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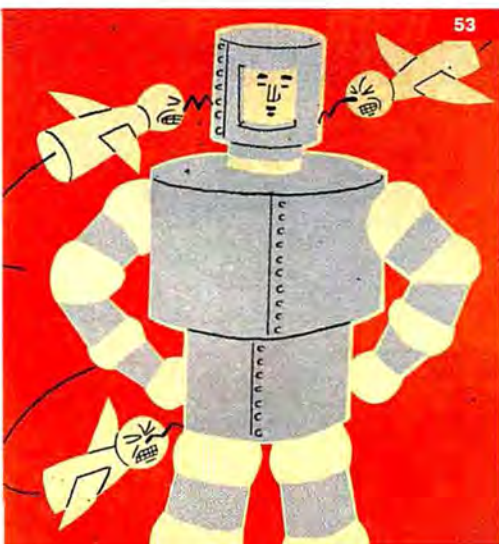
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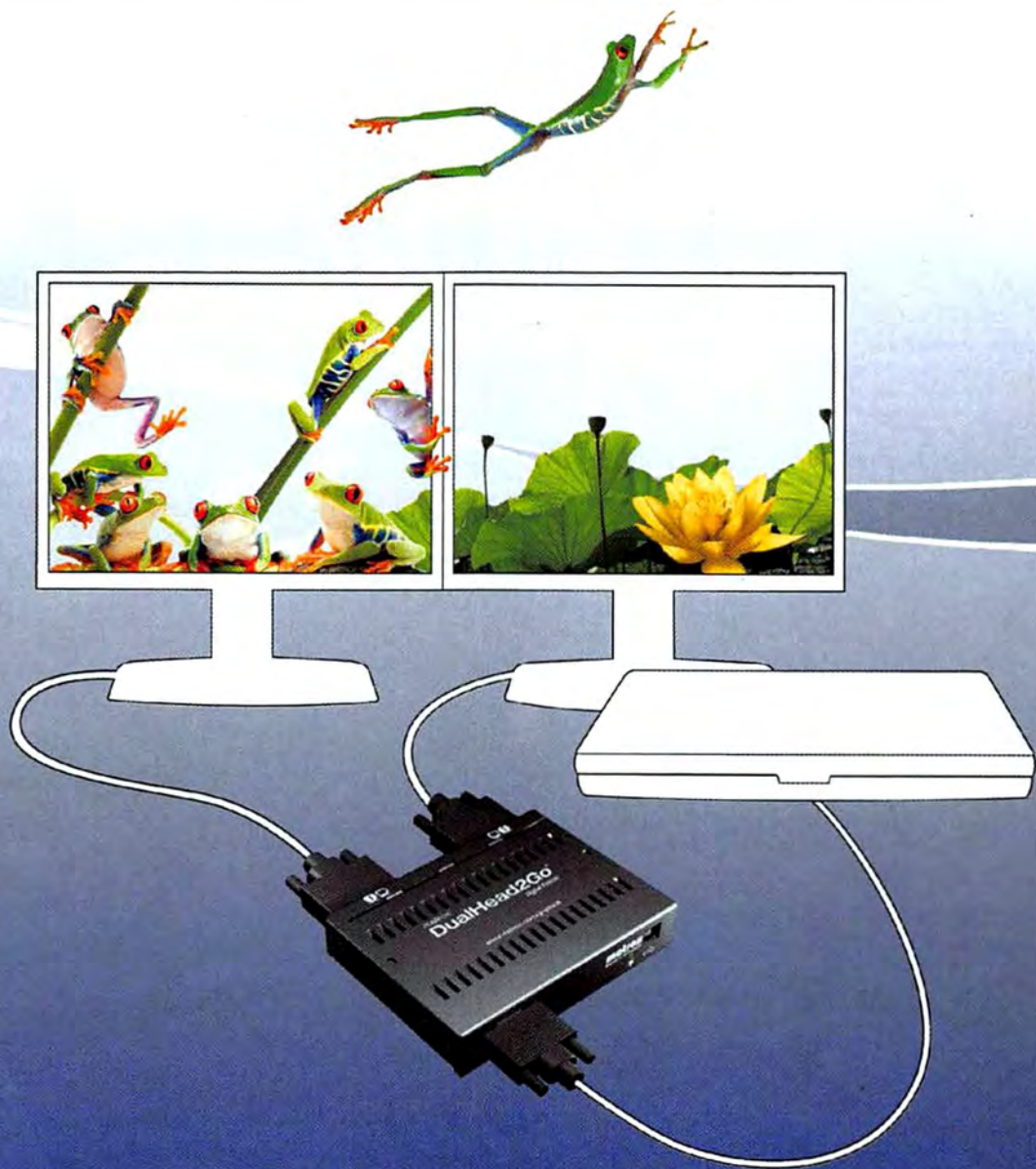
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PCConnection



Insight



Help! Internet TV Is Ruining My Marriage

MY WIFE HAS become infatuated with another man. Only two facts keep our marriage together:

1. The object of my wife's affection, Jim Rockford, is fictional.

2. James Garner, who played him in *The Rockford Files*, is 80 years old and happily married.

I don't blame my wife for her fascination with a 1970s TV detective. I blame Internet video. As Melissa Perenson details in "The Best TV on the Web" on page 105, the Net now offers so many great options for seeing new and vintage video that it's understandable how anyone could get sucked in, even a technophobe like my wife.

The whole affair started soon after Netflix introduced its Instant Watching capability. That feature allows my wife to watch the hunky PI punch guys out, squeal tires, and solve crimes in full-screen, surprisingly crisp video anytime she wants. And I have to admit that hers isn't the only Internet video obsession in the household.

How can a guy compete when his wife can see her hero in crisp, full-screen video anytime she wants—and commercial-free?

Hulu lets me indulge my own fixation with the hilarious comedy *Arrested Development*, which I discovered late in its all-too-short life on TV. Thanks to Hulu, I can see the episodes I missed.

This summer's Olympic Games show what's possible with streaming even live sports on the Web. NBC's Web coverage will be unprecedented, with more than 2200 hours of live video (see find.pcworld.com/61283 for more details).

What makes the wealth of TV-like content on the Web surprising is that the form clearly is still in its infancy. Networks are experimenting with the best ways to present their shows on the Web and figuring out how much video sharing they'll allow. Despite the growing pains, though, I find that my PC remains a more reliable source of video I really want to watch than my TV. That's because the dynamics of TV on the Web are so completely different.

Even with hundreds of cable channels, I'm still at the mercy of whatever the programmers have decided to air when I happen to tune in. My DVR helps, but only if I take the time to study program listings and figure out what's coming up that's worth recording.

TV on the Web really is on demand. If I want to go on a binge of *The Bob Newhart Show*, I can, whenever I wish. And I don't have to be in my living room. Anywhere that I have broadband and a PC can be my temporary theater.

I think there's little question that Internet delivery of video will eventually replace distribution over cable and satellite systems. But before that happens, two big things must change.

1. We need true broadband: In the United States, only a select few have fiber broadband connections—with their 30-to-100-megabits-per-second speeds—available. Kajsa Linnarsson writes on PCWorld.com about a filmmaker in rural Northern Sweden, up where the reindeer roam, with a 10-gigabits-per-second connection (for Kajsa's series on broadband, go to find.pcworld.com/61284). Such connections everywhere will allow Net TV to be truly high-def.

2. We need to pay: I love the fact that most Internet video currently is free, and I think some video always will be. However, I also believe that we need to be willing in the future to pay for a subscription, as we do for cable or satellite. But unlike with a cable subscription, we shouldn't accept any deals that don't let us pick the video we want. That way I can uncheck *The Rockford Files* on my monthly bill and save my marriage. ●

Editor Edward N. Albro oversees PC World's features, news, and how-to content.

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PCW Forum

Our story on third-party replacement printer ink struck a chord with readers on both sides of the argument. Many readers report problems with such inks, while others say the inks are fine and save money. See our findings at find.pcworld.com/61294 and click on 'Comment' to tell us your experience.



and I've been advocating for it for years, but the two malware experts I spoke with both agree—as have all of the system security experts I've spoken with over the years—that while Linux is indeed a tough OS to crack, it isn't impervious to threats.

Returned Products Work Fine

Here's my take on why products are returned [*Consumer Watch*, July], most after only 20 minutes of use: Today's manufacturers try to do too much with a single product. In other words, far too many options! It leaves the average consumer bewildered and unable or unwilling to cope. I'm a federally licensed broadcast engineer with over 40 years of experience, and this is my rule: If I can't get a piece of hardware or software going in 30 minutes, it goes back, period! And yes, I've returned countless products and computer programs for that reason. My advice to vendors is, if you want to save the \$13.8 billion lost in returns, keep it simple, stupid!

Gil Allen, Redford, Michigan

The PlayStation 3 is versatile, yes, but the noise it generates makes it a poor choice for enjoying movies.

Jay Lockenour, Philadelphia

5 Reasons to Ditch Your Cable Box or Satellite Dish

I totally agree with Dan Tynan's article [find.pcworld.com/61293]. Not only can you use the services he recommends, but you can go to the cable networks' Web sites and order HD pay-per-view and a whole plethora of services. Thankfully, I can now tell Comcast to come retrieve its clunky, gray, latency-ridden cable box.

Breez, from the PCW forums

No thanks. I will stick with HD cable on my 48-inch wide-screen HDTV with Dolby Digital surround sound, and of course the comfort of the couch. I ➤

Cheap Ink: Will It Cost You?

I bought third-party ink for an HP 690C once. Just once. The ink ran all over the inside of the printer, and afterward ink from the replacement HP cartridge migrated from tank to tank. Pure yellow came out orange; blue came out green. It never printed right again.

Pgettys, from the PCW forums

Testing Lexmark for quality is like testing Windows for quality. You can't, because they both suck. I'm sick of people giving refillers a bad name.

Nicesites, from the PCW forums

I have been using third-party ink in both my Canon printers and my HP Photosmart for years, and guess what? No problems. I overfilled one Canon cartridge once, it leaked, I cleaned up, and other than ink stains on my fingers, all was well. Photographs and letters that I've printed with the third-party inks are just as bright, sharp, and colorful, and they haven't faded.

Anysia, from the PCW forums

I have been using an HP Photosmart 2610 All-In-One for almost three years now, and it's still running flawlessly. Never have I bought third-party or

"secondhand" ink cartridges, and I don't plan to do so anytime soon.

JohnT, from the PCW forums

I have personal experience with some of these so-called cheap cartridges for both inkjet and laser printers. Their quality in no way matches the printer manufacturer's ink quality. These cheap cartridges also fail, and they can ruin your printer. I know that the printer manufacturers charge high prices; but until a reliable source comes along, that's what we're stuck with.

Dwaine, from the PCW forums

Fact Check: Linux Is Immune

I am really dismayed at *Fact Check* [*Here's How*, July]! You need to do a little research on your own, not just believe everything you are told. If you do, you will find that the Linux file/user structures and privileges inherently make it difficult for someone to get anything harmful into a 'nix system. This seems like yet another article geared to give bad press to Linux.

John E. Carte, Pittsburgh

Senior Editor Robert Strohmeier responds:

I stand by the column as written. I've been a Linux user for more than a decade now,

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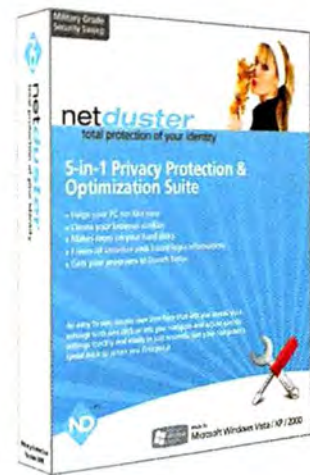
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would have to spend a lot of money to assemble a PC system that comes close to the performance of my home theater.

Free2speak, from the PCW forums

No, I don't think I'll ever get rid of cable. I'm addicted to the high-speed Internet it brings me; the digital-TV services are just a plus for me. I have a very fast and efficient desktop, but I have no desire to watch TV shows on my 22-inch wide-screen display.

Mjd420nova, from the PCW forums

I connected my PC to my 42-inch TV long ago, and I watch less cable content all the time. The article's author is right: There's a lot more content out there than the limited choices that the local cable monopoly offers. Not only that, but video games look and sound awesome using the television and a set of surround-sound speakers.

Ogman, from the PCW forums

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 letters@pcworld.com. ●

CORRECTION

IN OUR AUGUST story "20 Features Windows Ought to Have (And How to Get Them)," we stated that FastStone Capture is a free utility. While that was formerly the case, the current version of the software costs \$20 after a 30-day trial period. We regret the error.

TELL US WHAT YOU THINK

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

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Mailbox Size	2,000 MB	1,000 MB	75 MB
Website Builder	18 Pages	Additional \$8.09/month	✓
Marketing Center	✓	✓	—
Premium Software Suite	✓	—	—
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Forward

15 Ways Microsoft Can Reinvent Itself

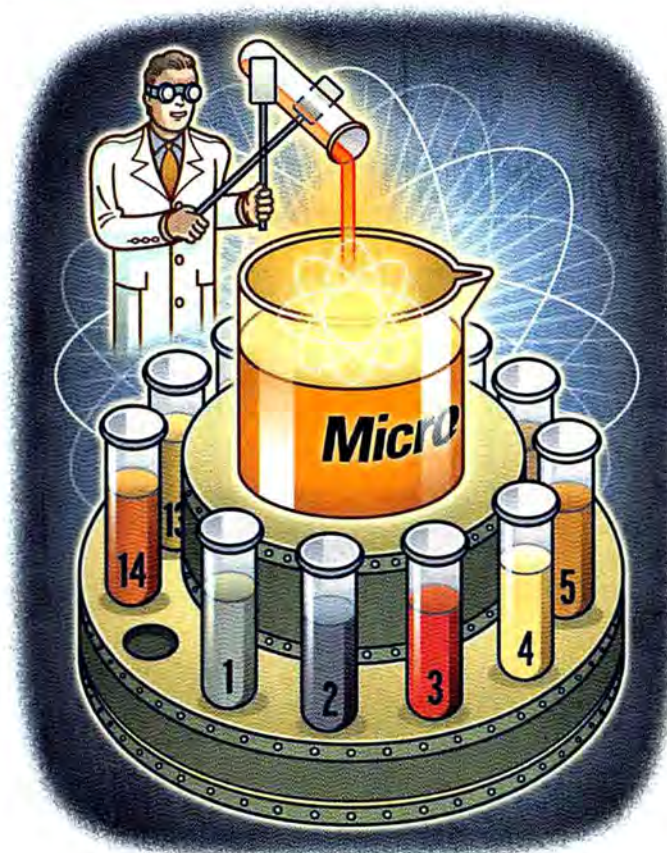
BY HARRY McCracken

A COMPUTER ON every desk and in every home, running Microsoft software. That, Bill Gates has often said, is the vision on which he and Paul Allen founded their software company in 1975. While there's debate over when the mantra was first articulated—the earliest known instances go back only to the mid-1980s—this much is undeniable: Microsoft indeed made that audacious goal a reality.

