says.

As Lewis discovered, the deal you get often depends on where you shop—and the wealth of options can be overwhelming. But with research and planning, you should be able to beat the system and find the best deal.

Know the Networks

Before you start shopping for a handset, consider your cell phone service. Are you happy with your current carrier or contemplating a switch? Your handset and service options depend on what the cell phone company offers or permits (for example, you can obtain an iPhone only from AT&T; browse to find.pcworld.com/57885 for our comprehensive iPhone coverage, and also see our hands-on product review on page 70).

Even if you can purchase a handset from a third party, your choices will at least be limited to phones compatible with your mobile operator's network.

U.S. services rely on two families of cellular network technology nationwide. Sprint and Verizon use CDMA and its faster progeny—1xRTT, EvDO, and EvDO Rev A. AT&T and T-Mobile work with GSM/GPRS and two speedier upgrades, EDGE and UMTS/HSDPA. (See "Mobile Broadband" on page 130 for details on the various technologies' speeds and brand names.)

Of the two, GSM/GPRS is a little more flexible because all service and subscriber information is stored on a small, removable SIM (Subscriber Identity Module) card. In theory, you can switch carriers simply by replacing one service's SIM card with another's; conversely, you should be able to switch handsets by slipping your current SIM card into a new phone.

In practice, however, a number of GSM carriers—including AT&T and T-Mobile—use software that locks a handset to a specific SIM card. To use a different SIM card, you must unlock your handset—a process that usually involves entering a code that you obtain from your carrier.

In some cases, a GSM carrier will help you unlock your phone if you have been a subscriber for a certain period of time. For instance, T-Mobile users can unlock their phone after 90 days, though the company says that an unlock code isn't available for all cell phones.

Some mom-and-pop cell phone shops and Web services will unlock certain GSM

PRICE CHECK

BlackBerry Curve

- **$45** at Amazon.com with 2-year, $40/month voice and $30/month data plan.
- **$100** at Newegg.com with 2-year, $60/month voice plan.
- **$300** at AT&T with 2-year, $50/month data plan ($100 mail-in rebate available).
- **$350** at eBay, unlocked version.

Prices are as of 6/28/07.

ILLUSTRATION: MARC ROSENTHAL

SUSAN LEWIS HAD to call repeatedly to get Verizon's telesales operation to deliver on such promised deal sweeteners as rebates and waived activation fees.

PHOTOGRAPH: BLAKE DISHCHER

phones for a fee. Another option is to buy an unlock code from sites such as Mobile Unlock, TravelInsider.com, and UnlockToTalk—or if you're lucky, you might find an unlock code on a forum by running a search for your particular model: "Nokia 5300 unlock code," say.

Alternatively, you can seek out a new, unlocked handset from a third-party vendor (more about that later).

CDMA phones don't use SIM cards. Rather, they must be activated by the carrier. These handsets usually have firmware that permits activation only by a specific carrier: There's no easy way to reprogram them to work on a different carrier's network.

Network services vary by location. So if, for example, you care about having high-speed data services, you'll want to check out coverage maps for different carriers.

If possible, you should do some reality checks on those maps, perhaps by borrowing a friend's phone. After all, there's no point in purchasing a high-speed handset if the carrier's network doesn't extend to the places where you intend to use it.

Help With Handsets

Once you have selected a carrier or have decided that your choice of handset will determine your carrier, you are ready to start looking at handsets. To get a sense of what's available, read editorial and user reviews, including our *Top 10 Cell Phone-PDAs* chart (find.pcworld.com/57941) and our Cell Phones & PDAs Info Center (www.pcworld.com/ic/pda). For general guidance on features, consult "How to Buy a Cell Phone" (find.pcworld.com/57889). Another great resource is PhoneScoop's Phone Finder (find.pcworld.com/57803), an online tool that generates a list of cell phones that match your stated preferences.

PRICE CHECK

Motorola Krzr K1 (GSM)/K1m (CDMA)

- **$100** at Verizon with 2-year, $40/month voice plan.
- **$130** at Sprint with 2-year, $30/month voice plan ($50 rebate available).
- **$150** at T-Mobile with 2-year, $30/month voice plan ($50 mail-in rebate available).
- **$250** at AT&T with 2-year, $40/month voice plan ($50 mail-in rebate available).

Prices are as of 6/28/07.

Where to Shop

You can buy cell phones just about anywhere these days, from 7-Eleven stores to online shops to vending machines at airports. Where will you get the best deals? (Well, certainly not from an airport vending machine...)

I did some comparison shopping on the Web, at a few local retailers, and over the phone. The best place to start is with an online pricing engine, such as DealTime, Google Product Search, MSN Shopping, Pricegrabber.com (*PC World*'s pricing engine), and Yahoo Shopping; use the engine to check out sellers and estimated prices for the phone models that you're interested in.

For the best deals and the widest selection, online stores generally beat brick-and-mortars and phone-order systems hands down. Sites such as Amazon.com, eBay, and, yes, the carriers' own Web outlets, consistently offered low prices. To get in on the really great bargains, though, you must commit to a service plan (typically for two years), either as a brand-new customer or by renewing an existing contract.

For instance, I found the Samsung BlackJack on Amazon.com for a penny! (At this writing, it costs $175 on AT&T's Web site.) To get Amazon's price, »

you must sign a two-year AT&T Wireless account with both voice and data plans, at a minimum rate of $80 per month, excluding taxes and other fees. And if you break the contract, Amazon will automatically charge you $250 to cover the cost of the phone.

Also, the carrier must have network coverage in your area: When you place an order, the first thing Amazon (or any other vendor) asks for is your zip code, so you'll know immediately whether you qualify for service.

You can find similar deals on eBay, if you have the time to go through multiple listings. Review a seller's feedback record. If something goes awry, you'll have to convince either your credit card company or the PayPal service to reverse the charge—an inconvenient hassle.

Buying from a carrier provides more peace of mind. You have direct access to customer service and a better guarantee on the equipment if something goes wrong. You can easily walk into a carrier's retail store or call customer service for help from a human being.

Elusive Tech Support

Amazon and other online retailers back their products, too, but sometimes you must jump through hoops to get tech support, and you rarely have access to help from another human being.

Amazon, for example, does not readily provide its customer service phone number. (That number, in case you ever need it, is 800/201-7575.)

Amazon shoppers should also note whether the seller is Amazon itself or a third-party merchant: Policies, support, and contract terms may differ.

If you want to hold an actual phone rather than just view an image, visit a carrier's brick-and-mortar store, a retail chain such as Best Buy or Radio Shack, or a mom-and-pop cell phone shop.

"I may buy online, but I go into stores so I can touch and play and ask questions," says Michael B. Barnum, a computer programmer from the Albany, New York, suburb of Niskayuna.

Barnum, 49, says shopping in person minimizes the chance that he'll order a new handset, wait two days, and pay shipping charges for a product that doesn't live up to his expectations. »

Cell Phone Services for the Young, for Parents, and for Frugal Callers

IF YOU WANT a cell phone service that lets you track your friends or kids, or that specializes in cool phones for messaging and multimedia, you might consider a specialty carrier. Companies such as Boost, Disney Mobile, Helio, and Virgin Mobile target niche types of customers with services and handsets that set them apart from national operators.

These carriers are known as Mobile Virtual Network Operators (MVNOs) because they don't own their own network infrastructure; instead, they lease network capacity from the national carriers (Sprint Nextel is the most popular lessor). Many MVNOs provide pay-as-you-go or prepaid services to a mostly youthful clientele.

Boost Mobile, for example, is a pay-as-you-go service. Its most unusual feature is Loopt, a technology that lets you track friends who are Boost customers themselves (if you and those friends own GPS-equipped phones). Boost also supports Nextel's reliable walkie-talkie feature. Other MVNOs deliver similar push-to-talk service, but Nextel's implementation is the most stable.

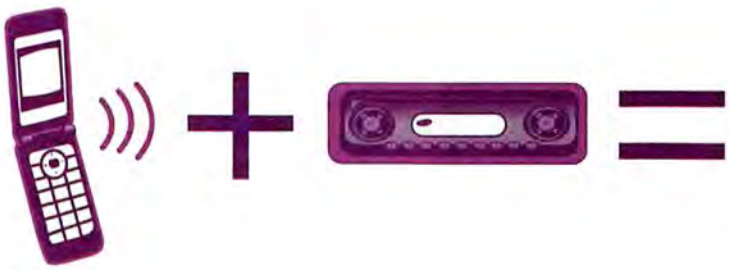
Like Boost, Virgin Mobile uses Sprint's network and caters to a young crowd: Its Web site is filled with offers and news about ring tones, games, graphics, and the like. Disney Mobile, another service on Sprint's network, provides services and phones that are designed with families in mind. Its handsets include a GPS locator that lets parents and kids track each other's physical location. In addition, robust parental controls enable moms and dads to specify what times their kids can and can't use the phone, and even whom they can call or text-message.

Helio is all about Web services and hip handsets. It's the first service in the United States to offer MySpace support on its phones, and its GPS handsets let users upload photos and videos with GPS tagging. Like some other MVNOs, Helio operates on Sprint's network.

If you do decide to go for one of these specialty cell phone services, however, note that you can't count on enjoying the financial and service stability of the major carriers. Amp'd Mobile, another youth-oriented service—it uses Verizon Wireless's network—filed for Chapter 11 bankruptcy this June, and while the company says it is committed to maintaining service to some 200,000 customers, a growing number of unhappy subscribers are posting complaints on gripe sites. Last year, an ESPN-branded MVNO went out of business.

Another group of alternatives to the major national carriers is made up of regional service providers such as Alltel, Cricket, Metro PCS, and US Cellular. These regional carriers usually offer relatively inexpensive service for people who don't need a phone with national coverage. But if you do sign up with a regional service and roam on its plan, be prepared for hefty charges.

FAMILY FRIENDLY: DISNEY Mobile's phones come with GPS receivers that allow parents and kids to track each other's whereabouts.



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www.LGusa.com

Going this route (or shopping by phone) means dealing with a human being, a circumstance that you might be able to turn to your advantage. Try asking the sales reps if they can waive the activation fee (usually about $35) or renewal fee (around $20). They might agree to do it—especially if you're activating several phone lines, signing up for many services, or renewing your contract and buying a new phone.

Sweetening the Deal

With Sprint, you don't even have to be at a store or on the phone to request activation credit. Just ask one of the online consultants via live chat. Mention a competing carrier's offer if it's a good one; this might get you out of paying an activation fee, or gain you a freebie phone offer. But you might not get a carrier's stores to match its Web prices.

If shopping in person, check out the series of "Confessions" that purport to be from current and former cell phone sales reps on The Consumerist (www.consumerist.com). For example, "11 Confessions of a T-Mobile Sales Rep" (find.pcworld.com/57890) says that stores are more likely to grant concessions at the end of the month in order to meet sales goals. We can't vouch for all of the tips (be sure to read the updates challenging some), but several sounded reasonable.

PRICE CHECK

T-Mobile Wing

- **$200** at Amazon.com with 2-year, $40/month voice plan and $30/month Internet plan ($50 rebate available).
- **$350** at T-Mobile with 2-year, $30/month voice plan and $30/month Internet plan ($50 rebate available).
- **$630** at J&R.com, unlocked version.

Prices are as of 6/28/07.

Do what you can to get your deal in writing. Then, if there's a problem later on, it won't just be your word against the sales rep's (or the standard contract).

30-Day Trial

If you're unsure about going with a particular phone or service provider, ask about a trial period. Almost all carriers, including the major providers and mobile virtual network operators such as Boost, Helio, and Virgin Mobile (see "Cell Phone Services for the Young, for Parents, and for Frugal Callers" on page 128) offer a 30-day return policy (the trial period for T-Mobile is only 14 days, except in California, where it's 30 days). You pay for a phone and the activation fee up front, and receive a bill later for any voice and data services that you use. (Verizon's Test Drive program waives voice-call charges, but you still have to pay for data usage.)

A trial period is a great opportunity to test the quality of a carrier's call reception and data connection around your house, at your office, and in other places where you routinely find yourself. You should also check out your handset. Is it easy to use? Is its battery life satisfactory? Is typing comfortable? Are the buttons in the right places? How simple is the photo-sharing process?

If the trial leaves you unhappy for any reason, return the phone, get a refund for the handset and the activation fee, and move on to something else.

Contracts

Initial here, here, and here. Then sign there. Wait! Though a contract may lower the cost of a handset, it may not save you money in the long run. »

Mobile Broadband: Carriers, Technologies, and Data Speeds

HERE ARE THE major data network technologies in use today, the carriers that use them, and the brand names that they're sold under, where applicable. Carriers often do not brand their older, slower data networks, and you may have to check coverage maps or call the carrier to find out whether upgraded network service (such as the upgrade from EvDO to EvDO Rev A) is available.

NETWORK TECHNOLOGY:	GSM/GPRS FAMILY			CDMA FAMILY		
	GSM/GPRS	EDGE	UMTS/HSDPA[1]	CDMA 1xRTT	EvDO Rev 0 (1xEvDO)	EvDO Rev A
Carrier/brand name:	• AT&T • T-Mobile	• AT&T • T-Mobile	• AT&T Broadband Connect	• Sprint Vision • Verizon Wireless NationalAccess	• Sprint Mobile Broadband • Verizon Wireless BroadbandAccess	• Sprint Mobile Broadband • Verizon Wireless BroadbandAccess
Average upload speed:	28.8 kbps	40–80 kbps	220 kbps	60 kbps	50–70 kbps	350–500 kbps
Average download speed:	40–60 kbps	75–135 kbps	400–700 kbps	50 kbps	400–700 kbps	600–1400 kbps

[1] AT&T Broadband Connect uses UMTS for uploads but has upgraded to HSDPA for downloads. Sources: AT&T Wireless, Sprint, T-Mobile, Verizon Wireless.

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With a contract, carriers subsidize the cost of the handset in order to collect two years' worth of service fees—and maybe swell their profits further by selling you extras such as text and picture messaging, or content such as games, ring tones, and music.

But being bound to a single carrier for one or two years may not be suitable if you move around a lot: The carrier you sign up with in one town may not have coverage in your new home.

Also, if you like to get a new phone every six months or so, a contract does not make sense: Canceling early typically incurs a $150 to $250 penalty, depending on the carrier. A compromise might be a one-year contract; it won't save you as much money on the handset, but you'll be able to get a deal on a new one once the year is up.

You might also be able to get out of an early termination fee by finding someone to take over your obligation. You can buy, sell, or trade wireless plans on sites such as Cellswapper.com and Celltradeusa.com. Sellers sometimes throw in a free phone or a cash incentive to sweeten the deal. If there's a match, Celltradeusa charges the seller $20, and Cellswapper charges $15. See find.pcworld.com/57807 for additional information on these services.

Prepaid Phones

If you need only a fairly simple handset, consider prepaid phone service, where you pay up front for services as you need them. This can be ideal if your usage tends to fluctuate from month to month. It also helps limit spending on wireless services, which makes it attractive to parents concerned about unexpected charges on their kids' phones.

You won't find the latest and greatest phones in the prepaid aisle. Services such as AT&T's Go Phone, T-Mobile's To-Go, and Verizon's INpulse and EasyPay provide handsets that usually cost less than $100. T-Mobile, however, does offer

the Sidekick 3 as a prepaid option.

Prepaid services cover basic data functions such as text messaging, instant messaging, limited Web browsing, and access to POP3 or Web-based e-mail. You'll find prepaid and pay-as-you-go offerings from national carriers, several smaller carriers, and retail chains such as 7-Eleven, Best Buy, and Target.

Locked vs. Unlocked

As mentioned earlier, carriers normally sell GSM handsets locked to keep you from switching services by swapping out the SIM card. But you can buy an unlocked phone from a third party, typically an online store or an eBay vendor. The benefits: No contract is required, and you're free to use any SIM card at any time, including cards from overseas carriers (for more, see our clip-and-save guide for travelers on page 134).

The downside: Unlocked phones are generally expensive. For example, at this writing, in late June, I noticed that several eBay vendors were selling an unlocked version of the BlackBerry Curve 8300 for $450. At the same time, AT&T was offering a locked Deluxe version for just $300 (after a $100 mail-in rebate).

PRICE CHECK

Samsung Upstage M620

- **$130** at Sprint with 2-year, $30/month voice plan ($50 rebate available).
- **$150** at Amazon with 2-year, $40/month voice plan.
- **$300** at J&R.com without service plan.

Prices are as of 6/28/07.

But be sure to shop around—prices will vary. Pricegrabber.com found an unlocked Curve for $400 at Newegg.

Mobile Data

E-mail, messaging, and Web access on a smart phone can be terribly addictive. And unfortunately, like many other addictions, mobile data can get pricey.

Some carriers, most notably AT&T and T-Mobile, charge more for data services that run on PDA phones—Palm Treos, the Samsung Blackjack, the T-Mobile Dash, and the Sidekick—than for those on standard handsets.

Some data plans depend on a particular model. For example, BlackBerrys require a BlackBerry-specific plan to support the push e-mail feature that BlackBerrys are known for. Some carriers also charge for the ability to sync corporate e-mail accounts on clients like Outlook and Lotus Notes.

Text and picture messaging, as well as over-the-air music and TV downloads, incur additional charges; check with your carrier if you or a family member intends to use these services. Ask what options are available for transferring images captured with your cell phone to your desktop PC.

If you do plan on heavy data usage, get an unlimited data plan that covers all of the above. Otherwise, you might be quite content with subscribing to the basic data connection and paying for each text message and a megabyte or two of Web surfing each month. You can change your data services if you find you're not using them or need to expand your plan—but you may have to extended your contract if you change its terms.

Like virtually every other aspect of your contract, this point is well worth asking about before you agree to sign on the dotted line.

Grace Aquino writes the Dialed In *column on cell phones and services for PCWorld.com.*

ILLUSTRATION: MARC ROSENTHAL

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Roam If You Want To: Tips for Globetrotters

IF YOU'RE A frequent overseas traveler, your cell phone needs will differ from those of homebodies. Here are key options, viewed from a globetrotter's perspective.

GSM vs. CDMA: In most cases, a GSM phone is the better choice because GSM networks are widely available throughout Asia, Europe, Oceania, and South America. But you should get a quad-band or so-called world phone—a handset that supports GSM on the 800-, 850-, 1800-, and 1900-MHz bands—because foreign nations don't use the same GSM frequencies as North America does.

CDMA networks, used in the United States by Sprint Nextel and Verizon Wireless, are less common overseas, although they are widely employed in Japan and Korea. Sprint or Verizon customers who travel a lot should consider a CDMA-GSM hybrid (see "Get Two Networks..." below for more details).

Roaming vs. Using an Overseas Carrier

	PROS	CONS
International roaming	• You're reachable through your usual phone number. • You need to set up international service only the first time you use it.	• Voice/data services cost a bundle. • Roaming privileges may be tied to a long-term contract. • Service may not be available at all destinations.
Overseas carrier's SIM card	• Prepaid voice and data services are relatively inexpensive. • No contract or long-term commitment is required.	• Setup with a foreign carrier (whose reps may not speak English) can be inconvenient. • You'll need an unlocked handset, which may be expensive. • You won't have your address book, and you won't be reachable at your usual number.