A Second Act?

Now that Gates has stepped down from day-to-day management of the company, another fact is clear: The modern Microsoft remains a company in search of a second act. True, it's still one of the world's most profitable enterprises, raking in more dough in its 2007 fiscal year than Adobe, Apple, Google, Oracle, and Yahoo, combined. But the cracks in the Microsoft hegemony aren't just showing, they're growing.

Its cofounder has retired, and its latest, biggest product has been lambasted. What does Microsoft do to remain relevant? Here are 15 suggestions.



On the Web, it's Google, not Microsoft, that inspires the blend of awe and fear Gates and company commanded in the 1990s—and Microsoft's answer, namely its ongoing attempts to ac-

quire Yahoo, has fizzled, at least as of mid-July. The software giant's efforts to extend Windows and Office to the Web have been lackluster and confusing. Old adversaries such as Apple and

gutsy upstarts such as Mozilla are making meaningful inroads on Microsoftian monopolies. And outside of Redmond, almost everybody seems to regard Windows Vista as a disappointment.

Here's some unsolicited advice for Microsoft—15 steps that could help the company thrive in the years ahead. Several of these ideas are clearly part of its game plan already; others, it would likely reject out of hand. And hey, certain points conflict with others. But unlike Steve Ballmer and his crew, I have the luxury of pondering Microsoft's future without having to devise a strategy to make it happen.

The Big Picture

1 Stop trying to be everything to everybody.

Microsoft makes software and services for everyone from humongous companies to little kids. It provides applications for PCs, servers, industrial devices, phones, GPS units, and cars. It's trying to be a major force in online

advertising. It manufactures gaming consoles and audio players and mice and keyboards and touch-sensitive tables. It even owns part of a cable news channel. No company on the planet could do all these things well, and Microsoft doesn't even do many of them profitably. Rather than jumping on every imaginable bandwagon, it would be smart to focus on core businesses such as operating systems, productivity applications and services, and programming tools. Possible role model: IBM, which is so disciplined about the opportunities it pursues, it decided to exit the PC business that it had itself created.

2 Upgrade continuously, not once every few years. Windows Vista is a tad stale in part because it feels like its features were determined years ago, in an earlier era of computing—which in fact they were. That staleness is a by-product of Microsoft's decades-old approach to software development and distribution. Google, by contrast, can push out fresh new features onto the Web almost as quickly as it can think of them. And even if Microsoft's bread-and-butter products remain desktop applications rather than Web-based services, they need to move to a model of ongoing evolution rather than once-in-awhile revolutions. Couldn't Microsoft Update, for example, evolve from a tedious patching system to a cool way to make Windows, Office, and other applications better on a day-by-day basis?

3 Be innovative—no, seriously. The marketing message from Redmond would have you believe that Microsoft and innovation are practically synonymous. In fact, the company is more mimic than innovator: When Apple put a tiny "Designed in California" on the back of every iPod, it was inevitable that the Zune would sport an equally microscopic "Hello from Seattle." It might do wonders for Microsoft's reputation if the company appointed a Chief Innovation Officer whose duties would include ruthlessly killing everything that smacks of pointless imitation.

4 Treat customers like kings, not peons. Microsoft rolls out copy-protection technologies that cause headaches for paying customers, then tells those customers it's doing so for their own good. It insists on doing away with Windows XP when legions of users still want XP. Even its corporate motto—"Your Potential. Our Passion"—is patronizing. The company that utterly dominated the computing world could get away with that attitude; the one that faces real competition on all fronts must treat customers and potential customers with more respect.

Windows: How It Should Evolve

5 Make Windows a seamless desktop-Web experience. Desktop software has its advantages, and so do Web-based services. Future versions of Windows would be most powerful if they were a bit of both. Maybe they will be: In February 2007, Bill

Gates told *Newsweek* about an appealing, "user-centric" scenario in which Windows syncs all of a user's files, settings, fonts, and other data across the Web, so they're accessible on any computer at hand. (Live Mesh, currently out as a preview, seems to be an early incarnation of this promising vision; see page 94 for more details.)

6 Reboot Windows. In 2000, Apple replaced the creaky operating system known as OS 9 with the all-new, thoroughly modern OS X. The daring gambit saved the Mac OS. Though Windows isn't as archaic as

OS 9 was, it's hard to imagine Windows staying viable for another decade without a new foundation. "Min-Win," a stripped-down version of the Windows kernel, might be that fresh start—but scuttlebutt says that it will not be a part of Windows 7, Vista's successor.

7 Split Windows in two. Long-term, the world needs a fundamentally new version of Windows. But the uproar over Microsoft's plans to kill off Windows XP shows that lots of folks just want a version of the OS that's familiar and compatible. The company already »

PLUGGED IN ALAN STAFFORD



AOL INCREASES DIAL-UP CHARGES:

Subscription fees for dial-up Internet rise by 20 percent. Hey, that's like Microsoft charging more for Windows 3.1!



VERIZON OFFERS RHAPSODY:

The music subscription service comes sans DRM. Now you can get sweet, sweet music on your dull, dull phone.



HANDS-FREE DEVICES FOR CALLS:

Now mandatory, per California law. Still waiting for hands-free ways to wolf Big Macs, shave, apply mascara.



FACEBOOK GENDER REQUIREMENT:

Users must say whether they're male or female. Because don't you hate it when your new BFF turns out to be a dude?



637,000 LAPTOPS:

The number lost at airports last year, a Dell-commissioned study says. Maybe Customs is still rifling through the contents.



WI-FI IN SOME 2009 CHRYSLERS:

And it's coming just in time. Now you'll be able to google where to find \$6-per-gallon gas for your 13-mpg SUV.



sells almost 20 versions of the operating system—so why not make both groups of people happy by offering both a legacy edition and a Windows that's new from the ground up?

8 Make Windows more boring. MS-DOS was a simple, unglamorous piece of software that focused on being a solid platform for applications from Microsoft and other companies. As Windows added tools for digital photography, entertainment, and communications, it became more complex and less satisfying. I'd love to think Microsoft might go back to basics in future versions of Windows, but one of the first public demos of Windows 7 involved a new version of Windows Paint. That's not a great sign. Microsoft should concentrate on making the OS more reliable and secure, and easier to use, rather than adding features to a paint program.

9 Make Windows Mobile the flagship. It's obvious that tomorrow's PC will be the descendant of today's smart phones. That's why Apple reinvented OS X as a mobile operating system for the iPhone. And if Windows can't adapt to that world, it'll die. But Windows Vista is too bloated to run well on cheap laptops, let alone phones, and Windows Mobile 6.1 has nothing cutting-edge about it. Rumors suggest that the first edition of Windows Mobile rewritten from scratch will be version 8, which supposedly won't show up for years. Wouldn't sooner be better?

Applications: Office and Beyond

10 Leapfrog Google Docs. Once upon a time, Microsoft productivity apps such as Word, Excel, and PowerPoint were also-rans compared with blockbusters like WordPerfect, 1-2-3, and Harvard Graphics. Then Microsoft earned much of its dominance of the office

Word, Excel, and PowerPoint are among Microsoft's most valuable properties—even the Office 2007 ones that the company has published as open standards. They would be an even more powerful asset if they were as widely used on the Web as Adobe's omnipresent PDF. How about releasing a unified Office file viewer—



There may have been a time when IE was a strategic asset for Microsoft, but today it's more of an albatross. So why not dump it for a leaner, meaner 'Internet Explorer' that's really the supremely customizable Firefox under the skin?

market the old-fashioned way: by building better software. Today, it shouldn't be all that hard to construct an online suite that trumps Google Docs—and nobody is in a better position than Microsoft to try.

11 Bundle Office with an online suite. Microsoft has approached the online-productivity arena so cautiously in part because it's worried about murdering one of its cash cows: The same people who pay hundreds of dollars for a copy of Office think that online suites should be free. Why not give those paying customers a great Web version of Office as part of the deal? Doing so might help show the world that essential Internet-based tools are indeed worth real money.

12 Make the Office file formats indispensable on the Web. The file formats for

ideally with some basic editing features—that would be a cinch to find, install, and use? (Office Live Workspace serves that purpose, sort of, but it's too complicated to become pervasive.) This would sure make more sense than XPS, Microsoft's half-baked response to PDF.

13 Take a studio approach to software. Microsoft Game Studios, the company's game-title arm, works as a loose federation of developers, some that Microsoft started, some that it acquired, and some independent. Examples include Bungie (Halo), Ensemble (Age of Empires), Lionhead (Black and White), and Rare (Viva Pinata). The end result: The average Microsoft-published game is arguably more interesting than the average Microsoft-published productivity application. If the company applied the same

system to productivity software, it might unleash an explosion of creativity.

14 Build Internet Explorer on top of Firefox. Okay, I've suggested this before. I understand that it remains an idiosyncratic and unlikely proposition. But it still seems like a good idea to me. There may have been a time when IE was a strategic asset for Microsoft, but today it's more of an albatross. So why not dump it for a leaner, meaner "Internet Explorer" that's really the supremely customizable Firefox under the skin?

15 Be a leading iPhone developer. "To create a new standard takes something that's not just a little bit different... It takes something that's really new and captures people's imaginations," Bill Gates declared in 1984. He wasn't talking up a Microsoft product—he was raving about the then-new Apple Macintosh. And despite the fact that the Mac competed head-on with PCs running DOS (and later with Windows), Microsoft was smart enough to establish itself as a major Mac developer. (It even introduced Excel on that platform first.) If Steve Ballmer were to embrace the iPhone with the same enthusiasm, Microsoft would make money—and the company's developers would learn things that could make Windows Mobile more formidable.

Microsoft may well manage to remain the world's largest software company for years to come, but it's going to need all the good ideas it can get.

Toshiba recommends
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Microsoft's New Offer: Subscribe to Office

MICROSOFT HAS chosen the name "Equipt" for a package of products that includes its Office suite, Internet security software, and other services, which it will sell for a \$70 annual subscription fee.

Equipt components include Office Home and Student 2007, Windows Live OneCare, Office Live Workspaces, Windows Live Mail, Live Messenger, and Live Photo.

Bryson Gordon, a group product manager for Micro-



soft Office, plays down suggestions that Equipt is an effort

to rival Google Docs and other free office suites, such as IBM Symphony. Equipt, he says, targets people who are looking for a PC security suite—such as Windows Live OneCare—and who might forgo buying Office as well in favor of using an older copy that they might already have or might pirate. Microsoft is selling Equipt first through Circuit City stores.

In determining the \$70 subscription rate, Gordon says, Microsoft took into account the pricing for both Windows Live OneCare (\$50 per year) and Office Home and Student 2007 (\$150 for a one-time license).

Customers can load Equipt on up to three PCs for the yearly subscription fee.

—Elizabeth Montalbano

GADGET FREAK DAN TYNAN



How TVs Will Get Much, Much Flatter

PLASMA IS DEAD. Front and rear projection? Fuggeddaboutit. LCD has a few good years left, and then it's sayonara, baby. TV technology's future lies in tiny phosphorescent molecules.

Organic light-emitting diodes—OLEDs—employ a thin layer of organic material that emits light when electricity passes through it. OLED displays need no backlight, so they're

ultrathin and flexible. They are also brighter, cheaper to manufacture, and more environmentally friendly than plasma displays or LCDs. Over the next few years, OLED will be coming to a boob tube near you, and later maybe to the walls of your house, or even the windshield of your car.

Thin and Rich

When Sony showed off its 27-inch active-matrix OLED

flat panel at last January's Consumer Electronics Show in Las Vegas, you could hear jaws dropping. A contrast ratio of a million to one, with pure blacks, blinding whites, and brilliant colors; no problems with viewing angles or ambient light; faster response times than LCDs; and low energy consumption—all on a pane of glass thinner than a Bic pen.

"OLEDs...reproduce the exact colors a movie maker intended," says Barry Young, OLED expert for DisplaySearch. "LCDs [and plasmas] can't produce 100 percent of the grayscales in the original image...; OLEDs can."

Right now, only one model is available: Sony's XEL-1, which measures 11 inches diagonally, costs \$2500, and has a short useful-life span.

But the XEL-1 is mostly a proof-of-concept item, says Young. OLEDs using newer materials are proving more robust, and eventually they'll long outlast plasma and LCD sets, he adds.

This year, the flat-panel industry woke up and smelled the diodes. Samsung SDI—the world's largest maker of OLEDs for cell phones and portable media players—is pumping half a billion dollars into new manufacturing plants. Epson, LG, Toshiba, and other major manufacturers of OLEDs are following suit.

Janice Mahone, vice president of technology

commercialization for Universal Display, says that consumers should start to see OLED panels in the 20- to 30-inch range in 2009. But it's likely to be two years or more before OLEDs can compete with LCDs on price.

A Flat Future

OLED isn't the only promising new TV technology. Micro-electro-mechanical systems (MEMS)—LED-powered displays that employ

millions of microscopic shutters to control light passing through them—use less power than OLEDs, but they trail OLEDs in development.