International roaming: If you have a GSM world phone (or are using your CDMA phone in a region that supports it), you should be able to get it set up for international roaming with your carrier, but be prepared for voice and data charges that will be much higher than what you're accustomed to paying back home (check with your carrier about rates). When traveling, turn your phone off when you're not ready to answer it, or you'll pay even more for calls that aren't sent directly to voice mail.

Using an overseas carrier: Instead of roaming on a GSM world phone, consider opening an account with a local carrier at your overseas destination and swapping in that carrier's SIM card for your usual one. (You typically cannot activate a CDMA phone on a different carrier's network.) But you'll need to either buy an unlocked GSM phone or ask your carrier (or someone else) to help you unlock your handset. Our chart lists the pros and cons of this approach versus international roaming.

Renting: If your phone won't work in the country you'll visit, consider renting one that will. The major U.S. operators and third parties such as Telestial (www.telestial.com) all rent and sell international phones; a few, including Verizon, even offer satellite phones, which work in remote areas without conventional cell service. You could also rent or buy a prepaid phone from a carrier at your destination.

Wireless PC cards: If you are taking your laptop along, consider buying or renting (if that's an option) a wireless card and subscribing to a global broadband service. Though pricey, this option lets you surf the Web in areas where Wi-Fi is not available. ●

DUAL-MODE CELL PHONES

Get Two Networks...

SPRINT NEXTEL AND Verizon Wireless customers once had to rent or buy different handsets when they traveled in Europe, where most cell phone service is based on GSM technology. But in recent years, these national CDMA carriers have begun offering handsets that can operate on both GSM and CDMA networks.

Verizon has four phones with this capability: the BlackBerry 8830 World Edition and Samsung i830, for those seeking PDA features; and the older Motorola a840 and Samsung a795.

Sprint sells the 8830, the Samsung IP-830w, and Motorola's V555 for Nextel users.

...on One Phone

Note that you will have to purchase a special plan or pay international roaming charges to use these handsets overseas. The carriers supply the GSM SIM card these phones use, and lock them so that you don't have the option of swapping in an overseas carrier's SIM card to get a cheaper plan. Nevertheless, for frequent business travelers who want to be reachable on the same phone number wherever they happen to be, the premium charges for international roaming may be worthwhile.

CDMA AT HOME, GSM abroad: Samsung's IP-830w.

ILLUSTRATION: MARC ROSENTHAL

SUMMARY NOTICE OF SETTLEMENT

To: All persons or entities in the United States who purchased any Buffalo Technology Wireless Product between January 1, 2000 and December 31, 2004. This Notice contains important information that may affect your legal rights.

This Notice summarizes the proposed settlement of an action entitled *Robinson v. Buffalo Technology (USA), Inc.*, Case No. BC317668 (Los Angeles Superior Court). The full details of the settlement terms, and how to claim settlement benefits if the settlement is approved, is available in the detailed Official Court Notice (the "Notice") that is available online via links called "Settlement Claim Information" posted on the Home page and on various interior pages on the Buffalo Technology Website at www.buffalotech.com/home/ (hereinafter "the Website"). To determine if the Buffalo Technology wireless product you purchased is covered by the settlement, please review the list of "Covered Buffalo Technology Wireless Products" in the Notice on the Website.

Description of the Lawsuit: In the *Robinson* lawsuit, the plaintiff alleges that the description in advertising and packaging of the data rate for certain Buffalo Technology Wireless Products has been false and misleading. Buffalo Technology denies these allegations. The products, listed on the Website, are referred to herein as "Covered Buffalo Technology Wireless Products."

Settlement Class: You are a member of the Settlement Class if (1) you purchased a Covered Buffalo Technology Wireless Product at any time from January 1, 2000 and December 31, 2004, (2) you purchased such product new or refurbished (i.e., not second hand) from an entity that regularly sells/sold such products, and (3) you did not purchase such product for resale.

Description of Settlement: If the court approves the settlement, each member of the Settlement Class who submits a valid Claim Form by February 22, 2008 for a Covered Buffalo Technology Wireless Product is eligible to receive a Rebate Certificate that can be redeemed for cash after purchasing a new Buffalo Wireless Product. The rebate amount will range from $5 to $25, to be determined by the price paid for the new Buffalo Technology wireless product. Such purchase may be made at any retail store, internet retailer or Buffalo Technology's online store. The Website contains a claim form and instructions for making a claim. If the claim is timely and valid, you will be sent a Rebate Certificate via U.S. Mail. The Website explains the procedures for redemption, and lists the relevant deadlines. The settlement also specifies language to be included in Buffalo Technology manuals, product packaging and other places regarding the data rate for wireless products. Finally, the settlement provides that Buffalo Technology will make a charitable contribution of $10,000 worth of Buffalo Technology wireless products to a charity of its choice, and that it will not oppose a request by counsel for the Settlement Class ("Class Counsel") that Buffalo Technology pay Class Counsel $108,000 as an attorneys' fee award, and pay $2,000 as an incentive award to the class representative. If you do not object to or wish to be excluded from this settlement, you need do nothing at all to indicate your consent.

To be Excluded: Requests to be excluded from the settlement must be sent by mail to Class Counsel, Weiss & Lurie, attn: Jordan L. Lurie, 10940 Wilshire Blvd., 23rd Floor, Los Angeles, CA 90024, and to counsel for Buffalo Technology, Baker & Hostetler LLP, attn: C Dennis Loomis, 12100 Wilshire Blvd., 15th Floor, Los Angeles CA 90025, and **postmarked no later than September 25, 2007.** Further details on the procedures, rights, and effects of requesting exclusion are provided in the detailed Notice linked on the Website.

To Submit Objections: Objections to the settlement must be in writing and mailed or hand-delivered to the Clerk of the Court, Superior Court of California, County of Los Angeles, 111 North Hill Street, Los Angeles, California, 90012, must identify the case as *Robinson v. Buffalo Technology* (USA), Inc., Case No. BC317668 (Los Angeles Superior Court), **and must be received by the Court no later than September 25, 2007.** You must also mail copies of your written objections to the counsel listed above, **postmarked no later than September 25, 2007.** Further details on the procedures, rights, and effects of making an objection, including your right to participate at the hearing, addressed below, are provided in the detailed Notice on the Website.

Hearing: A hearing on the settlement will be held before the Honorable Jane L. Johnson, Superior Court of California for the County of Los Angeles, Department 56, located at 111 North Hill Street, Los Angeles, CA, on October 16, 2007 at 8:30 a.m. Judge Johnson will consider, among other things, (1) whether the proposed settlement is fair, reasonable and adequate, (2) whether the Settlement Class should be certified, (3) whether the Court should enter the proposed final judgment, (4) whether the application of Class Counsel for an award of attorneys' fees and expenses should be granted; and (5) whether the payment of an incentive award to the Class Representative should be granted.

PLEASE ADDRESS ANY QUESTIONS TO CLASS COUNSEL AT 800-437-7918 or 310-280-2800. DO NOT CONTACT THE COURT OR THE CLERK'S OFFICE FOR INFORMATION.

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Here's How

Shift Any Version of Windows Into High Gear

BY SCOTT DUNN

Use the OS's own tools to maximize your PC's performance without spending a dime.

IN PREVIOUS VERSIONS of Windows, tweaking settings to get the fastest system possible used to require bouncing from one arcane dialog box to the next. Though Vista makes most system information easier to find, many of the tools that will put your PC into overdrive remain buried. Here's a guide to Windows' built-in performance tools.

A new Control Panel applet in Vista collects your favorite (and not so favorite) tools for analyzing and revving up your system: Click *Start•Control Panel•System and Maintenance•Performance Information and Tools*, and click the links on the left to access the tools you need (see the image below). Be sure not to neglect the various options that lurk behind the 'Advanced tools' link.

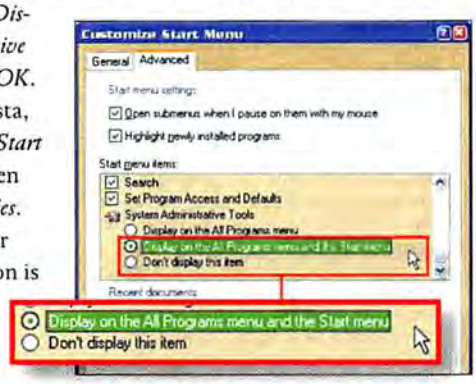
Note: Few of these tools are new to Vista—XP users can access most of them by following the steps listed at find.pcworld.com/57873.

Hidden Performance Gizmos

Although not intended as performance tools per se, a number of the apps in the Administrative Tools Control Panel applet available in all versions of Windows include options for revving up your system. These settings are much easier to reach when you put them on the Start menu, however.

To do so in Windows 2000, right-click the taskbar and choose *Properties*. In the 'Taskbar and Start Menu Properties' dialog box, click the *Advanced* tab. In the Start Menu Settings scrolling list, check *Display Administrative Tools* and click *OK*.

In XP and Vista, right-click the *Start* button, and then choose *Properties*. Click whichever *Customize* button is selectable. If you use the Classic Start menu, check *Display Administrative Tools* in the 'Advanced Start menu options' list. If you use the default Start menu, click *Advanced*. Under 'Start menu items', find System Administrative Tools and select whether to display it on the All Programs menu or on both the All Programs and Start menus (see the screen shot at upper right). Click the *OK* button twice.

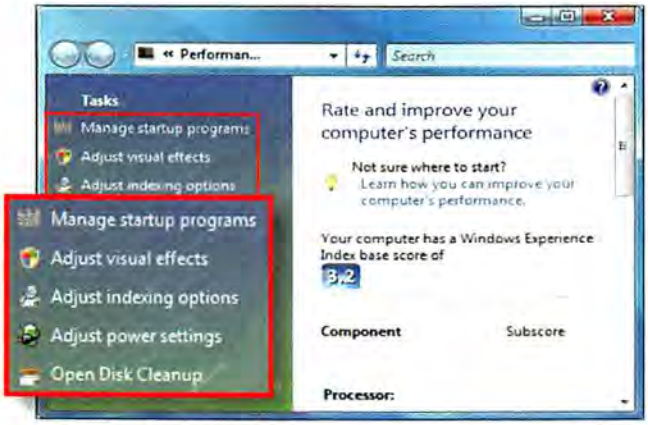


GET EASY ACCESS to Windows' Administrative Tools by making these options appear in their own Start submenu.

Mind Your Memory

Poor performance may signal problems with your system RAM. Vista will prompt you to use its Memory Diagnostic Tool if it detects a problem with your RAM, but if you want to be sure, you can run this utility any time you want: Choose *Start•All Programs•Administrative Tools•Memory Diagnostic Tool*. (Click *Continue* if prompted by User Account Control.) To check your system, click the first option, *Restart now and check for problems (recommended)*.

The tool will reboot your PC, and you'll see a text-based (or DOS-like, for you old-timers) screen. Press **<F1>** for more options. You can choose from three types of tests: Basic, Standard, and Extended. Selecting one from the keyboard displays a brief description that is incomprehensible to all but the most serious of geeks. Leave the highlight on one

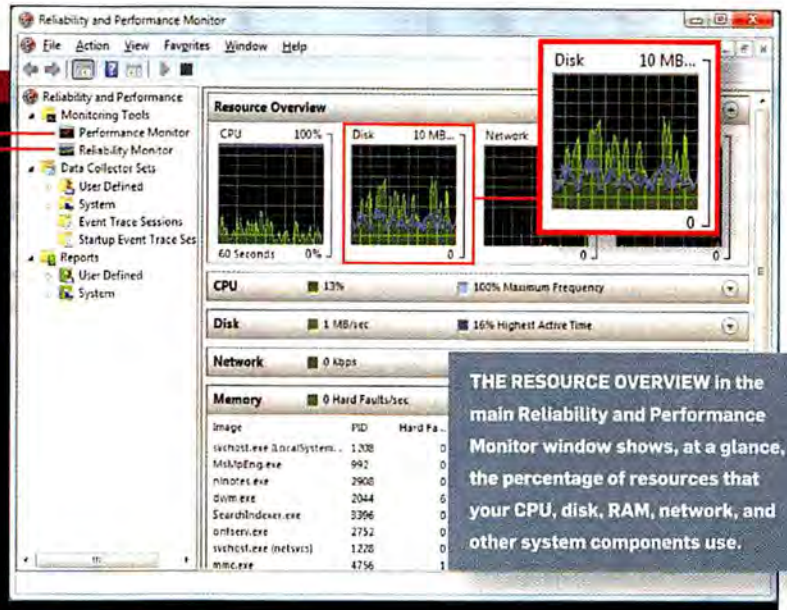


VISTA'S PERFORMANCE INFORMATION and Tools applet provides (mostly) one-stop shopping for all your vital system settings.

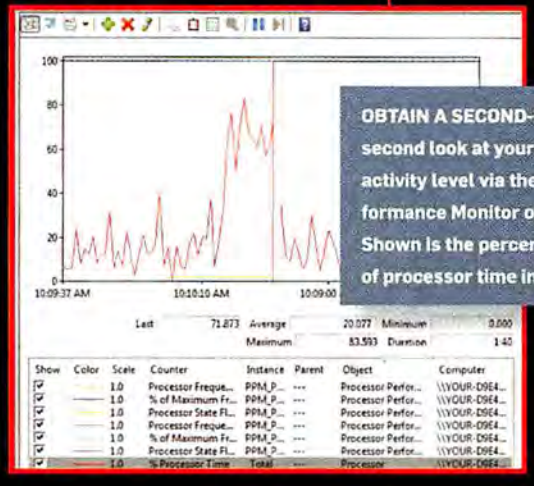
PERFORMANCE TWEAKS

The New View of Your System Info

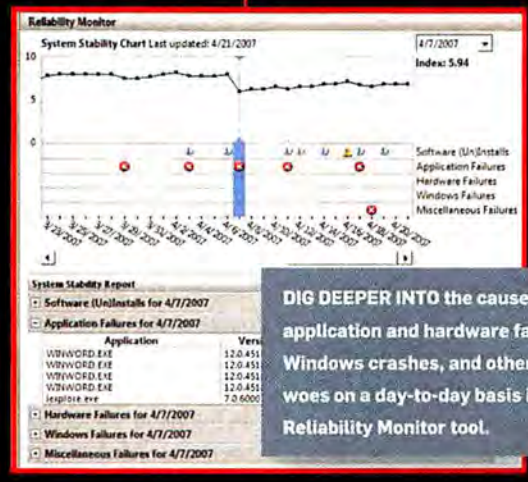
WHEN YOUR COMPUTER is in need of some maintenance or troubleshooting, make Vista's Reliability and Performance Monitor your first stop. While you can find many of the individual tools in previous Windows versions, the new Control Panel applet helpfully puts much of Vista's most important and useful system information in a single location.



THE RESOURCE OVERVIEW in the main Reliability and Performance Monitor window shows, at a glance, the percentage of resources that your CPU, disk, RAM, network, and other system components use.



OBTAIN A SECOND-BY-second look at your PC's activity level via the Performance Monitor option. Shown is the percentage of processor time in use.



DIG DEEPER INTO the causes of application and hardware failures, Windows crashes, and other system woes on a day-to-day basis in the Reliability Monitor tool.

to select it and then press **<Tab>** to move to the next section, namely the Cache settings and the Pass Count, or the number of times you want the test repeated. If your PC gives no indication of problems, I recommend the Basic test with the defaults for the Cache and Pass Count. Press **<F10>** to start the test with these settings.

The memory test can take several minutes. After it reboots your PC, Vista displays the results; if no problems are found, Windows will start and show a pop-up in the system tray to report that fact. If it reports errors, replace the memory modules; browse to find.pcworld.com/57883 for instructions.

Scrub the Services

Every time you start Windows, it loads a bunch of "services" that perform various tasks, some of which you may not need. The fewer services you run, the faster Windows starts and the more memory you have for applications and tasks.

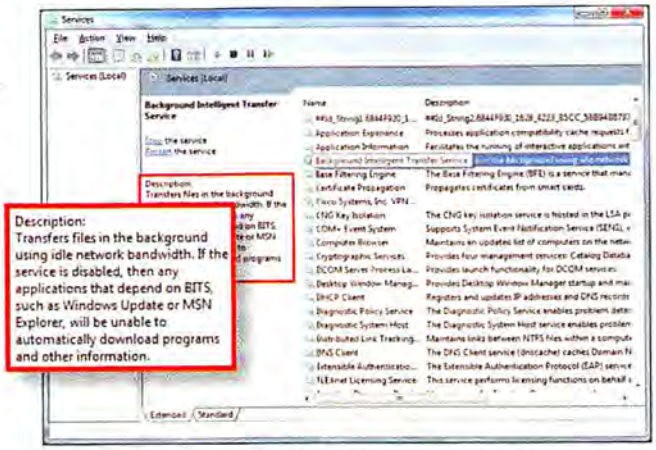
Making changes to services can cause problems, so set a System Restore point or back up your Windows Registry. (Browse to find.pcworld.com/57517 and scroll to the middle of the page for directions.) Even after this precaution, be careful about which services you disable. Never shut down a service you don't understand, and don't disable several at once. Instead, turn one off and see if your system runs okay without it for a while before disabling another.

To control which services run, use (what else?) the Services tool: Click *Start•All Programs•Administrative Tools•Services* (or open the Administrative Tools Control Panel applet; see "Hidden Performance Gizmos" on the previous page). Which services are listed depends on your computer's configuration. In XP and Vista, a short description appears on the left when you select a service (see the image at the top of the next page). If you don't see the description, select the *Extended* tab at the bottom. In Windows 2000, choose *View•Details* and look for a Details column that explains each item.

Disable all the tools you don't use. For example, if you never send out faxes from your PC, double-click the *Fax* service in the list to open its Properties dialog box. Next to 'Startup »

type', choose *Manual* or *Disabled*. The former prevents the service from starting with Windows but keeps it available when needed.

If the description in the Services tool doesn't help identify it, search Windows' 'Help and Support' program (look for a shortcut on your Start menu). For a thorough description of services along with suggestions on which you can safely disable (sorted by Windows version), consult the Black Viper Web site (www.blackviper.com).



HELPFUL DESCRIPTIONS EXPLAIN the purpose of each item listed in the Services tool that is included with Windows XP and Vista.

Perk Up Printing

When you choose the Print command in Word, Excel, or some other application, Windows sends the data from the program to a "spool" file on your hard disk. As soon as the first page is spooled to disk, Windows sends that page to the printer. The OS attempts to compromise between getting pages to your printer quickly and freeing your application to do other things.

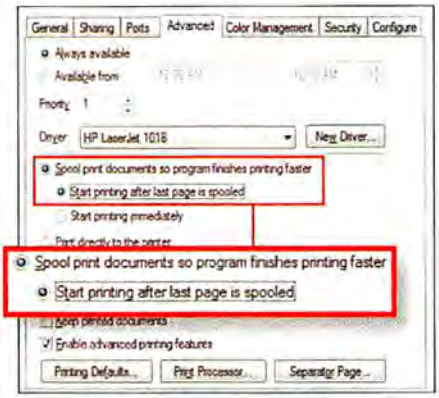
But you don't have to stick with the Windows way. You can customize your print settings to rev up what's important to you. In Vista, choose *Start•All Programs•Administrative Tools•Print Management* (or select it from the Administrative Tools Control Panel applet; see "Hidden Performance Gizmos" on page 136). With *Custom Filters* selected in the left pane, double-click *All Printers* in the middle, and double-click the icon for the printer whose performance you'll customize.