Mahone admits that LCDs have lots of life left, and manufacturers—who are loath to cannibalize their LCD sales—will likely try to keep OLED prices high for several years. In the long run, though, OLED sets will become cheaper to produce, thanks to having less electronics.

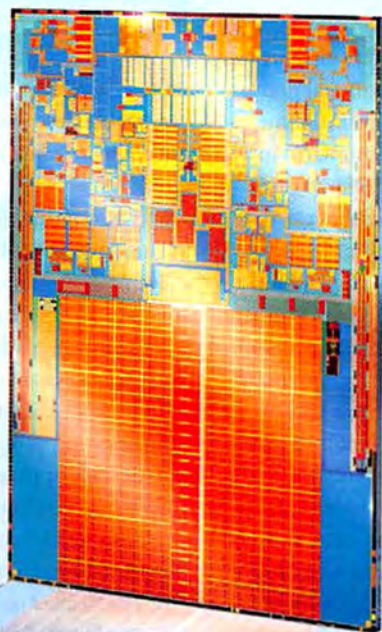
"You could have a paper-thin, wall-size OLED that displays video, shows photographs, or provides ambient light with a flick of a switch," says Mahone. Transparent OLED technology could provide the same instant control for the windows in your room or for a heads-up display on the windshield of your car.

If you're planning on buying a big-screen TV set this year, it won't be an OLED. But your next TV after that one very well could be—if it isn't built into the walls of your next house.

A paper-thin HDTV that covers a whole wall? Believe it. OLEDs are coming—not quickly, but when they do, LCD and plasma are doomed.



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Load Up Your 3G iPhone With These Free Apps

AFTER DROPPING all kinds of dough on a new iPhone and a 3G service plan, you'll undoubtedly want to save cash by loading great free programs on your new toy. Here are some suggestions. (Note: I tested all of these apps on a first-generation iPhone with the new 2.0 software installed, meaning that I could upload and download only at EDGE speeds.)

Truly Useful

AirMe: This utility enables you to upload digital photos directly from your iPhone to your Flickr account. Snap a pic with your iPhone camera, and AirMe geotags it (if you want it to) and posts it on your Flickr page within a minute. The process is much easier than e-mailing iPhone pics to yourself and then uploading them manually.

AOL Radio: Want to listen to tunes when your flight is delayed in Phoenix? AOL Radio scratches that itch, to the tune of more than 350 radio stations from across the United States. It's an audio-streaming app that



STREAM A VARIETY of stations to your phone using AOL Radio.

We looked at new applications for the iPhone that can help you choose restaurants, follow sports scores, upload digital photos, and more.



MAKE CHOOSING where to eat out fun, via Urbanspoon.

works staggeringly well even at the slower EDGE speeds.

Evernote: Save notes, photos, and voice recordings to a Web storage platform that you can access anywhere, with Evernote. If you're planning on using your iPhone to take a lot of notes or to snap a bunch of pictures while you're out and about, this app is a must-have.

Google Mobile App: Think of it as Firefox 3's "Awesome Bar" for the iPhone. This search-bar-on-steroids not only suggests popular query matches for you once you type in a few letters, but also searches your phone for any contact names that start with the same letters. Tapping a search result launches it in a browser window, and tapping a contact name lets you message or call that person.

Urbanspoon: This innovative application puts a new spin on restaurant recommendations. You can elect to have the iPhone use your

current location, or you can input a city manually. Either physically shake the phone or tap the 'Shake' button on the touch screen, and the slot-machine-like interface spins wheels bearing the names of neighborhoods, food types, and price ranges. When the wheels stop spinning, Urbanspoon's app recommends restaurants based on the variables that come up ('Mission [District] / Seafood / \$\$\$', for example). If random results aren't your thing, you can lock in preferred parameters to receive recommendations.

Just for Fun

Eventful: Configuring your alerts is a bit of a chore; but once this app is up and running, Eventful will let you know who's coming to town and what's going on in your neck of the woods—whether it be concerts, book signings, live sports, theater, public speakers, you name it.



PLAN YOUR social calendar by using Eventful to track events.

Pandora: Thanks to the iPhone version of the free music site, you may never need to use the iTunes Music Store again—as long as you like your music to play randomly. Just enter an artist's name, press the *Create* button, and listen as your selected artist and similar acts play in no particular order.

Remote: Use this app to control and play music stored

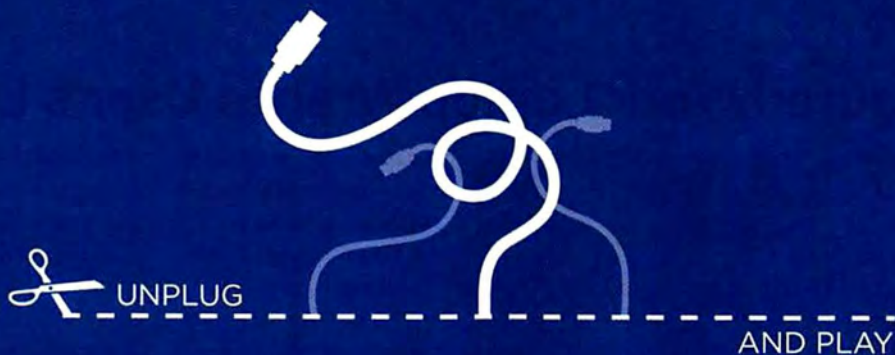


MOST TEAMS' SCORES are at your fingertips with SportsTap.

on your PC or Apple TV directly with your iPhone via a Wi-Fi connection. Once connected, select your iPhone in iTunes' 'Devices' list, enter a four-digit passcode on your iPhone's screen, and use it as a touch-screen clicker to play, pause, shuffle, and select songs. Remote worked well in my tests with iTunes.

SportsTap: If your sports obsession creates the need to receive MLB, NBA, NCAA, NFL, NHL, PGA, and other game results instantly, SportsTap is for you. The utility's interface is clean and intuitive, and scores load quickly, even at EDGE speeds.

—Tim Moynihan



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Misconfigured Work Laptop Wrecks User's Life

MICHAEL FIOLA vividly remembers the sense of shock and paralysis he felt when his supervisor dismissed him on that March morning last year.

"You are being fired for a violation of the computer usage policy," the supervisor said. "You have pornography on your computer. You're fired. Clean out your desk. Let's go."

A few months later, Fiola, an inspector with the Massachusetts Department of Industrial Accidents, faced child pornography charges, stemming from illegal images on his state-issued laptop.

The charges, however, were dropped in June, after an in-



vestigation by the Massachusetts Attorney General's office concluded that the state couldn't prove Fiola had downloaded the images. Tami Loehrs, the forensic investigator Fiola hired, had found that the laptop was misconfigured, riddled with malicious apps, and not getting

critical software updates. She also believes that his antivirus software was either misconfigured or not working properly.

"He was handed a ticking time bomb," Loehrs says of Fiola's laptop.

Fiola isn't the first person to face jail time over computer problems. Last year, Julie Amero, a substitute teacher in Norwich, Connecticut, was convicted of felony child endangerment after a computer in her classroom popped up pornographic ads. Amero faced the prospect of 40 years in prison until security professionals analyzed her computer and found that it was

infested with spyware. Following this discovery, a judge set aside the verdict.

Like Amero, Fiola doesn't know much about PCs. He says that he had no idea there was anything wrong with his laptop until he was called in and fired.

Though Fiola's name has been cleared, he lost his job and his health insurance.

The case shows how easily an employee may be accused of criminal PC activity that the person knows nothing about, says Fiola's attorney, Timothy Bradl. "This type of thing could have happened to anyone with a work-issued laptop," Bradl adds.

—Robert McMillan

BETA WATCH

EDWARD N. ALBRO

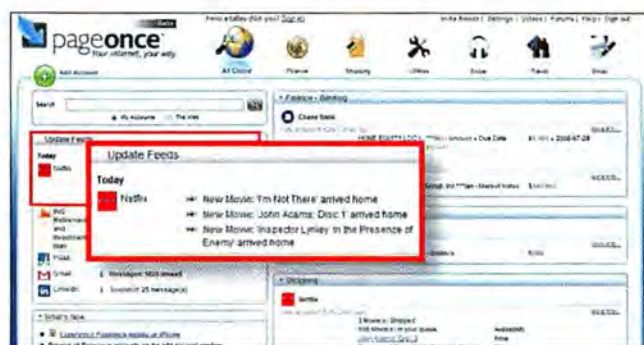


Webon: DIY Web Sites, No Ads

While everyone was busily establishing accounts on Facebook or MySpace, the field of simple Web-site creation tools was pretty dormant. Lately, they've been making a comeback, as some people decide they want more of an Internet presence than a profile page can provide. Webon, a division of Lycos, makes the whole process brain-dead easy, and even with a free account you can build a site without ads. Premium accounts start at \$9 and allow you to use your own domain and store unlimited numbers of photos. Webon officials say they'll have widgets to tie into popular social networks, too, but few were available when I tried the service. webon.com

Pageonce: Super-Aggregator

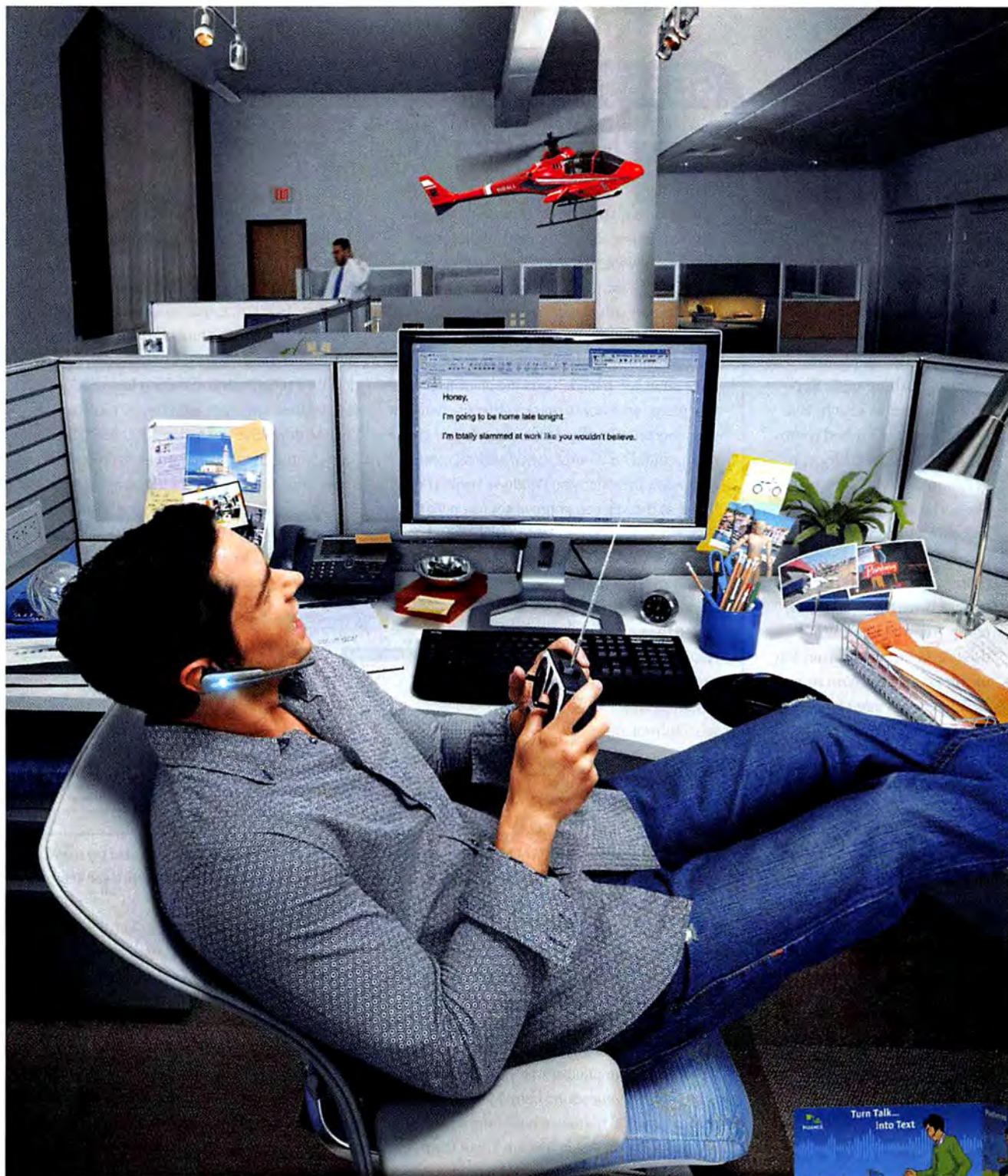
Combine the financial information that you can view through Mint.com, the social network updates that services like Friendfeed provide, and even access to your Web mail account, and you have Pageonce. Give the site your log-on information for financial sites, frequent flyer accounts, and subscription sites like Netflix, and you'll see highlights of each of those accounts in a tabbed set of pages. I think that the free service tries to cram a little too much into those pages (why anyone would want to use Gmail through the Pageonce interface is beyond me), but it's still a useful way to get an overview of your online state of affairs. pageonce.com



PAGEONCE GIVES YOU a quick overview of your online accounts, including financial services, social networks, e-mail, and more.

WhereIStand: Digital Debate Club

If you still regret that your high school had no debate team, WhereIStand.com is the place for you. As a member, you can state your position on such issues as, "It is acceptable for celebrities to sell photos of their children to magazines." Members of the free site can—and definitely will—agree or disagree, and say why. They can also add the opinions of public figures. The ensuing dialogue ain't the Lincoln-Douglas debates, but it's more sincere and high-minded than a lot of conversation on the Web. whereistand.com



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Google Lively Takes On Second Life

GOOGLE'S NEW TOOL, Lively, creates 3D social spaces on Web sites. The platform lets users create and personalize avatars and their own virtual rooms.