In Windows XP, click *Start•Printers and Faxes* (on the default Start menu) or *Start•Settings•Printers and Faxes* (on the Classic Start menu). Right-click the printer you want to customize, and choose *Properties*.

In Windows 2000, choose *Start•Settings•Printers*. Right-click the printer you'll customize, and pick *Properties*.

In all Windows versions, click the *Advanced* tab in your printer's Properties dialog box, and make your choice based on your priority:

To reduce the time your application makes you wait while printing a large document, make sure *Spool print documents so program finishes printing faster* is selected, and click *Start printing after the last page is spooled* (see the screen shot at upper right). You'll need to have enough free disk space to spool the whole document.



CUSTOMIZE YOUR PRINTER'S performance settings via the options listed under the Advanced tab of its Properties dialog box.

To reduce the time pages take to print, choose *Print directly to the printer*. This option may not be available if the printer is shared, but changing a setting under the *Sharing* tab can stop sharing. The printer must be turned on for this option to work, and you won't be able to pause the print job.

If neither of these settings is satisfactory, return to the default by reselecting *Spool print documents so program finishes printing faster* and *Start printing immediately*.

Speed Up Startups

Administrative Tools' System Configuration option lets you control the software that starts automatically with Windows. In Vista this option is on the menu, but in XP and 2000 you must choose *Start•Run*, type **msconfig**, and press **<Enter>**. Uncheck the programs you're sure you won't use, such as utilities for a printer you've replaced. Reducing the number of autostart applications can significantly speed up Windows' startup. For details, browse to find.pcworld.com/57519.

Park Your Mouse

Another way to work faster is to keep your hands on the keyboard and leave your mouse alone. For a list of the most useful keyboard shortcuts, see find.pcworld.com/57520; for even more keyboard control, see *Windows Toolbox* at left.

WINDOWS TOOLBOX

The Shortcut King: Active Keys

WINDOWS LETS YOU create your own keyboard shortcuts for launching applications (just right-click the app's icon on the Start menu, choose *Properties*, and enter your keys of choice in the Shortcut Key box under the Shortcut tab). But for real control, check out Active Keys, an easy-to-use utility that assigns keyboard shortcuts to actions you never thought were keyboardable, such as repositioning a window to a specific corner of the screen, pasting the date and time, emptying the Recycle Bin, and changing your media player's sound volume. The program costs $20; the trial version is at find.pcworld.com/57507.

Sub-$100 PC Speed Upgrade: Replace Your CPU

FOR LESS THAN $100, you can give an old PC a new lease on life via a CPU upgrade.

First, find out which CPUs your system's motherboard supports. For Intel CPUs, you can rely on the free Intel Chipset Identification Utility (find.pcworld.com/57739); for Intel or AMD chips, work with SiSoft's Sandra 2007 Lite (find.pcworld.com/57740).

You'll find that you get the biggest boost when moving from a Celeron to a Pentium, switching to a CPU that's at least 50 percent faster than your current one, or shifting from a traditional processor architecture to dual-core.

If you can't upgrade your processor, consider buying a new motherboard. As we went to press, a dual-core AMD Athlon 64 X2 3800+ CPU cost just $79 online (find.pcworld.com/57741), and an Asus A8V-XE motherboard was $50 (find.pcworld.com/57742). Look online for motherboard-CPU combo offers; they're often an even better deal. You can reuse your PC's existing memory if the new motherboard takes the same type and speed (DDR, DDR2, or whatever).

Upgrade Checklist

CPU and cooler: Check Sharky Extreme's weekly price list (www.sharkyextreme.com) to get a feel for CPU prices. For background on CPU coolers (heat sink/fan combinations), visit online forums; the fan that came with my Pentium D 820 CPU sounded like an idling 747 until I replaced it with a $50 Zalman fan (find.pcworld.com/57743).

Thermal grease: Your CPU vendor probably applied thermal grease to the bottom of your new cooler or included a tube of grease for you to apply yourself. If no thermal grease came with the CPU, purchase a tube from your local computer store; this compound is essential for keeping today's hot CPUs running cool.

Caution and patience: PC components are extremely sensitive. Work slowly and deliberately, and never push, pull, or twist anything forcefully inside a computer case.

THE INTEL CHIPSET Identification Utility will help you determine which replacement CPUs your system's motherboard supports.

Step-by-Step

Open the case: Unplug the PC, ground yourself by touching a metal object (other than your PC's case) or by using a grounding wrist strap, and then remove the cover.

Detach your old CPU, heat sink, and cooling fan: Read all the installation and removal instructions that came with your CPU. You can remove most coolers either by flipping a lever (socket 939, 940) or by giving four securing posts a half-turn (Intel socket LGA775). To remove a CPU, first lift the small lever located on the side of the socket to loosen the clamping mechanism, and then gently pull the processor out.

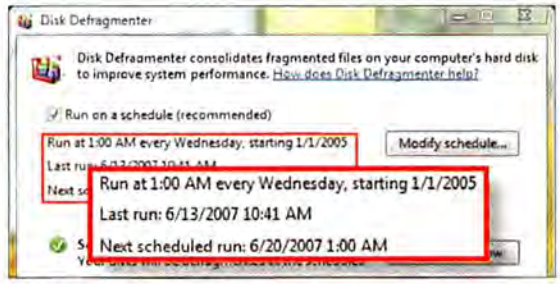
Insert the new CPU, sink, and fan: Handle the new CPU by its edges only. Align the chip with the socket on the motherboard, insert it, and flip the lever to clamp it in place. Fasten the new fan and heat sink. When you restart the PC, you may have to enter the PC Setup program in your BIOS (look for the on-screen option before Windows loads) and select a new clock frequency. (Again, be sure to read the CPU's instructions before undertaking this operation.)

—Kirk Steers

ANSWER LINE

How can I make Windows Vista's disk defragmenter work in Safe Mode?

Keith Brooks, Melbourne, Florida



VISTA'S DEFRAG WORKS in the background. If you bring up the defragger, you won't find much information.

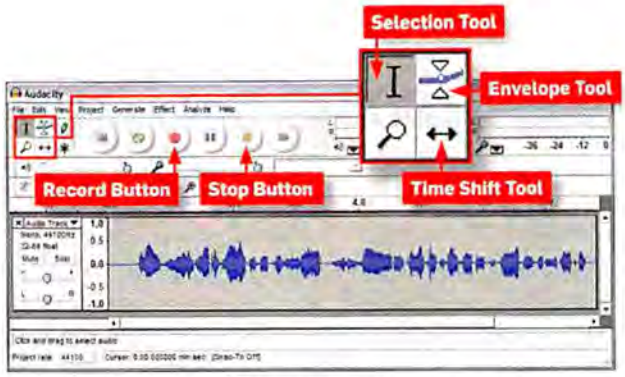
IT ALREADY WORKS in Safe Mode; it just doesn't tell you so. Vista treats defragging as a hidden background task: no progress bar, no boxes that change color, no indication anything is happening. When you launch Defrag under normal conditions (by right-clicking your hard drive's icon in Computer, selecting *Properties*, and clicking *Tools•Defragment Now*), you get a dialog box for controlling when defrags happen, but that's it. Do the same thing in Safe Mode, and defragging quietly starts.

Here's another Vista Defrag problem: Entering **defrag c:** at Vista's command prompt brings up an error message. To launch a command-line defrag, select *Start•All Programs•Accessories*, right-click the *Command Prompt* icon, and choose *Run as administrator*. You may have to click through Vista's User Account Control dialog box before the administrator command prompt will finally appear.

—Lincoln Spector

Send questions to answer@pcworld.com. We pay $50 for published items.

Podcast Like a Pro With Free Sound-Editing App



THE MANY FEATURES and clear controls of Audacity's free audio software make creating professional-sounding podcasts a breeze.

IF YOU ENJOY listening to homegrown, downloadable Internet radio programs (aka podcasts), you may have thought to yourself, "Hey, I can do that!" Judging from the low quality of many podcasts, so have lots of other folks. That's too bad, because creating a great-sounding podcast isn't hard or expensive. Here's what you need.

Make an outline: Do you want to put together a single podcast or a series of presentations? Whatever your intentions, make an outline of everything that you want to cover, and from it select a set of points suitable for a good 5- to 10-minute show. That may be all you need as a script—some people can start talking just from an outline. But if you lack the natural gift of gab, try to work out a more formal script.

Find a quiet recording area: To create a podcast that doesn't sound as if it were recorded inside an empty Dumpster, you need a quiet room—which means, in part, a quiet PC—as well as a reasonably good microphone. Desktop computers equipped with loud fans will sabotage your efforts to sound professional. Laptops tend to work better, but some of them have annoying fans that kick in from time to time. Close as many applications and system-tray utilities as you can, thereby minimizing the load on the CPU. I silenced the intermittent roar of my laptop's fan by switching the CPU to its low-power mode via the PC Setup program (aka the BIOS; look for the key to press to access this program when you start your PC, before Windows loads).

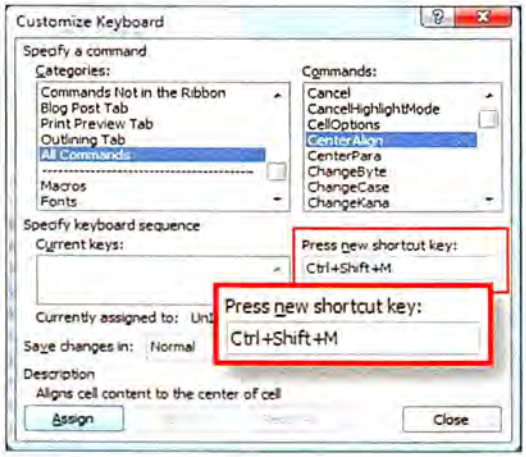
Don't use your PC's built-in microphone. Not only will it sound tinny compared with an external mic, but it will pick up your PC's hard-disk and fan noises. Many USB headset mics record well, as do most standard dynamic mics designed to plug into a PC's audio-in jack. Condenser mics provide the best sound, but they may require a preamp to provide sufficient power.

Choose audio-recording software: The free, open-source Audacity multitrack recording program (find.pcworld.com/57813) gives you lots of audio-editing tools, and yet it's also simple to use: Just plug in a mic and click the *Record* button. When you're done, click the *Stop* button. Your recording appears in the tracks window (see the screen shot above). Click the *Play* button to review your progress. If you make a mistake, you'll find that deleting dead air and flubs is easy. Choose the *Selection* tool, indicate the portion of the recording you want to delete, and press **<Delete>**. Every time you click *Record* (and *Stop*) again, Audacity places the resulting recorded fragment in a new track below the previous one. Copy and paste the new snippets into your original track in place of the flubs you deleted, and then delete the new tracks.

—Scott Spanbauer

Save Time With Custom Word Shortcuts

THE FASTEST WAY to get things done in Microsoft Word is to keep your hands off the mouse and on the keyboard. To obtain a list of the keyboard shortcuts for all versions of Word, go to find.pcworld.com/57782. In addition, you can make your own shortcuts for commands, macros, and other tasks. In Word 2007, click the arrow in the Quick Access Toolbar to the right of the Office button in the upper-left corner of the screen. Select *More Commands*, and then click the *Customize* button next to 'Keyboard shortcuts'.



CREATE YOUR OWN keyboard shortcuts in Word by entering the keys of your choice in this text box.

In the Categories box, click the command or other task you want to assign a keyboard shortcut (to view your options, scroll down to and select *All Commands*). The current shortcut is in the 'Current keys' box. In the Commands box, choose the operation you want the shortcut to apply to. In the 'Press new shortcut key' box, press **<Ctrl>**-*your key*, or a combination of **<Ctrl>**, **<Alt>**, and/or **<Shift>**, and click *Assign* and then *Close*.

In Word 2000 through 2003, click *Tools•Customize•Keyboard*, select the command you want to change, press the desired key combination in the 'Press new shortcut key' box, and then click *Assign*.

—Michael S. Lasky

Stream Video Smoothly on a Wireless Network

DIGITAL VIDEO QUALITY is all about bit rates. Usually, the higher the throughput—whether for streaming clips from the Web or for zapping TV around the house—the better the result. So if image quality is important to you, upgrade the wireless network that transports your images.

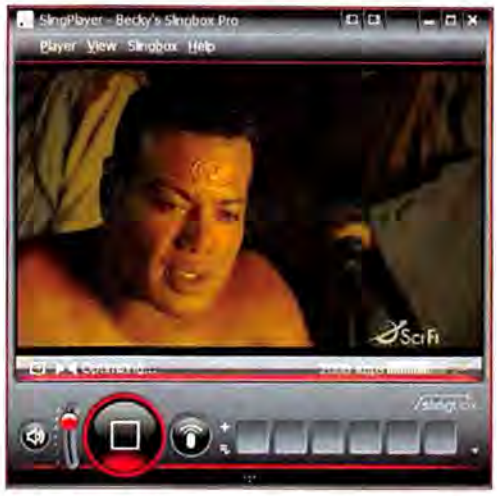
If you just want to watch YouTube videos or the current generation of iTunes video downloads (which are standard-definition), even a good 802.11g Wi-Fi router will handle bit rates to about 5 megabits per second. Of course, pictures at this rate can't match the quality of DVDs or cable TV, especially if you have an HDTV.

Commercially made DVDs use MPEG-2 compression at peak bit rates of around 10 mbps (and an average rate of half that). Typical high-def camcorders have peak recording rates of 19 mbps for 720p, or 25 mbps for 1080i, using a form of MPEG-2. To stream this sort of video, you need a draft-802.11n or MIMO router, which provides the speed and range to support high bit rates (we achieved real-world throughput of over 50 mbps in tests; see find.pcworld.com/57793); in addition, special quality-of-service (QoS) algorithms in the routers give priority to streaming media data packets over, say, downloading the latest Windows OS updates. You also need to buy matching draft-802.11n adapters for all the devices you'll stream video to or from (or you'll have to connect them via wired ethernet). The Wi-Fi Multimedia standard, 802.11e QoS, must be supported at both ends of the connection; the product's box should say whether it supports this standard.

Now that you have the plumbing down, here are a few more streaming tips:

- Use the best connections possible between your PC or media server and your TV. In order, from best to worst, they are as follows: HDMI or DVI, component, S-Video, and composite. Having high-definition 720p video on your media server won't matter if your home theater relies on a composite connection. You can purchase a device such as D-Link's DSM-520 Wireless HD Media Player with HDMI for about $240 online (find.pcworld.com/57794).
- When compressing your own home movies for streaming, use the highest playback quality that your setup will support. Perform some test transfers to determine the best combination of compression and frame rate. In most cases, MPEG-4 or H.264 will be the best choice.
- If you plan to view your home TV remotely via Sling Media's Slingbox or Sony's LocationFree video server, make sure that your broadband Internet connection has an adequate upload speed for the task. DSL and cable modems are usually asymmetric. A 3-mbps download speed may be matched with a 400-kbps upload speed, which will limit your video quality. You can check your connection's upload speed at www.speedtest.net. We recommend a threshold upload rate of 600 kbps for reasonably smooth remote Slingbox viewing in a medium-size video window. On a local network, our Slingbox slings at between 1 mbps and 2 mbps—good enough for full-screen viewing.

—Becky Waring



HOME-MEDIA BOXES SUCH as Slingbox require upload speeds of 600 kbps; 1 mbps to 2 mbps is recommended.

Autocompress the E-Mail You Send

IF YOU NEED to send fat files via e-mail, your ISP—and every other ISP on the planet—disdains you. As often as not, they'll block any file or group of files you try to send that exceeds a predetermined size.

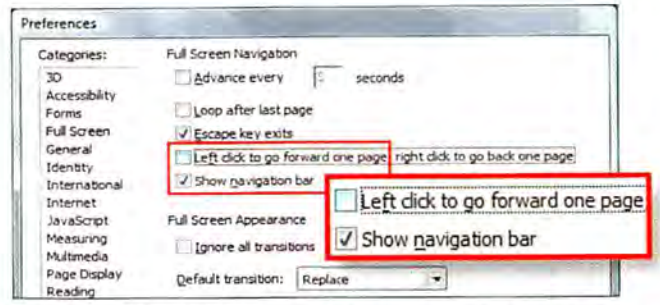
You can use the compression built into Windows (or use a third-party compression app such as the $30 WinZip; visit find.pcworld.com/57817 for the free trial) to zip files before sending them, but that process takes too long. So instead, use Outlook, Outlook Express, Vista's Windows Mail, or another e-mail program to zip files on the fly.

Create your message and click the attachment icon. Select the files you want to attach, and right-click the group (or the file, if you're sending just one). Next, choose *Send To• Compressed (zipped) Folder*. A new file with compressed versions of the selected files is created. Windows names this version the same as the first file in the group, but with the '.zip' extension. Rename the file if you like; then select it, click *Insert*, and send it on its merry way.

If you use Outlook and are willing to spend a little, use the $20 WinZip Companion for Outlook (find.pcworld.com/57819), which zips all of your attachments automatically as you send them.

—Preston Gralla

Freshen Up Adobe Reader's Interface



CHANGE THIS OPTION in Reader's Preferences to navigate in full-screen mode via the navigation toolbar rather than via mouse clicks.

YOU'LL GET MORE control over how documents look in Adobe Reader by tweaking its toolbars and menus.

Click *Edit•Preferences*, or press **<Ctrl>-K**, to view your customization options. For example, you should select *Reading* to choose an option on either the Reading Order menu or the Screen Reader Options menu to alter how documents are displayed. (Acrobat 8's new audio reader adds controls for volume, voice, and other variables.)

Using Reader's Full Screen mode to view documents increases your display space. To change your full-screen options, click *Edit•Preferences•Full Screen*. To move between screens with the navigation toolbar instead of by clicking the mouse, uncheck *Left click to go forward one page, right click to go back one page*, and select *Show navigation bar*. You also have the option of hiding the cursor or keeping it in view (by default it hides after a set number of seconds).

To move text and pictures from a PDF to other apps, click *Select Tool* on the Basic toolbar, highlight the items, and choose *Edit•Copy*. Now open a file inside the target application—say, Microsoft Word—and select *Paste* (or press **<Ctrl>-V**). All or most of the formatting will be converted, with line breaks in place (if the person who created the PDF didn't lock it).

—Michael S. Lasky

ANSWER LINE

How do I tell if my computer is a zombie?

Wendell Daar, via the Internet

TALK ABOUT A scary phenomenon! By means of a virus or worm, a criminal takes over your PC, which behaves normally until it receives instructions over the Internet to mass-mail spam, take down a company's network as part of a Distributed Denial of Service (DDoS) attack, or log your keystrokes to gain access to your bank account. When it's done, your system reverts to acting like a normal PC.

You can't easily tell if your PC has been zombified. The usual malware warning signs—computer slowdowns, odd behavior—apply to zombies, but they could just as easily be signs of lesser problems. Watch your firewall software for strange outgoing traffic. Run multiple online virus scanners (browse to find.pcworld.com/57535 for details). Also, check out Symantec's free Norton AntiBot Beta (find.pcworld.com/57759), which specifically looks for bot infections. Still, don't consider yourself safe in the event that AntiBot doesn't turn anything up.