That's nothing new: Second Life does as much. But Lively users can embed rooms in their Web sites, blogs, or Facebook or MySpace pages. Users can show YouTube videos on virtual TVs and display images in picture frames, too. To run the Lively beta (www.lively.com), your computer must run Windows and either Internet Explorer or Firefox. You must be 13 years of age or older.

Immediately after the launch, some users complained because the platform supports only Windows. Some say that the interface is clunky, or crashes Firefox. But some give the cartoon-style graphics a thumbs-up.

"If anyone can make money [on this], it's Google," says Gartner's Steve Prentice.

—Mikael Ricknäs



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Better Music From Your PC, for Free

HIGH-QUALITY PC AUDIO is important to me, as I spend a lot of time listening to music on my desktop. In previous columns I've discussed the aural advantages of lossless audio codecs (like FLAC), discrete sound cards, and specialty music player software. Alas, even with all of those tools installed and properly configured, it is possible to suffer less-than-optimal sound on a Windows XP-based PC, as the operating system has a tendency to muck with music without your consent. Happily, a free, easy-to-use program, called ASIO4ALL (www.asio4all.com), addresses this annoying Windows habit. (I'm told that the app can improve sound on Vista PCs, too, but I have not tested that claim.)

So how does XP interfere with your music? Simply put, the OS hands off audio chores to a piece of software called the Kernel Audio Mixer, or Kmixer, which automatically resamples audio files—oftentimes rather poorly—creating output that differs from the original recording. The effect is typically

pretty subtle, and if you are listening to low-bit-rate MP3s you probably won't notice it.

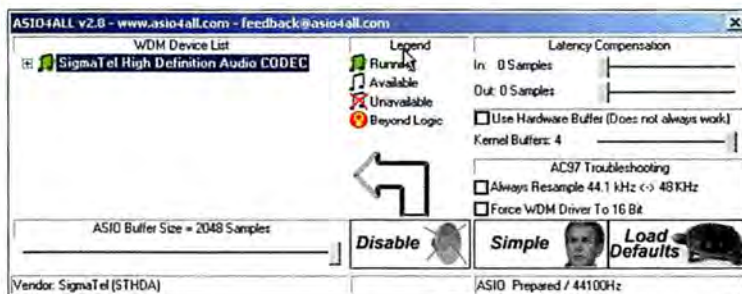
However, if you're like me and you listen to lossless audio because you prefer to hear music the way the artist recorded it, you can use ASIO4ALL to do an end run around Kmixer, sending an unadulterated version of the audio right to your sound card. Musicians who record using PC hardware have long used ASIO, which stands for Audio Stream Input Output. Mid- to pro-level hardware may include drivers with ASIO support, but lower-end hardware—such as integrated motherboard audio chips and some basic sound cards—tend not to. So an enterprising gentleman named Michael Tippach created ASIO4ALL. He says the original goal was to address the latency issues that Kmixer introduced into the audio recording process. It was only later that audiophiles started

Easy-to-use tool helps ensure that your high-quality music sounds the way it should.

using it to achieve better audio from their PCs.

To use ASIO4ALL, you'll need a compatible media player, such as foobar2000 or WinAmp (Windows Media Player and iTunes don't support it). I recommend installing foobar2000 (available at www.foobar2000.org). You also need to download the foobar2000 ASIO DLL (click on the *Optional Components* link on the above site); the DLL file should go into foobar2000's Components folder on your hard drive.

Next, download and install ASIO4ALL itself. Launch it by clicking on its *Off-line Settings* option in the Start menu. You should see your



ASIO4ALL: A PDF manual explains advanced tweaks, but you can also try these settings (first prescribed by a sage audiophile on the enthusiast site Head-fi.org).

computer's audio device highlighted; if you have more than one, select the one you intend to use.

Now launch foobar2000. Navigate to *File • Preferences*, and choose *Output*. In the resulting dialog box, select *Output* (under Playback), and then *ASIO Virtual Devices*, before clicking the *Add New* button. A new dialog box should appear with your audio device and various mapping coordinates (left, right, and so on) listed. Select one, then click *OK*, *Save All*, and *Close*.

Return to your music collection, fire up your favorite reference (highest quality or original recording) tunes, and start listening. You should hear a noticeable improvement in audio quality with even the default (Simple) settings.

I'm confident you'll get better audio through ASIO4ALL. And remember: It doesn't change anything in your drivers, so if you're not happy with the results, you can simply stop using it.

Dell recommends Windows Vista® Home Premium.



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Spore: An Innovative Game With a God Complex

FROM THE MIND behind The Sims and the SimCity series comes Spore (www.spore.com), a groundbreaking evolution simulation where you foster life, from its single-celled origins to its spread as a space-faring civilization. Spore's social-networking features set it apart from other games: Share

your creations (be they life-forms, vehicles, or buildings) with the world via the game, on YouTube, or by e-mail—and add metatags so people can search the global Sporepedia to download them. What image will you make your creatures in? You can bring them to life in early September. —Darren Gladstone



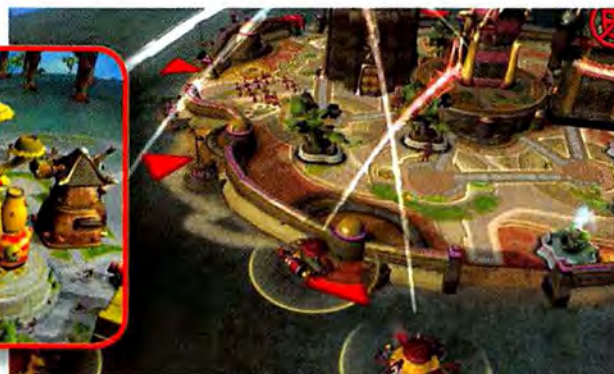
IN THE BEGINNING, you're living under a microscope. At least the rules are simple here: Eat anything smaller than you and run from anything bigger. Evolve. Stockpile genetic upgrades. Repeat.



MY CREATURE, the Flerp. Spore determines its movement and behavior based on my designs. From there, it's up to me to be aggressive (or not), multiply, and become the dominant life-form.



AFTER I'VE DECIDED I'm happy with how my creature evolved, it grows a brain and enters the tribal stage. (The Flerps are stuck with arms sprouting from their posteriors—don't ask how they shake hands.) From here, Spore shifts into strategy. I build out my tribe by either befriendng or beating down neighboring species.



HOW I DEALT with other tribes dictates how I'll advance as a civilization: through religion, economics, or brute force (or maybe a combination of the three if I want to be creative). After taking time to craft buildings and design vehicles, I'm ready to spread my influence over the planet of PC World.



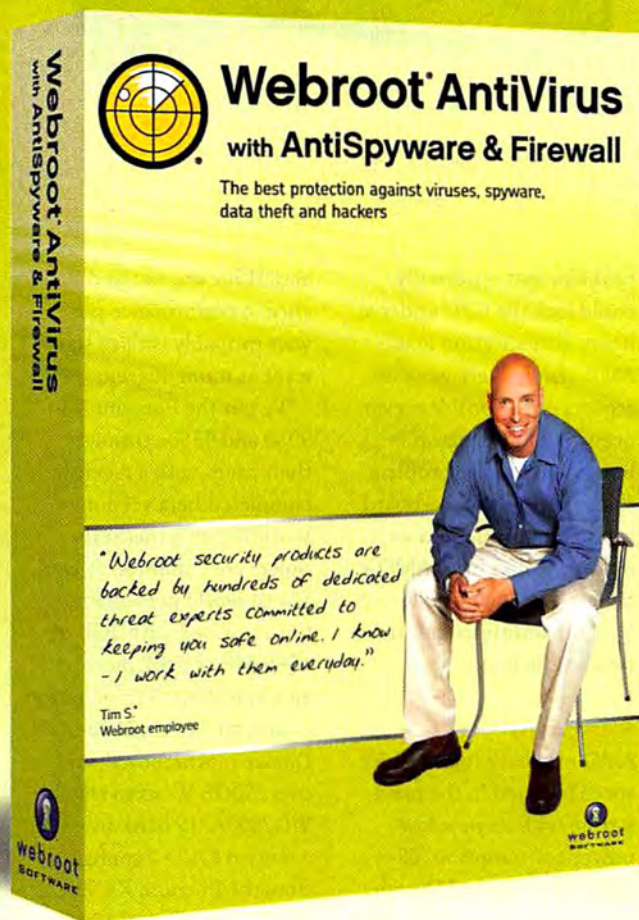
SPACE, THE FINAL frontier. Time to extend my authority over the stars and begin taking missions based on my species' past. I may



want to fill an interstellar-zoo world with my discoveries, or—more likely—wipe out worlds that displease me. The choice is mine.



November 2, 2006
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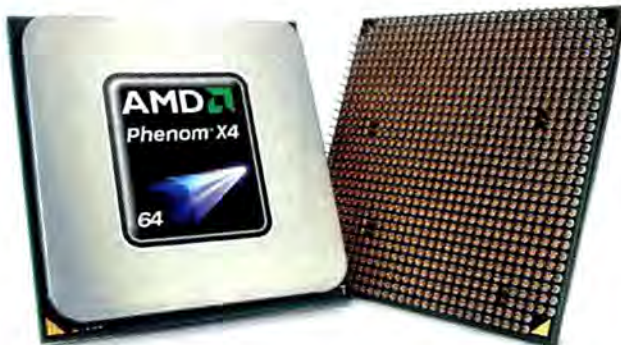
New AMD CPUs: Midrange Speed, Low Power Draw

AMD'S LATEST PHENOM CPUs are fast, but not the fastest chips around. That distinction falls to Intel's Core series of CPUs, which are 5 to 10 percent speedier, clock cycle for clock cycle. Still, the new units—the Phenom X4 9950 Black Edition, the Phenom X4 9350e, and the Phenom X4 9150e processors—cost less than Intel's most recent chips.

The high-end Phenom X4 9950 Black Edition (CPU only) compares well, price-wise, with Intel's quad-cores, especially the newer 45-nanometer-process Q9550, Q9450, and Q9300. For example, the Q9550 costs about \$550, whereas the Phenom X4 9950, which uses a 65-nanometer process, costs about \$235.

Performance-wise, though, it's more comparable to Intel's 65-nm Core 2 Quad Q6600 and Core 2 Quad Q6700. The 65-nm Phenom X4 9950 provides a 4 percent speed increase (2.6 GHz, up from 2.5 GHz) over the previous flagship product, the 9850. The Black Edition CPUs, like Intel's Extreme models, allow you to increase the clock multiplier. Most CPUs are locked at a fixed multiple of the front-side bus—for instance, 12X with a 200-MHz bus, or 2.4 GHz. The Phenom X4 9850 will now be available only in a cheaper, locked version.

All three new AMD chips use what the company refers to as B3 silicon, with a slight revision of AMD's original Opteron/Phenom design that eliminates a potential



AMD's new Phenom X4 CPUs cost and perform about the same as Intel's older quad-cores—and they trail Intel's best chips by a big margin.

problem that reportedly could lock the CPU under a heavy virtualization load. AMD claims there were no reports of the problem ever occurring in a desktop PC; but as soon as the problem was reported, motherboard vendors implemented an optional BIOS fix at AMD's behest. (See find.pcworld.com/61281 for additional information on the bug.)

A Green CPU?

AMD may have found a nice space for itself in the mainstream with its new low-power-consumption, 65-watt TDP (Thermal Design Power) quad-core Phenom X4 9350e and Phenom X4 9150e. The 9150e is slightly slower and cheaper than the 9350e—1.8 GHz to 2.0 GHz, and \$175 to \$195.

Intel's Core 2 Duo CPUs are also rated at 65 watts TDP, but its quad-cores are rated at 95 watts and 105 watts. However, Intel's quad-core processors also run at clock speeds significantly higher than AMD's 9350e

and 9150e do, so the difference in performance per watt probably isn't as significant as it might seem.

We put the Phenom X4 9950 and 9350e through their paces with a recently completed beta version of WorldBench 6 that tests power consumption as well as real-world performance. On a test bed with 2GB of 1066-MHz DDR2 memory, an nVidia 8800GTS graphics board, an Asus M3A32-MVP Deluxe motherboard, and two 250GB Western Digital WD2500AAJS hard drives in a striped RAID 0 configuration, the Phenom X4 9950 turned in a score of 104. That compares well with the mark of 108 for Gateway's GM5632E and the score of 97 for Commodore Gaming's CGX, both of which used Intel's 2.4-GHz Q6600.

On the other hand, it fell well short of the average of 118.5 scored by the six PCs we've tested that use the 2.66-GHz Intel Q6700. The test PC with the 9950 also ran more slowly than the

Dell XPS 420 we tested with a 2.83-GHz Intel Core 2 Quad Q9550; that system earned a WorldBench 6 score of 122.

For the low-power 9350e test bed, we used 2GB of 800-MHz DDR2 memory and the same striped array, with a much less expensive Gigabyte GA-MA78GM-S2H motherboard. Though the Gigabyte board features integrated ATI HD3200 graphics, it also has a PCI Express x16 slot, so we used the same nVidia 8800GTS discrete graphics board for a better comparison between the two AMD CPUs. For a 2-GHz system, the Phenom X4 9350e's WorldBench 6 score of 87 was quite good.

The Phenom CPUs' power numbers fell largely as expected. The 9950 setup drew 227 watts under load over a 5-minute span, 3 watts while off, 7 watts in sleep mode, and 209 watts when fully awake but idle. Meanwhile, the 9350e setup drew only 162 watts under load, 1.6 watts when off, 3 watts asleep, and 147 watts at idle.

We used a rather beefy, 750-watt Corsair TX750W power supply for both setups, which exceeded the 9350e's requirements by a large margin. You should see lower power numbers for that setup with a lower-wattage power supply.

If you use programs that take advantage of multiple processor cores, or if you often run many apps at once, you can buy four cores and gulp less juice with AMD's new e-series Phenoms.

—Jon L. Jacobi ●



Acer recommends Windows Vista® Ultimate.