Some zombie or bot applets evade virus and malware scanners by installing a rootkit. Free rootkit-revealing software like Sophos Anti-Rootkit (find.pcworld.com/57760) and Sysinternals' RootkitRevealer (find.pcworld.com/57761) help, er, root those infections out.

Though your ISP can identify zombies among its clientele, that doesn't necessarily mean you can contact the company's support staff and reach someone who knows what you're talking about.

I got mixed results with my own ISP, AT&T Yahoo. The phone tech support person had never heard of a zombie. An e-mail query yielded another ignorant reaction, but a forceful rejoinder produced a letter promising to inform me of any suspect behavior.

Unfortunately, according to Trend Micro network architect Paul Ferguson, it's not in ISPs' economic interest to be terribly diligent or helpful about this. "The vast majority do nothing at all," he says.

If e-mail bounces back to you with a notice that you've been blocked, your address may be on a spam blacklist—most likely as a result of being zombified. More than 100 such lists exist, and many ISPs use them to block the IP addresses of known spammers.

Even if your e-mail isn't bouncing, find out whether you've been blacklisted: Go to find.pcworld.com/57536 to view the IP address that you send out to the world—probably your router's. Select the address and choose *Edit•Copy* to copy it to the Clipboard.

My favorite blacklist site is Robtex (find.pcworld.com/57537). Paste your IP address into the text box on the top of the page, and click *Go*. If any of the blacklist sites that appear are shown in red, you have a problem. Use the list's contact information to find out why you're on that list and how to get off of it.

Prevention is the best medicine: Keep Windows and your antivirus, firewall, and other security software up-to-date. This will reduce your chances of infection from almost certain to unlikely.

—Lincoln Spector

ILLUSTRATION ZOHAR LAZAR

STEP-BY-STEP

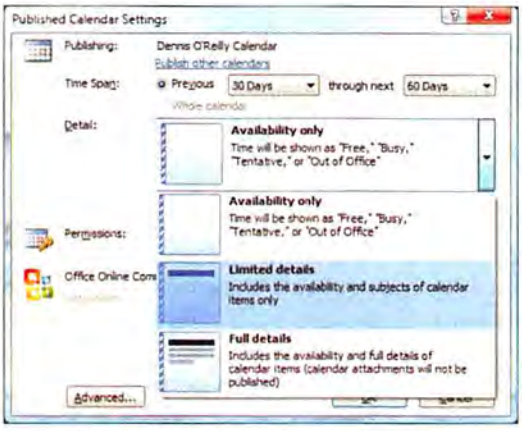
Put Your Outlook 2007 Calendar Online

YOU CAN SHARE details from your Outlook 2007 calendar with anyone by publishing it to the Web via Microsoft's Office Online service (office.microsoft.com). And the topper: It's free!

You're just six instructions away from letting the world know your whereabouts...and whatabouts.

1. Open your Outlook 2007 calendar and click the *Publish My Calendar* link on the left side. A wizard will walk you through the process. Sign in with your Windows Live ID (any Hotmail or MSN account will do). If you don't have a Windows Live account, the wizard will prompt you first to create one and then to sign in.

2. After you sign in, a form will appear, asking you to specify the calendar's time span and to set permissions for who can view it (anyone, or just the people you choose). Click the down arrow to the right of Detail to choose how much information to show; for example, you may want to list the actual appointments and descriptions, fewer details, or merely general terms such as "free" and "busy."



CHOOSE HOW MUCH info to share via the Detail options listed in Outlook 2007's Published Calendar dialog box.

3. By default, your Office Online calendar will regularly and automatically update to reflect changes you've made to it in Outlook. If you would prefer that it not update at all, click *Advanced*, select *Single Upload*, and click *OK*.

4. When you're ready to publish, click *OK*. A notice will ask if you'd like to invite others to view your calendar (see the image below). Click *Yes* to send invitations.

5. To see your calendar, sign in to Office Online with the account you used to publish the calendar (you may have to select the *My Office Online* link at the bottom of the home page). Next, click *Outlook Calendar Sharing Service* on the left side of the page, and finally choose your calendar.

6. To enable others to view the calendar, all you have to do is send them the URL.

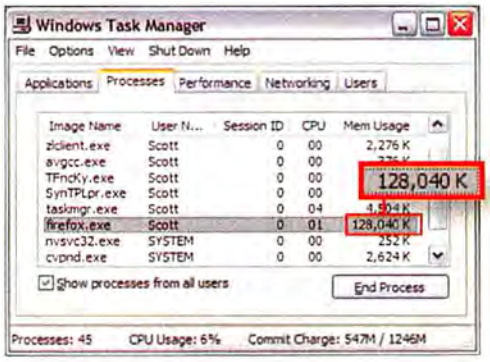
BONUS TIP: To put your calendar on any Web site, save it as an HTML page and post it as you would any other HTML page. The calendar won't be "live"—you'll have to update it manually to reflect any changes. Open your calendar in Outlook 2007, and choose *File•Save as Web Page*; from the screen that appears, select the duration of the calendar and say whether to include appointment details. Give the calendar a title. To add a background graphic, check *Use background graphic* and browse to it. Name the file, making sure to give it an .html or .htm extension. Change the file's location by clicking the *Browse* button and navigating to a new spot. Finally, upload the file to your Web page, as you would any other file.

—Preston Gralla

Restart Firefox to Reclaim Memory

EVEN IF YOU cap the number of add-ins (which can be buggy memory hogs), close tabs after viewing them, and limit your cache, Firefox can bog down your PC by consuming vast quantities of RAM. To find out how much memory Firefox uses, press **<Ctrl>-<Alt>-<Del>** to launch Windows' Task Manager, click *Processes*, and scroll to the *firefox.exe* entry. Depending on the particular pages that you've viewed recently, the amount listed in the Memory (Vista) or MemUsage (XP) column can be hundreds of megabytes. To curb its appetite, exit Firefox and relaunch it; Task Manager will tell how much memory a fresh instance uses.

—Scott Spanbauer



STEVE BASS'S HASSLE-FREE PC

My Six Favorite (and Free) Windows Annoyance Busters

A memory tester, a right-click cleaner-upper, a bullet-fast app launcher, a file-name case fixer, a PowerPoint highlighter, and a file annotator top my must-have utility list.

I GET LOTS of e-mail asking if I have a smart fix for a dumb computing hassle. Boy, do I—times six. Here are my freebie favorites.

Diagnose Faulty RAM

The Hassle: *My PC crashes abruptly, up to a dozen times a week. I've tried every troubleshooting trick I can think of. Any ideas?*

The Fix: Your PC's memory modules might be failing. Check them with Microsoft's Windows Memory Diagnostic tool (find.pcworld.com/57525). Burn the program onto a CD (Burnatonce is quick and easy; find.pcworld.com/57526), and then boot from the CD.

SAVE KEYSTROKES BY typing the first few letters of the name of a program and then letting Launchy find and open it for you.

Fix Right-Click Messes

The Hassle: *The context menu that appears when I right-click a file in Explorer or on the desktop is full of items I never use.*

The Fix: Why don't you give FileMenu Tools (find.pcworld.com/57523) a try? The program lets you customize the context menu by removing unused commands that other programs have added; ditto for entries on the 'Send-to' submenu.

Open Apps in a Jiffy

The Hassle: *My Start menu is jammed with shortcuts I don't need, and I can never remember where the ones that I do use are hiding. I spend more time shortcut-hunting than working.*

The Fix: Quick, get a copy of Josh Karlin's Launchy (find.pcworld.com/56804), a clever little keyboard-shortcut maker. Press **<Alt>-<Space>** to open Launchy (you can change it to another combination if you like), tap the first few letters of the program you want to open, press **<Enter>**, and Launchy will launch it (see the screen shot above). If you use several files in a specific folder—say, Adobe PDFs or Word docs—just add them to the list of folders that you want Launchy to monitor.

The tool has more cool tricks. For example, you can send a search request to Google, MSN, or Yahoo. To search Google, type **google**, press **<Tab>**, type your search query, and press **<Enter>**. Launchy displays the search results in your browser. This trick also works with Amazon, Netflix, Wikipedia, and the IMDB movie database. You can even add your music folder to Launchy for quick access to your favorite songs.

To open a Control Panel applet, type the first few letters of its name—**mouse**, **sound**, or **add-remove**, for instance. For fast access to a Command box, add **cmd** to Launchy's Runny plug-in. The Weby plug-in automatically loads Firefox bookmarks and keywords.

File-Name Case Fixer

The Hassle: *It's a small issue, but it bothers me: The files I import from my camera are all uppercase. I want them all lowercase.*

The Fix: Recase to the rescue. Highlight one or all of the files—whether upper-, lower-, or mixed case—and Recase (find.pcworld.com/57524) will change them to the case that's just right for you.

PowerPoint Attention Getter

The Hassle: *I need a quick way to bring my audience's attention to a specific spot on a slide during my PowerPoint demos.*

The Fix: With ZoomIt (find.pcworld.com/57527), you can highlight any spot on the screen. This sweet utility also enables you to use your mouse to draw on a specific area or type a short message.

Take Notes on Files

The Hassle: *I have hundreds of files with cryptic file names. No surprise that I can't remember the contents of half of them.*

The Fix: I use AnnotSX (Annotator Shell Extension; find.pcworld.com/57529), a gem that lets you jot unlimited notes for any file. Just highlight the file, press **<Alt>-<Enter>** to access its Properties, choose the *Annotations* tab, and start typing your notes. ●

READER DISCOVERY

Play MP3s on Your Phone

I HAVE A brand-new cell phone with multimedia capability. The good news: It plays WMA files. The bad news: All of my recordings are MP3s. NBX Audio's NBFree MP3 to WMA Converter (find.pcworld.com/57530) does the trick. The app's interface isn't great, and I had to fool around to find the right frequency and bit rate when converting to make the WMAs play on my phone. But now I can play music from my phone—and it didn't cost me a nickel.