August/September 2008



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- VGA, HDMI (HDCP) signal connectors
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\$499

(ET.GX3WP.001)



Acer B243W bdr

- 24" wide-screen TFT LCD
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- 3000:1 dynamic contrast ratio
- 160°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 400 cd/m² brightness
- 5ms response time
- Height, tilt, swivel and pivot adjustments

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\$899

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Acer B223W bdmr

- 22" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 2500:1 dynamic contrast ratio
- 170°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers
- Height, tilt, swivel and pivot adjustments

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(ET.EB3WP.002)



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- 5-in-1 card reader
- 12.1" WXGA (1280 x 800) TFT display
- Intel® Graphics Media Accelerator X3100
- 802.11a/g/n WLAN, Bluetooth®, gigabit LAN, V.92 modem, webcam
- Fingerprint reader
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Genuine Windows® XP Professional
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Acer B203W bdmr

- 20" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 2500:1 dynamic contrast ratio
- 160°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers
- Height, tilt, swivel and pivot adjustments

\$249

(ET.DB3WP.002)



Acer B193 bdmh

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 160°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers
- Height, tilt and swivel adjustments

\$249

(ET.CB3RP.002)

Acer recommends Windows Vista® Business.

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- 5-in-1 card reader
- 14.1" WXGA (1280 x 800) TFT display
- Intel® Graphics Media Accelerator X3100
- 802.11a/g/n WLAN, Bluetooth®, gigabit LAN, V.92 modem, webcam
- Fingerprint reader
- Three-year limited warranty²



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Genuine Windows Vista® Business
(LX.TK50Z.042)

Acer B193W bdmh

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- 1440 x 900 maximum resolution
- 2000:1 dynamic contrast ratio
- 160°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers
- Height, tilt and swivel adjustments

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(ET.CB3WP.002)



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No matter how far you travel, Acer eNet Management will help to keep you online using intelligent location-based profiles.

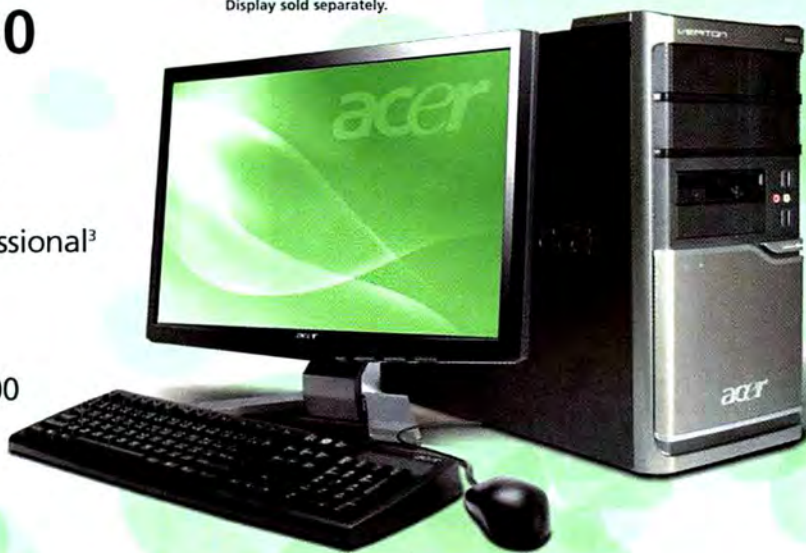


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with limited on-site service⁵

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(VM460-UD4500C)
80GB¹ SATA hard drive and DVD-ROM drive

Acer Veriton M460

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Genuine Windows Vista® Business
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- 2500:1 dynamic contrast ratio
- 170°/160° horizontal/vertical viewing angles
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers

\$255

(ET.EV3WP.002)



Acer V193 bm

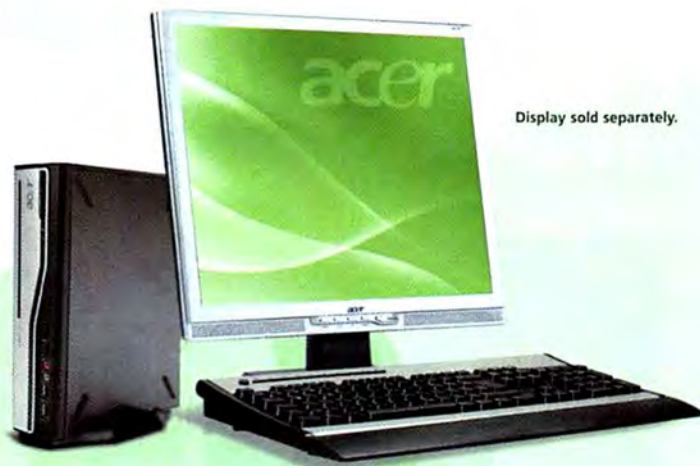
- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 176°/176° horizontal/vertical viewing angles
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers

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(ET.CV3RP.002)



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Acer V193W bm

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- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Two 1.0W integrated speakers

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- 2GB DDR2 667 SDRAM
- 120GB¹ hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display
- Intel® Graphics Media Accelerator X3100
- 802.11a/g/n WLAN, gigabit LAN, V.92 modem
- Fingerprint reader
- Three-year limited warranty²



Acer TravelMate 5720-6635

\$999

Intel® Core™2 Duo Processor T8300
(3MB L2 cache, 2.40GHz, 800MHz FSB)
Genuine Windows® XP Professional
(LX.TKE06.010)

The webcam shown in this image is not included on the advertised model.



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

Protect Your Investment with an Acer Notebook Service Upgrade

Quality is built into every notebook PC Acer makes, and each comes with a one-year or three-year standard limited warranty.³ It includes hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada.

For extra protection – and peace of mind – consider a warranty extension or, even better, the **Total Protection Upgrade**. This plan covers the cost of a replacement unit if, as determined by Acer, your covered notebook cannot be repaired.

**2-Year Extension of Limited Warranty (146.AB820.EX2)
for Notebooks with 1-Year Limited Warranty
\$99**

**2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002)
for Notebooks with 1-Year Limited Warranty
(Total Protection Upgrade runs concurrently with limited warranty and limited warranty extension)
\$199**

**3-Year Total Protection Upgrade (146.AD339.004)
for Notebooks with 3-Year Limited Warranty
(Total Protection Upgrade runs concurrently with limited warranty)
\$99**

Each of these upgrades prepays freight from the Acer repair depot and excludes extension of the International Traveler's Warranty

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

² For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76703.

³ Genuine Windows® XP Professional can be installed in place of, not in addition to, Genuine Windows Vista® Business.

⁴ The 60-day trial of Microsoft® Office Ready is available with Genuine Windows Vista® Business only, not with Genuine Windows® XP Professional.

⁵ For next-business-day response customer call must be received by 4:00 p.m. Central Time. Next-business-day response does not apply to service calls missed for reasons outside the control of Acer, such as airport closures or parts shortages. Next-business-day response and on-site service applies to the continental U.S. and Canada only and may not be available in all locations. In those areas where on-site service is provided, a technician will be dispatched, if necessary, following efforts to resolve the problem by telephone support.

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acer

Consumer Watch

ISP Bandwidth Limits Make a Comeback

BY JEFF BERTOLUCCI

BANDWIDTH HOGS, BEWARE: Cable operators are targeting power users who transfer massive media (and other) files.

Comcast is testing a technique that slows traffic to and

from heavy users during peak periods. Time Warner Cable is trying out a usage-based (or tiered) pricing system in Beaumont, Texas; and BendBroadband of Bend, Oregon, now charges customers a usage penalty if they exceed a monthly data-transfer quota. Even some noncable ISPs, such as DSL giant AT&T, are mulling usage-based pricing.

Why the crackdown? "The cable companies are feeling the pain the most from heavy bandwidth users," says IDC analyst Amy Harris Lind. That's because all cable broadband subscribers in a neighborhood share a single pipe to their ISP; each DSL user has a dedicated link.

Comcast says that less than 1 percent of its broadband customers use "excessive" bandwidth; examples of excess include sending 20,000 high-resolution photos, downloading 50,000 songs, or viewing 8000 movie trailers in a month.

Download Slowdowns

Initially, Comcast is testing bandwidth throttling in Chambersburg, Pennsylvania; Colorado Springs, Colorado; and Warrenton, Virginia. By going after heavy bandwidth users, Comcast has thus far avoided the controversy it encountered earlier this year when it throttled the speeds of users of peer-to-peer

(P-to-P) applications such as BitTorrent. Critics accused Comcast of violating the Federal Communications Commission-endorsed principle of Net neutrality, which prohibits ISPs from slowing down data transfers of specific applications.

Even consumer advocates have reacted favorably—though warily—to Comcast's tests.

Ben Scott, policy director of media watchdog group Free Press, calls bandwidth throttling "legal and appropriate."

BitTorrent chief technical officer Eric Klinker is upbeat, too: "It's certainly a good step from where they were, because it's a more neutral approach, and it allows users to decide what's important to them, rather than the network deciding."

Pay per Bit

In its Beaumont test, Time Warner Cable offers subscribers four tiers of service based on transfer speed and on usage caps that range from 5GB to 40GB. For \$30 per month, for instance, Time Warner promises users a download speed of 768 kbps and imposes a 5GB monthly cap;

\$55 fetches downstream transfers at 1.5 mbps with a 40GB cap. Customers who exceed the usage limit must pay \$1 per additional gigabyte. BendBroadband is far more generous: All tiers—ranging from \$37 to \$65 per month—have a 100GB allowance, after which users must pay \$1.50 per gigabyte.

Will U.S. customers balk, given that usage-based consumer broadband faded away back in 1996, when America Online switched to all-you-can-eat pricing? Justin Moravetz, a BendBroadband subscriber in Bend, Oregon, believes that >>

Major cable operators are cracking down on bandwidth hogs by throttling speed or adding surcharges; DSL providers may follow suit.



Should the government encourage more-widespread and -robust broadband deployment? Some observers say private industry isn't doing enough to meet coming demand (find.pcworld.com/61279).

tiered pricing will ultimately translate into higher Internet fees for all users. ISPs "really like those people who pay full price, and all they do is surf news or check their e-mail," says Moravetz, a Sony computer animator who writes the protest blog Fix Bend Broadband (fixbbb.com). "But with video and streaming content becoming more prevalent, even those individuals are going to start consuming a lot more bandwidth."

"I really don't see usage-based pricing working for broadband, and particularly for Time Warner," says IDC's Lind, noting that Beaumont residents can obtain AT&T DSL, with 768-kbps downstream and no cap, for \$25 a month.

Usage-based pricing forces power users to track their monthly activity more closely. Both Time Warner Cable and BendBroadband offer tools to help users monitor their gigabyte totals. And Comcast telephones its "excessive users" to warn them that they are exceeding their bandwidth limits.

If you'd like to monitor your bandwidth consumption but your ISP offers no help, check out Hagel Technologies' \$25 DU Meter 4.0 (www.dumeter.com), which allows you to establish usage limits and notifies you if you're on a pace to exceed them. DU Meter doesn't track non-PC bandwidth consumption (by smart phones and consumer electronics, for example), but a \$50 Family Pack lets you install it on five computers.

An even simpler tool is ShaPlus's free Bandwidth Meter 1.1 (find.pcworld.com/61277). Click its system tray icon, and a pop-up window displays your daily and monthly bandwidth totals. I was unable to get two other free monitors, Watch-WAN and Net-Regulator, to work on my Windows Vista PC.

It's unclear whether bandwidth throttling and tiered pricing represent the future of home broadband. After all, as Web video becomes ubiquitous, all users may become bandwidth hogs by current standards. Or as BitTorrent's Klinker puts it: "Assessing a video tax by charging power users will increasingly snare your average user."

SKEPTICAL SHOPPER YARDENA ARAR



Make Banks Compete for Your Deposits

AUCTION SITES ARE among the Web's greatest wonders. Want to know something's value? For tangible goods, there's no better barometer of current worth than eBay. Now a new site, MoneyAisle (www.moneyaisle.com), promises similar benefits to people looking for the best interest rates for their long- or short-term savings.

Of course, you can easily run a search on BankRate.com, or check out mortgage offers on LendingTree.com. But MoneyAisle's creators at the online auction technology company NeoSaej say that the site's innovative technology and ad-independent business model help consumers find the best rates on money-market savings accounts or certificates of deposit, while also helping banks find depositors more cost-effectively.

Here's how it works: Say I'm looking to invest \$10,000 in a one-year CD. I provide this information, along with my state of residence, to MoneyAisle in a simple Web form. Immediately the site tells me how many of its partner banks want to bid (83 in my test-drive auction), based on input from the banks' end of the auction engine. Banks create their own bidding algorithms; a bank may be willing to pay a higher rate on a particular day, or even time of day, if it needs cash to meet obligations.

Bidding proceeds in rounds; banks drop out as the highest bid exceeds the cap their bidding algorithms allow. The site shows how many banks are still bidding in each round until all but one drops out. In my example, after about 15 rounds of bidding (which took under a minute), the top offer was a 4 percent annual percentage yield—significantly more than the 3.85 percent high I found on BankRate when I checked a few moments later.

In MoneyAisle's real-time auctions, banks bid up rates on certificates of deposit and savings accounts.

You don't have to accept a winning bid; but if you do, you should be able to set up your account electronically, NeoSaej CEO Mukesh Chatter says. Banks pay MoneyAisle only when they book loans. (The site expects to add mortgages, credit cards, and other financial products eventually.)

Chatter says that this approach attracts small and midsize institutions that, despite being FDIC insured, are hurting for depositors because they can't afford

the expensive technology that larger banks have used effectively to attract customers online.

And because banks pay only for transactions, Chatter explains, they can offer higher interest rates than they could if they had to factor in the cost of click-through ads that produced no business.

Trial Auction, No Registration

You don't have to register to run a test auction. In mine, I found that MoneyAisle didn't always produce the highest rate for money-market savings accounts, but the CD rates were generally good.

Edward Woods of the financial consulting firm Celent says that MoneyAisle will appeal to an investor who "wants to minimize their research effort."

MoneyAisle, he adds, "screens out some of the noise" that people face when doing financial research—for example, seeing a good rate and then finding that they can't get it because their deposit is too small. Banks that bid for your business on MoneyAisle already know your particulars.

LendingTree's ad campaign says that when banks compete, you win. MoneyAisle lets you watch them duke it out.





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Consumer Watch

ON YOUR SIDE AMBER BOUMAN



WHEN MY ALIENWARE laptop computer failed after just three years of scant use, I took it in to Best Buy's Geek Squad. They diagnosed a video card failure but said they lacked the part to make the repair. However, when I asked Alienware for a replacement board, reps told me, "Alienware no longer sells spare parts...you could purchase the part from a third-party vendor"—but they did not provide any vendor names or contact info.

Alan Weinberger, Reston, Virginia

OYS Responds: Our contact at Alienware described Weinberger's treatment as "a fluke," and said that the company will sell parts for out-of-warranty systems (such as Weinberger's) as long as it has sufficient stock to take care of its warranty repairs. If Alienware doesn't have sufficient stock, our contact said, it will provide customers with an estimate of when the part will be available, and also will point them to several third-party vendors listed on its Web site.

After we spoke with the company, a representative contacted Weinberger and arranged to have his video card replaced (for a fee that Weinberger agreed to).

Alienware says that customers who are not satisfied with a tech support rep's initial response should ask to have their issue escalated to a supervisor.

OYS recommends asking for the name of any customer service or tech support staffer you talk with, and trying alternative support avenues (such as live chat or a knowledge base) if your initial effort doesn't yield satisfactory results.

Missing in Action

Reader Dominic Ma of Walnut Creek, California, ordered three car power adapters from TangShop.com; but the package he received a few weeks later contained only one adapter, even though the company had charged him for all three.

After he e-mailed TangShop.com to complain, he received a reply stating that the additional units would be forthcoming. Nine days later, however, no new adapters had arrived—and TangShop.com had failed to respond at all to three subsequent e-mail messages.

Ma asked us to investigate, but we had no better luck in getting hold of a Tang-



Shop.com representative. When we called a phone number we found on the TangShop.com site, a recorded message stated that no one was available, and as of early July we had received no response to repeated e-mail inquiries.

Because TangShop.com uses Yahoo's shopping-cart software, we checked with Yahoo, which is also investigating.

TangShop.com has been the subject of complaints on several consumer sites, and as of early July the Better Business Bureau's Web site reported that the firm has an unsatisfactory record as a result of unanswered complaints.

Polycom Recall

Polycom has recalled about 5800 SoundStation2W Wireless Conference Phones with lithium ion batteries due to overheating problems that have resulted in one report of minor property damage but no injuries. The affected SKU numbers are 2200-07800-001 and 2200-07880-001. If you own one of these units, Polycom recommends that you immediately remove the battery (you can still use the phone on AC power) and contact Polycom for a free replacement battery at find.pcworld.com/61225 or 800/963-7627.

Wi-Fi Alliance to Certify Gear for VoIP Use

THE WI-FI ALLIANCE—the trade group that certifies the interoperability of Wi-Fi products from different vendors—has begun a certification program for Voice-over-IP telephony on Wi-Fi devices.

A product (whether an access point, a router, a handset, or a PC) with a Wi-Fi Certified Voice-Personal sticker on its packaging is certified to be capable of making or handling good-quality VoIP calls (using a service such as Skype or Vonage) in a home or a small office.

Most of the Wi-Fi Alliance's 802.11x certification programs focus on interoperability between products offered by different vendors. But the VoIP cer-

tification program consists of performance testing only: To qualify, products must deliver content with a packet loss rate of less than 1 percent, with no burst losses, and with latency and maximum jitter of less than 50 milliseconds, the Wi-Fi Alliance says. Packet loss, burst loss, high latency, and jitter are all problems that can break up or otherwise degrade the audio quality of phone calls made using VoIP.

Observers say that the Wi-Fi Alliance launched its VoIP certification program to strengthen Wi-Fi's competitive position as newer wireless technologies—such as femtocells (see “New Ways to Solve Your Cell Phone Dead Spots,” find.pcworld.com/61267) and the upcoming next-generation mobile broadband networks based on WiMax and Long Term Evolution (LTE)—begin to appear.

Only vendors can submit Wi-Fi products for certification, but consumers can check a special products database (find.pcworld.com/61268) to see whether a particular product has passed the testing. The Wi-Fi Alliance plans to introduce a VoIP certification program for larger businesses sometime early next year.

—Mikael Ricknäs ●



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Business Center

Business Desktops: What to Look For

GLENN FLEISHMAN

BUYING DESKTOPS for your business might seem to be a straightforward process, but choosing an ideal configuration involves making some important decisions. To help you decide which options are must-haves, and which you can bypass, we've put together a checklist.

OS: XP FOR NOW Because so many individuals and businesses have had serious trouble getting Windows Vista to operate consistently, reliably, and quickly, you may find the option for an XP downgrade on new PCs welcome, if a little odd. Since most businesses have not standardized on Vista, you are unlikely to have compatibility problems with co-workers or other companies you work with if you stick with XP. When you opt for a computer with an XP downgrade, you are essentially purchasing Vista but getting XP for free, and obtaining a Vista disc to use if and when you decide to upgrade later. If you buy Vista Business, PC vendors who offer models that support this option will impose no additional charge; if you buy a cheaper Vista version, you may have to pay a fee, or an XP downgrade may not be available.

Our verdict: Buy a Vista Business computer that

Many newer features are increasingly affordable and increasingly necessary, while others are things you can definitely wait on.

comes with Windows XP preinstalled and with Vista on a disc, so that you can install it when you are ready to.

LARGER LCD DISPLAYS You can purchase large, 30-inch LCD displays from any of several PC makers; usually, the dual-link DVI connection that's needed to support one of these big boys is included in the system's cost. In fact, more often than not, you can manage two monitors—at least one of them a 30-inch display—with either the included card or a very cheap

upgrade (\$15 for one Lenovo model, for instance). If you need to plug two or more of the large monitors into your machine, however, you may have to pay extra for a video card upgrade, which typically starts at around \$400 and can reach into the thousands of dollars for the highest-performance cards.

Our verdict: If your work requires you to run two or more 30-inch LCDs, make sure that the video card you buy has the horsepower to handle them.

HARD DRIVES AND RAID With disk drives now going for an astoundingly low price per megabyte, RAID (redundant array of independent disks) offers a superb way to improve both speed and reliability in a desktop PC that has at least two hard-drive bays. To settle on a flavor of RAID, pick two targets—one being some combination of redundancy, speed, and reliability, and the other being the total pool of storage that you want to have available.

RAID 1 mirrors all data, writing the same data to each of two drives simultaneously. RAID 0 stripes data, interleaving blocks to accelerate the hard-drive data-transfer system's performance. Yet another option, RAID 5, »

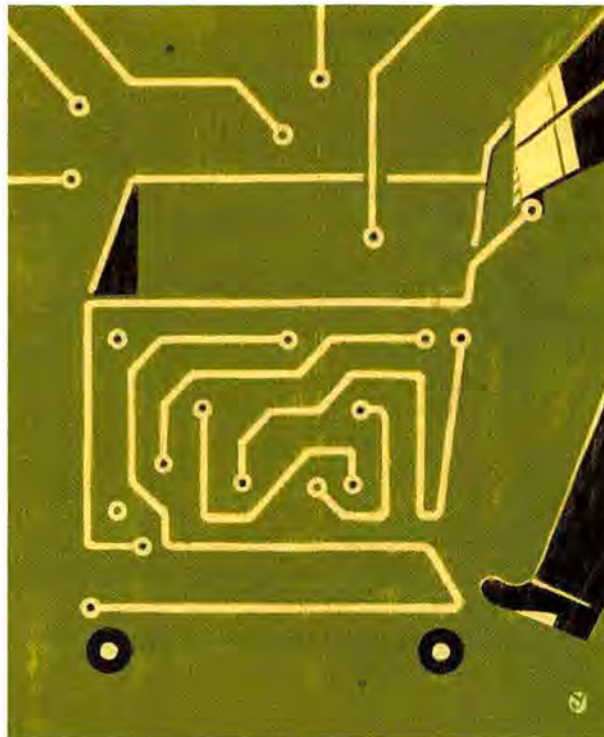


ILLUSTRATION: BEAD YEO

stripes data and error-correction information across three or more drives; if any one of those drives fails or dies, the others can reconstruct the missing details, and you lose much less storage than you would with simple mirroring.

Our verdict: You could combine RAID 0 and RAID 1 as 0+1, which gives you both performance and backup; but most experts consider RAID 5 a superior, though more expensive, alternative.

WARRANTIES Warranties are complicated beasts, and you can spend several hundred dollars extra for "24-hour business day" service, so know what you're actually getting. Such service may not guarantee that you'll be back up and running within 24 hours of a breakdown. If you have a problem beyond the local contract technician's ability to repair on the spot (because of a lack of spare parts, say), you may still be out of commission for a day or two, or over a weekend.

Our verdict: Find out what each warranty option means in practice, and ask around in your locale to determine whether the local repair technicians who may appear to service any maker's model you purchase are up to the task.

PLAN FOR UPGRADES Regardless of the new machine's specs, chances are you will want to upgrade it in the future.

Our verdict: Make sure that you can answer the following questions about any desktop you purchase:

- What is the maximum amount of RAM that the PC supports, and in what configurations? (As a guide, 32GB across eight slots isn't uncommon.)
- How many internal hard-drive bays are built in? (Make sure that you have enough spaces for all future storage scenarios. Some RAID 5 configurations require four or more drives.)
- What sort of security measures can be overlaid on the case? (Port covers, locks with keys, and cable-lock slots are all options worth considering.)

To read more about choosing a business PC, see find.pcworld.com/61247.

NET WORK RICHARD MOROCHOVE



Get Your Site Ready for New Search Tech

SEARCH ENGINES CAN drive a lot of visitors (read: potential buyers) to an e-commerce site.

But if you are relying on optimizing only your text to achieve a high search-engine ranking, you haven't taken a close look at search-engine results lately.

Search engines now seek out and integrate feeds from news, picture, and video sites into many query results. You can use this practice, known as universal or blended search, to your advantage by adopting so-called content tagging techniques.

Yahoo's new SearchMonkey (find.pcworld.com/61229) can help you get started. Although

SearchMonkey's tools are intended primarily for developers, nonprogrammers can use an HTML editor to mark up existing Web pages with more-descriptive tags that Yahoo's search engine will automatically pick up when it indexes pages.

SearchMonkey won't help you improve your rank for a particular keyword. Nevertheless, if you make your site's results listing stand out from the crowd by enhancing it—say, by adding a photo with a SearchMonkey-compatible tag—that may be enough to persuade more visitors to click on your link in search results.

Currently, SearchMonkey works only with Yahoo's search-engine listings. It's such a good idea, however, that I would be surprised if Google doesn't come out with something similar before long.

Optimize Your Digital Assets

What about other digital content—such as video? Some businesses have found that uploading a video clip to YouTube (now owned by Google) can pay off, especially if they tag each clip to make it easier to find under relevant YouTube searches. And as you may have noticed, Google

Yahoo's free SearchMonkey can enhance your search-engine performance by taking advantage of new tools such as tags.

now includes links to some YouTube videos among its regular search results.

It's not necessary to run out and create a video in order to establish a good presence in universal search results. But Jill Whalen, chief executive officer of the search engine optimization firm High

Rankings, says that a video might be worth the trouble for some types of businesses—"a how-to if you're a plumber or an electrician," perhaps.

Putting your business in the news is another way to raise its search-engine prominence. This doesn't

mean landing a *New York Times* story: Writing a press release and distributing it online via a news release service such as PR.com may result in its being indexed as a news item, which could attract more visitor traffic. The key is to write the news release with search engines in mind, mentioning keywords that are related to your content and including links to your site.

In future, these techniques will continue to gain importance: Universal search is a precursor to the Semantic Web, which aims to make information in all formats (not just traditional text) more discoverable by automated tools. Supported by the World Wide Web Consortium (W3C—see find.pcworld.com/61238), the Semantic Web appears poised to succeed today's HTML Web as the next evolutionary step. Think of it as extending the current Web by including a layer of electronic glue to help other sites access the data on yours.

As more and more Internet users upgrade to broadband connections, search engines will include even more multimedia content in their results to appeal to high-speed users. A smart connected business will prepare for that future.



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5 Downloads to Make Your Wi-Fi Life Easier

AT HOME, AT WORK, and on the road, you can often connect to Wi-Fi networks and hotspots for Internet access. Here are some free or cheap software tools to help you find safe Wi-Fi networks and protect yourself against snoops.

WeFi (free): WeFi presents you with a map showing all nearby hotspots that you can connect to; it also tells you whether the networks are encrypted or open, and notes their signal strengths. Double-click any hotspot shown on the map to connect. If you want to meet up with people who are connected to hotspots near you, click the *People* tab, and you'll see a list of folks nearby. You can then obtain more information about any of them, and contact them as well. Download: find.pcworld.com/61249

Plug and Browse (\$40, free demo): If you regularly connect to more than one wireless or wired network—one at home and one at work, for example—you know that a new connection fails if

your adapter is stuck on the old settings.