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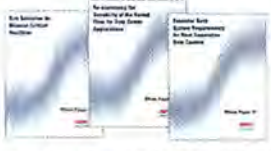

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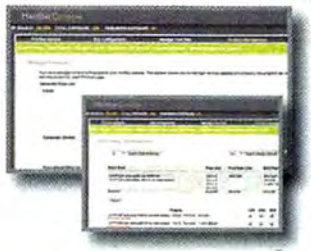

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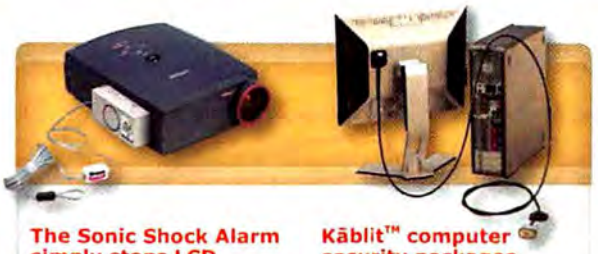

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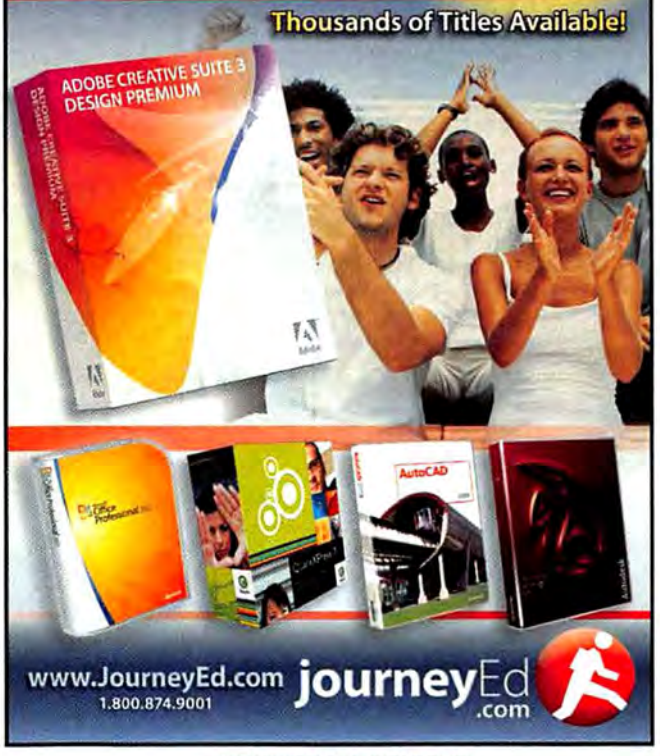

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STEPHEN MANES

If You're Not a Geek, You'd Better Know One

Tech is so illogical and arbitrary, it needs folks like you and me to explain it to everybody else.

BAD ENOUGH THAT I'm my own tech support person. Thanks to the muddled magic of digital technology, I also get to handle the support calls of friends, neighbors, and acquaintances. It's not that I'm so smart. It's that truly smart people have learned they can get more done by willfully ignoring the petty details of the technologies in their lives. When something goes wrong, they figure they can find some kindly geek to set things straight. And they're right.

Concepts that seem obvious to those of us who cultivate technical savvy are utterly alien to the nontech majority—with good reason, since most products, services, and technologies aren't nearly as simple as techies and tech companies would like to believe. Just ask anybody with half a dozen remotes on the coffee table and a spouse who merely wants to watch a pay-cable show—even without the complication of getting it to play through a home audio system.

Take a flight anywhere, and you'll discover that few people know how to turn off their cell phones' annoying startup and shutdown tunes. Backing up files? I've known people who thought that copying their data to a second drive was a great strategy—until the first drive crashed and they learned that the second "drive" was actually just another partition on the same dead hunk of hardware.

I'm still astounded at how many users of free e-mail services such as Yahoo Mail either don't know or don't care that ads of questionable taste are appended to their most serious messages. The subject line of a brief but urgent note from our local block-watch captain read "Watch out for an arsonist in our midst tonight!" Neither intended nor seen by the sender, the e-mail's tagline: "Sick sense of humor? Visit Yahoo TV's Comedy with an Edge to see what's on, when."

With the Web's increasing sophistication, things that used to be straightforward no longer are. Once upon a time, the mail you saved or the document you created resided on your hard drive. Now it may live on your provider's server unless you take special action to make it local. That's fine until you need the file 38,000 feet above Albuquerque, or the provider's system crashes or its business goes bust. Plenty of users fail to grasp basics like these—until it's too late.

ILLUSTRATION: JOHN CUNEO

Ignorance Can Be Bliss

But people who don't know that something is amiss with their tech may be happier for it. Consider the millions of TV watchers who apparently think they're getting a great picture from any show that proclaims "broadcast in high-definition" even though they don't own a high-def TV—or even though the set they do own isn't connected to a high-def program source. Hey, think of the money they're saving!

Those of us who make our living by paying attention to such details tend to get exasperated when relations and friends who are no longer "novice users" fail to understand or care about what we consider simple. What we forget is that the "logical" tech world we take for granted is in fact highly arbitrary, whimsical, and proprietary. Why can't you plug cell phone X into cell phone Y's charger when they seem virtually identical? Why will phone X, but not phone Y, work in Europe? Why won't a document created in Word 2007 open in Word 2003?

If you follow the world of technology, you probably know the answers to these and other mysteries. Folks who don't have a clue are probably getting real work done—until they blow up their cell phone or can't open a Word document from their boss. And that's when, inevitably, they'll once again depend on the kindness of geeks. ●

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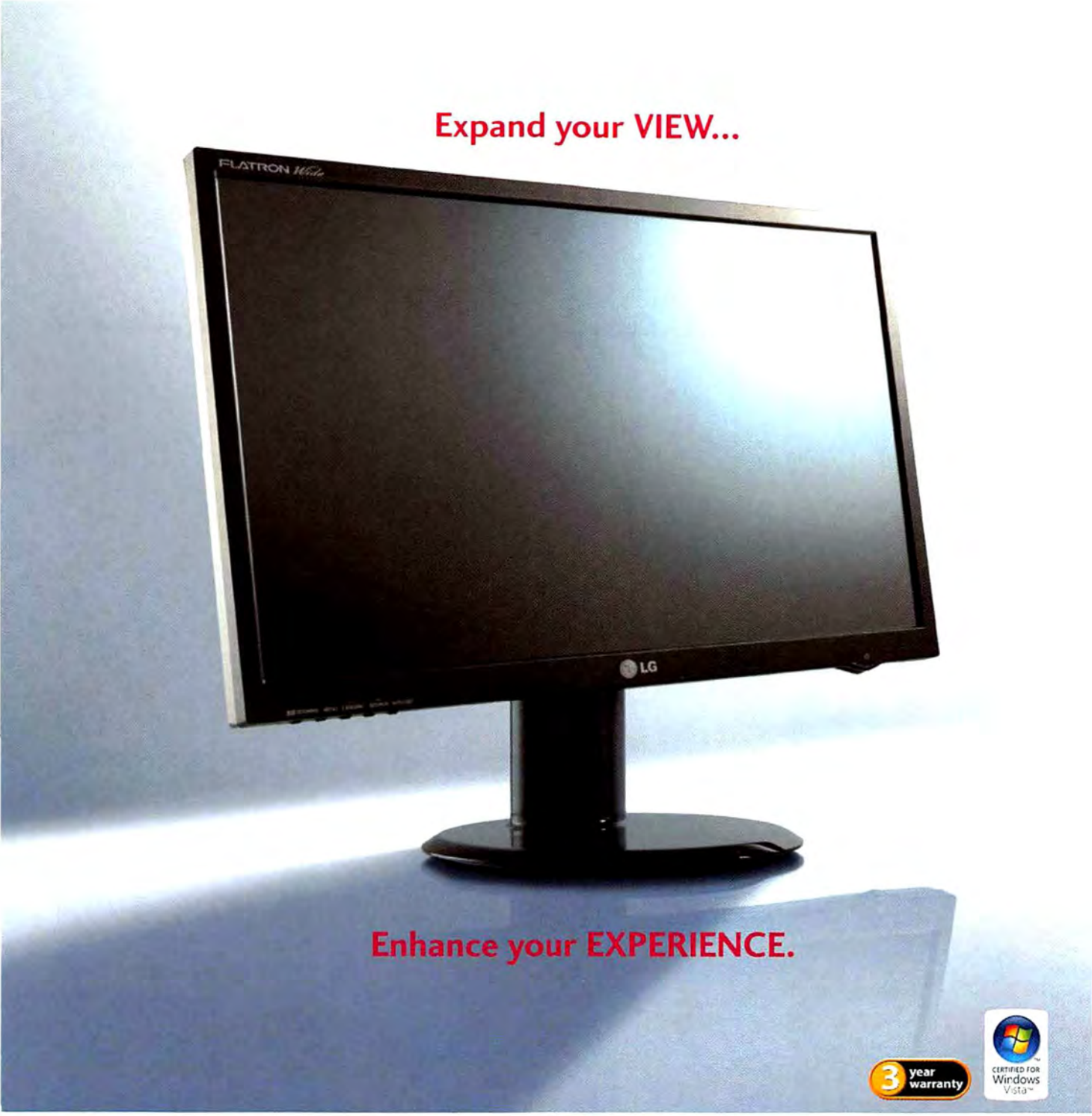
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