This exceedingly simple tool permits you to create and use predefined network settings profiles for each network that you visit. Download: find.pcworld.com/61250

WiFi Guardian (trial for 30 days; \$5 per 1GB transferred): This program sets up a virtual private network (VPN) for you when you connect at a hotspot, or when you want to protect your wireless transmissions. Run the software, log in, and choose a server (currently in the United States or UK only), and everything you do will be hidden through encryption. Download: find.pcworld.com/61255

Xirrus Wi-Fi Monitor (free): If you use both Windows Vista and Wi-Fi, Xirrus Wi-Fi Monitor may be one of the most useful Vista tools you can download. It automatically displays your connection's signal strength, the SSID of the net-



SOCIAL NETWORKING meets Wi-Fi: WeFi lets you find and connect to nearby Wi-Fi networks, and to WeFi users in the area.

work you're connected to, and your current IP address. Visually, in radar-monitor fashion, it also displays the wireless network you're connected to, as well as any other networks nearby. Download: find.pcworld.com/61252

Whisher (free): Free Wi-Fi connections are not always available. Whisher is a nifty way to gain access to more wireless hotspots in your travels. The concept is simple: Share and share alike. You run the software, create an account, and let others piggyback onto your home wireless network. In return, you receive credits to hop on other people's networks and commercial hotspots. Download: find.pcworld.com/61253

—Preston Gralla

A Wireless Modem With Style and Substance

CAN A MODEM make a fashion statement? The Sprint Compass 597 from Sierra Wireless does. This wireless broadband USB modem is small, sleek, and easy to use.

The Compass 597 measures 1.1 inches across at its widest, 3.1 inches long, and 0.4 inch thick, and weighs 0.8 ounce. Highlighting its good looks are a slightly rounded shape and a soft orange light



Compass 597 | Sierra Wireless

An easy—and stylish—way to get broadband

Internet access while you're on the go. List: \$50 (with two-year monthly data plan from Sprint) find.pcworld.com/61155

THE COMPASS 597: sharp design and decent download speeds.

across the top that glows when the unit is attached to your PC. Unlike many similar devices, the gadget has no flip-up antenna, so it looks just like a USB thumb drive; in fact, the Compass 597 can double as such a drive because it contains a slot for microSD cards.

To get started, you plug the modem into an open USB port; the installation program (included on the modem) begins running automatically. After the modem completes an automatic restart, you launch the Sprint SmartView software and choose an available mobile broadband or Wi-Fi

network. SmartView has a clean interface that's very easy to navigate.

The Compass 597 supports Sprint's 3G EvDO Rev A network where available (check at coverage.sprintpcs.com); this network delivers download speeds of between 600 kilobits per second and 1.4 megabits per second. When I accessed it from my home outside Boston, my download speed was 741 kbps; uploads were 110 kbps. Performance was very good overall, and I was able to browse the Web with no problems.

Sprint offers the Compass 597 for a very reasonable \$50 with a new two-year service agreement; Sprint's data-only plan costs \$60 per month for 5GB of data. For frequent travelers, the Compass 597 will make a worthwhile—and good-looking—companion.

—Liane Cassavoy

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Security Alert

New Browsers Fight the Malware Scourge

BY ERIK LARKIN

THE LATEST BROWSERS are fighting back against the never-ending assault from online crooks who want to sneak malware infections through your browser and onto your PC.

Firefox 3, Opera 9.5, and, soon, Internet Explorer 8 add new security features that block known malware sites.

Today's dirty trick of choice for Net thugs is to slip nearly invisible code onto a vulnerable but benign Web site, forcing it to become an unwitting foot soldier in the malware war. A successful hijacking in July of a site for Sony PlayStation games (see page 56 for details) demonstrates that sites both large and small can fall victim to this tactic, which crooks like because it can target even people who are careful about where they surf.

Mass Assaults Online

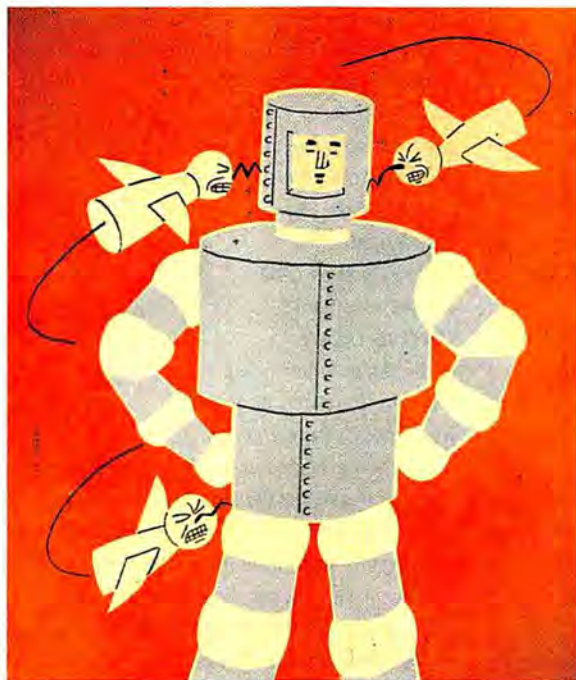
"The bad guys are putting a lot of effort into mass hacking," says Roger Thompson, chief research officer with antivirus maker AVG Technologies.

"They routinely hack 20,000 to 40,000 sites in a day" with automated tools, he says.

The browsers have their work cut out for them, to be sure. A May report from security company ScanSafe (find.pcworld.com/61233) that looked at data from its corporate customers found that their risk of encountering exploits and hijacked Web sites skyrocketed by 407 percent from May of last year. ScanSafe also found that just over two-thirds of all Web-based malware attacks came via compromised Web sites.

The new features in the latest browsers work much as existing antiphishing filters do. In Firefox 2, Mozilla uses Google's blacklist of known phishing sites. If you mistakenly click a link to a URL on that list, you'll see a warning instead of the site. Firefox 3 also blocks the display of pages on Google's list of known malware sites.

The just-released Firefox 3 and Opera 9.5, and the upcoming IE 8, respond to the growing threat with enhanced blocking features.



Firefox 3 grabs the most recent blacklist about every 30 minutes, according to spokesperson Johnathan Nightingale, and checks the sites you visit against that local list. Firefox 2 has an option to always check sites you visit against Google's online list so as to catch the very latest entries, but Firefox 3 provides no such option.

Opera Girds Itself

Opera 9.5 works in a similar fashion, but with some key differences. It adds malware-site blacklists from Haute Secure, a Seattle-based security company, to the phishing blacklists from Netcraft and Phishtank that the previous version used. Haute's list includes sites on Google's list, those the company discovers, and sites that Haute's users have submitted.

According to Christer Strand, an engineer at Opera who worked on the new feature, when you first visit a domain, the browser pulls down a sublist of any blacklisted pages or links within that domain from the latest online-stored lists. It then checks pages you visit against that small downloaded list. Opera doesn't save anything about who is visiting what domains, Strand says.

Though you can find these features in the latest Opera (www.opera.com) and Firefox (www.getfirefox.com) now, you'll have >>

ILLUSTRATION: DAVID PLUNKERT

PCWORLD.COM

Mix-and-match your own protection: Grab Haute Secure's toolbar for Firefox and IE at find.pcworld.com/61235, or use Google's blacklists with any browser by enabling Google Desktop's Safe Browsing.

to wait for Internet Explorer 8's similar feature. Austin Wilson, director of Windows client product management, says that IE 8's beta 2, due out in August, will employ a feature dubbed SmartScreen to block malware sites.

Wilson says Microsoft will use lists of such sites from different company partners, as it does now for the browser's antiphishing protection (see find.pcworld.com/61234 for the latter), but he isn't yet saying who those partners will be.

Instead of downloading all or part of the blacklist to your PC, IE 8 will check every page you visit against the online malware blacklist, Wilson says. Unlike IE 7's phishing protection—which checks for blacklist matches and also attempts to identify phishing sites at the time you visit based on a page's characteristics (such as whether it sends log-ins off to another domain)—SmartScreen will only compare against a blacklist for malware sites.

Wondering about Apple's Safari? The current browser doesn't block any malicious sites, phishing or malware, and the company is tight-lipped about whether it plans to add such features.

No Silver Bullet

While these new features will help combat rampant site infections, they won't single-handedly stomp out Web-based malware any more than antiphishing measures do for that type of threat. For one thing, blacklists are inherently reactive: A site must first be identified and added to a list before it will be blocked. Even the fastest such process can leave a window of opportunity for criminals to nail victims before the blacklists catch up, just as with virus signatures. And of course, crooks still have other methods, such as e-mail and IM, to ply their nefarious trade.

"In most cases viruses spread so rapidly, and through so many methods, it's not sufficient to only employ browser protection," says Opera's Strand.

His advice for surfers? "You really need an antivirus [program] no matter what browser you're using."

BUGS & FIXES

STUART J. JOHNSTON



Ward Off an Ongoing PDF Zero-Day Attack

THESE DAYS, the makers of popular software may as well put big bull's-eyes on

their products. When nearly everyone uses a particular program, a security hole in that application instantly creates a huge pool of targets for online crooks.

Here's an example: This month Adobe closed a hole in its Acrobat and Reader programs even as they were already under attack—a true zero-day scenario.

Security researcher Secunia says the attack starts when the victim opens a booby-trapped PDF file. The flaw affects Adobe Reader 8.0 through 8.1.2, and Reader 7.0.9 and earlier. It also impacts Adobe Acrobat Professional, 3D, and Standard 8.0 through 8.1.2, as well as 7.0.9 and earlier. Choose *Check for Updates* under the program's Help menu for the patch, or grab it from find.pcworld.com/61213.

Meanwhile, Microsoft patched Internet Explorer again, this time to repair two defects in IE's handling of Active Scripting. One bug lets an attacker make a Web page that, when viewed, can steal data from a page opened in a different browser tab—such as an online banking session.

As for the other bug, a successful exploit could completely compromise your PC, and you can be hit simply by visiting a poisoned Web page, or even by using Windows Instant Messenger.

These bugs affect every IE version, from 5.01 on Windows 2000 SP4 all the way up through IE 7 on Vista SP1. If you haven't already pulled down the patch from Automatic Updates, be sure to download it from find.pcworld.com/61214.

IE isn't the only browser requiring some under-the-hood repairs. Apple released Safari 3.1.2 to fix a "carpet bomb" bug, initially thought to be mostly an annoyance until researcher Aviv Raff

Plus: Close holes in IE and DirectX, and stop the Safari "carpet bomb" bug.

discovered a way to combine it with a Windows bug to create a serious threat. Snag the Safari update from find.pcworld.com/61216 or via Apple Software Update.

Apple also shipped QuickTime 7.5, which addresses five nasty bugs. Some of the holes affect Windows Vista, some XP Service Pack 2 (SP2), and some OS X. Stumble across a site with a QuickTime file containing rigged PICT images, AAC-encoded audio, or Indeo video, and you'd

be hit. Nab the fixes from find.pcworld.com/61217, or from Apple Software Update.



DirectX Fixes

Next up are two flaws in DirectX (versions 7 and 8.1 for Windows 2000, as well as versions 9 and 10 for newer Windows editions), which handles

multimedia for Windows. Click a link for a booby-trapped video that targets the first of these vulnerabilities, and you could be left screaming instead of streaming.

The other risk hits the Synchronized Accessible Media Interchange (SAMI), which allows for adding closed captioning to media files. Again, you could be nailed by visiting a poisoned site or opening a tainted e-mail attachment. Both bugs affect all supported versions of Windows, including Windows 2000 SP4, XP SP2 and SP3, and Vista and Vista SP1.

If you don't already have the patch (which fixes both flaws) installed automatically, you can obtain it, as well as more info, at find.pcworld.com/61218.

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Sony Site Falls Prey to Automated Hacker Hijack

THE U.S. SONY PlayStation Web site in July became a high-profile victim of a hacker attack on business sites that's spreading malware at a breakneck pace, a security vendor says.

Sophos PLC reported that Sony suffered an SQL injection attack, an old hacker trick that has found new life. An automated program exploited a programming vulnerability to plant malicious code on the pages dedicated to two popular PlayStation games, Sing-

Star Pop and God of War, says Graham Cluley, senior technology consultant with Sophos. The digital security company alerted Sony to the problem, and Sony fixed it within 24 hours.

Video-game fans surfing on the PlayStation Web site saw a pop-up window that purported to show the progress of a virus scan on the visitor's PC. After the fake scan ended, a message declared that the computer was riddled with viruses and Trojan horses. It then offered the

user antivirus software—again, fake—for a fee. This social-engineering scare tactic has become increasingly common among online criminals.

While the PlayStation site is now clean, hundreds of other Web sites were compromised by the same attack. According to Cluley, affected sites are wide ranging—everything “from Brazilian and Chinese government sites to a garden pond supplier in Canada.”

—Brian Jackson

PRIVACY WATCH

ERIK LARKIN



Check Your Personal Data Before Your Employer Does



IN THIS DATABASE-DRIVEN world of ours, our personal details are stashed away in countless places, ready to be retrieved by people who want to sell to us, lend to us, insure us, or hire us. This information is critical to our livelihoods, so knowing who has it and whether it's correct is important.

A recent *BusinessWeek* article (find.pcworld.com/61231) detailed a number of examples where the data gathered by information brokers conducting background checks on prospective or current employees was incorrect, or at least disputed, and cost people jobs. Thankfully, you can examine some of your records ahead of time, as you can (and should) do with your credit report, to make sure no surprises pop up when someone checks them.

The Fair Credit Reporting Act requires companies that store background information to give you access to your data when you request it—a rule that is much the same as with credit reports. But while you have only three credit-history companies to check, many more information brokerages exist. And unfortunately, you have no one-stop shop where you can collect your data from all of them (as you do for credit reports at annualcreditreport.com).

ChoicePoint is one of the better-known companies in the data-collection business, so if you want to check your information it's a good idea to start with that firm. At find.pcworld.com/61232 you'll find a "Full File Disclosure Request Form" to send to the company to obtain, for free, the data it might have stored about you in insurance claims, retail theft reports, and other databases it maintains. If the company has performed a previous background check on you, you'll also see the results of that check. If you discover anything

Conducting your own preemptive background check can stave off nasty surprises.

out of place, contact ChoicePoint to start the correction process.

One catch: You can receive only the data that a company stores in its own databases. Typically, for a background check purchased by a potential employer, ChoicePoint also retrieves information from other sources, such as your college, at the time it performs the check. And other companies, such as Kroll, don't maintain any data stores of their own but instead retrieve information from courthouses, universities, and other sources.

Companies don't have to conduct such research for you for free. If you want to find out what a prospective employer might get from that kind of data-gathering process, you'll have to pay for your own full background check, which starts at around \$50.

By law, any employer must obtain your permission to conduct a background check on you. And if the employer uncovers something damaging that might deny you a job or lead to your being fired from your current one, it has to tell you what it learned, and from which data-collection company.

If that data contains a mistake—and mistakes do occur—you can dispute it with the background-check company, and the firm must look into it within 30 days. ChoicePoint says that it will remove data it can't verify from its own databases; but if another party, such as a courthouse, holds the disputed record, you'll have to correct it with that original source. You can also add a note for anything that's true but warrants explanation.

If your current employer performs background checks, find out what company it uses and try to request the data before it does. And if you know you'll be applying to a particular employer, give its HR department a ring to ask the same questions. ●

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via the web**

**I surf x-rated sites
from behind
my cubicle walls**

**I shop online
all afternoon
from work**

Malware Wages War on Gamers

**EVEN PLAY-
TIME CAN BE A
DANGER ZONE
FOR THOSE
WHO ARE NOT
VIGILANT**

***T**here's a new form of identity theft and the targets are online gamers.*

In recent months, viruses and other schemes aimed at gamers have gone through the roof. The goal, in many cases, is to scoop up online passwords in order to pilfer the virtual possessions that a player accumulates, or even to co-opt the virtual character that may have required months or even years to craft.

In the online world these days there is money to be made in the sale of stolen virtual currency, weapons, furniture and personas. Criminals are targeting passwords of everything from teen virtual worlds to massively multiplayer online game sites. Once a thief gains control of possessions or a character, he or she can sell them off for virtual currency and ultimately exchange it for real currency at an online exchange.

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Industry threat reports document a dramatic rise in malware that targets online gamers. The predominant form of attack is to infect a gamer's computer with a trojan program that can steal a player's password and account credentials.

Most gaming sites themselves are safe, or at least can detect something such as a SQL code injection quickly and correct it before any damage is done. But the real danger lies outside the actual game, on other sites where gamers gather to trade tips, swap "cheat codes," and otherwise interact with fellow gamers.

It is on these peripheral sites where hackers can utilize social engineering techniques to get players to let down their guard and inadvertently allow their computers to become infected.

So what's a gamer to do? First, you need to be alert to the reality that criminals are exploiting people like you. Second, don't let



we protect your digital worlds®



ESET: Take a Look

Figuring out what's causing a computer to behave uncharacteristically can be challenging. Earlier this year, a free tool to help diagnose such problems was made available by ESET, the leader in proactive threat protection.

ESET SysInspector is a state-of-the-art diagnostic tool that provides a deep-dive inspection of a Windows-based computer and displays gathered data in a comprehen-

sive way. The program peers into your operating system and captures details such as running processes, registry content, start-up items and network connections.

Once a snapshot of the system is made, *SysInspector* applies heuristics to assign a risk level for each object logged. Information is presented with an intuitive graphical user interface, using a slider to select objects of a particular color-coded risk



level for closer examination.

Information like installed drivers and applications, network connections or important registry entries can help you to investigate suspicious system behavior. Or you can generate and save a detailed log to be used by an IT expert or uploaded to an online forum for diagnosis.

ESET SysInspector can be downloaded at: www.eset.com/download/sysinspector.php

down your antivirus defenses in the hopes that you'll gain a performance edge. Nor should you neglect software patches in the mistaken belief you're avoiding detection of pirated software. (Nobody in the industry endorses piracy, but they don't withhold security protection because the damage from malware is much greater than the cost of individual software licenses.)

The criminal elements making these assaults are in it for the money, so they're highly motivated and are constantly tweaking their code and their techniques in hopes of finding a window of opportunity. You should be just as vigilant in your efforts to safely enjoy your virtual world and online games.

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Reviews & Rankings

Digital SLRs Get More Features, at Lower Prices

New models from Canon and Sony top the chart, bolstered by such additions as a live image preview on the LCD to help compose images.

PCW Test Center YOU'VE JUST MISSED *the* shot. You know the one—the shot that you have a millisecond to capture, be it of your toddler running across the lawn, of your buddy's home-run swing at the company softball game, or of the jet plane swooping above you at a summertime air show.

If missing pictures is a frequent lament of yours, then you're probably ready to graduate from a digital point-and-shoot camera—and its seemingly interminable shutter lag—and explore the wider realm of digital SLR (single-lens reflex) models. Fortunately, the latest digital SLR cameras come with a host of features that are aimed at helping new-

comers make the transition from a point-and-shoot.

We tested Canon's EOS Digital Rebel XSi (\$899 with kit lens), Nikon's D60 (\$750 with kit lens), and Sony's Alpha DSLR-A300K (\$700 with kit lens), and discovered that each camera has its own specific appeal for the crossover crowd.

One of the chief shooter-friendly additions to digital SLRs is a Live View mode, which lets you compose an

image within the camera's LCD just as you would with a point-and-shoot digital camera. Live View has been making its way into digital SLRs steadily over the past year. Both the Canon and the Sony reviewed in this story offer Live View; they're the first sub-\$1000 digital SLRs we've evaluated to have the feature. Other models

NEW AT THE top of our SLR cameras chart are the second-ranked Sony Alpha DSLR-A300K (left) and our Best Buy, Canon's EOS Digital Rebel XSi.

we've tested with Live View mode include Canon's \$1499 EOS 40D, Nikon's \$2200 D300, Olympus's \$2650 E3, and Panasonic's \$1000 Lumix DMC-L10K.

The Sony Alpha DSLR-A300K's Live View mode works particularly smoothly compared with competing implementations of the feature. This model uses two



PHOTOGRAPHS: MARC SIMON



63 IPHONE 3G



68 POLAROID POGO



71 LENOVO IDEAPAD U110

76 PURE DIGITAL
Flip Mino

imaging sensors, one to preview the image on the LCD in real time and another to capture the image. Sony's uncommon approach to Live View results in a speedy, highly responsive mechanism (in contrast to the more sluggish operation found on rival cameras).

Canon's EOS Digital Rebel XSi, on the other hand, uses the same imaging sensor for both preview and image capture. Even so, this model's Live View worked fairly well—you can check on the focus in specific areas.

The 12.2-megapixel XSi boasted the best image quality of the three new cameras we tried; its imaging, coupled with a strong feature set, was good enough to help propel this unit to first place on our *Top 5 Digital SLR Cameras* chart. In the PC World Test Center's evaluation, the XSi produced evenly exposed shots, with excellent sharpness.

Various preset and manual

PC WORLD TOP 5 DIGITAL SLR CAMERAS

MODEL	PCW Rating	Performance	Features
BEST BUY 1 Canon EOS Digital Rebel XSi \$899 NEW find.pcworld.com/61257	88 VERY GOOD	<ul style="list-style-type: none"> Image quality: Superior Battery life: Superior Overall design: Very Good 	<ul style="list-style-type: none"> 12.2 megapixels 18mm to 55mm zoom 6 scene modes 25.8 ounces
BOTTOM LINE: The XSi provides a strong range of capabilities, but its price may deter some entry-level buyers.			
2 Sony Alpha DSLR-A300K \$700 NEW find.pcworld.com/61259	88 VERY GOOD	<ul style="list-style-type: none"> Image quality: Superior Battery life: Superior Overall design: Very Good 	<ul style="list-style-type: none"> 10.2 megapixels 18mm to 70mm zoom 4 scene modes 32.8 ounces
BOTTOM LINE: Camera has a tiltable LCD and real-time, fast Live View previews; it's also ergonomically designed.			
3 Olympus EVolt E-510 \$600 find.pcworld.com/57952	87 VERY GOOD	<ul style="list-style-type: none"> Image quality: Superior Battery life: Superior Overall design: Very Good 	<ul style="list-style-type: none"> 10.0 megapixels 28mm to 84mm zoom 18 scene modes 28.7 ounces
BOTTOM LINE: This SLR offers many advanced features for the price, though some functions can be difficult to access.			
4 Canon EOS 40D \$1499 find.pcworld.com/59215	86 VERY GOOD	<ul style="list-style-type: none"> Image quality: Superior Battery life: Superior Overall design: Very Good 	<ul style="list-style-type: none"> 10.1 megapixels 28mm to 135mm zoom 6 scene modes 48.8 ounces
BOTTOM LINE: Feature-packed camera produces great images, and will appeal to enthusiasts and pros alike.			
5 Olympus E3 \$2650 find.pcworld.com/60337	86 VERY GOOD	<ul style="list-style-type: none"> Image quality: Superior Battery life: Superior Overall design: Superior 	<ul style="list-style-type: none"> 10.1 megapixels 24mm to 120mm zoom No scene modes 52.6 ounces
BOTTOM LINE: This big, heavy, rugged camera has extensive advanced controls and fast burst-shooting speed.			

CHART NOTE: Prices are as of 6/10/08.

controls are chief among the XSi's strengths. Although navigating through its deep menu options can be daunting, the useful My Menu tool (previously seen on the pricier EOS 40D) can help you organize your oft-used settings into a single short-cut screen. Another boon to folks who are accustomed to point-and-shoot cameras

is the A-Dep feature, which optimizes images of small groups of people by adjusting the depth of field so that all of the image's subjects are properly in focus.

Nikon's new, relatively lightweight, 10-megapixel D60 will appeal to those who want the benefits of an SLR but not the heft. It missed our chart, however, landing

in seventh behind its sibling the D300. Its exposures were just slightly off, which hampered its image-quality score; it also lost points due to its comparatively smaller LCD (2.5 inches, versus the Sony A300K's 2.7 inches and the Canon XSi's 3 inches), as well as its lack of exposure bracketing and white-balance bracketing. >>

MORE ONLINE

For more information on the digital SLR cameras reviewed here, including testing details, see find.pcworld.com/61291.

The Nikon D60 (body only) weighs 16.1 ounces—0.7 ounce less than the Canon XSi. The camera feels small and lightweight in the hand, yet sturdily constructed, too. Although this model lacks the Live View mode found on the Canon and on the Sony, it has plenty of other enticing features, the most notable being its in-camera editing effects.

One nifty, albeit niche, feature is the stop-action-animation mode, which creates an AVI movie from a series of JPEG images. The animation function is the closest thing so far to having a movie mode in a digital SLR—and while it's no replacement for making a movie clip, it is a compelling and creative alternative means



NIKON'S D60 SLR has numerous controls, including the company's Active D-Lighting. This feature compensates for lighting issues, within the camera.

of capturing a moment.

The camera's Active D-Lighting extends the dynamic range and compensates exposure to pick up lost detail in shadows and highlights. And if you're stuck on how to use a feature and

you don't have your manual in your pocket, no worries: The D60's in-camera help screens walk you through many of the unit's functions.

If you're still learning about camera exposures, the intuitively designed, 10.2-

megapixel Sony Alpha DSLR-A300K will help you explore the process with its Exposure Shift setting. Exposure Shift creates several shots that are equivalent to the one you first captured, but with different exposures, thanks to varying the combinations of shutter and aperture speeds.

The A300K also features in-camera image stabilization, which means that any additional lenses you buy will benefit from the camera's ability to produce sharper images in low-light conditions. Plus, this model has a tilting LCD screen—as some point-and-shoot digicams do—which, together with the Live View mode, lets you get unusual angles without having to perform any gymnastic feats. For example, I've personally appreciated having the tilt for framing a shot above my head.

A digital SLR may not fit in your pocket the way a point-and-shoot digicam does, but if you take the plunge, you'll find a world of new images available for you to capture.

—Melissa J. Perenson

PREVIEW

Coming Soon: Canon's Newest Digital Rebel SLR

DUE OUT BY the time you read this is Canon's least-expensive digital SLR camera, the \$700 EOS Digital Rebel XS (with an 18mm-to-55mm, f3.5-to-f5.6 IS lens). This model will replace the current EOS Digital Rebel XTi.

The company bills the XS as the little sibling of the recently released EOS Digital Rebel XSi—our current Best Buy—with good reason.

According to Canon, the cameras are clones, but they do have a few differences. Compared with the specs of the XSi, the XS falls just short. The XSi boasts a 12.2-megapixel sensor, a 3-inch display, and a nine-point autofocus system. The XS has the same 10.1-megapixel resolution and 2.5-inch display as the Digital Rebel XTi it's replacing, and it offers a seven-point autofocus system.

Weighing 15.9 ounces, the Digital Rebel XS is 2.5 ounces lighter than the

XTi. As a result, the Digital Rebel XS is the company's lightest digital SLR to date.

Like the XSi, the XS provides Live View. It also has a better buffer burst-shooting rate than the XTi does: unlimited JPEGs at 3 frames per second, versus the XTi's 27 JPEGs at 3 frames per second. That burst rate is truly impressive, and will appeal to casual sports shooters, as even the XSi is limited (to 53 JPEG images).



THE REBEL XS draws on features from its more pricey sibling, the Rebel XSi.

iPhone 3G: Gorgeous but Not a Required Upgrade

PCW Test Center

INNOVATIVE design and seamless integration between software and hardware propelled the first-generation iPhone to instant stardom. Its successor, the iPhone 3G, delivers more, at half the entry price of the original. The result is a classy device that's a strong choice for smart-phone shoppers, but not a must-have upgrade.

The iPhone 3G's name hints at its biggest enhancement: support for AT&T's 3G Mobile Broadband network (which uses HSDPA technology). I tested the phone in suburban Long Island, New York, where AT&T says it offers 3G network support. In the end, the iPhone 3G's Wi-Fi performance blew its 3G efforts out of the water.

On the original iPhone, with AT&T's EDGE network, PCWorld.com loaded in 158 seconds and a test MP3 file loaded in 52 seconds. When set to use AT&T's 3G network, the iPhone 3G loaded PCWorld.com in 38 seconds and the MP3 file in 80 seconds. Over the iPhone 3G's Wi-Fi, our Web site took 26 seconds, while the MP3 took 18 seconds.

Another major addition to the updated iPhone is GPS, but the native implementation is limited. (It employs a built-in GPS antenna, along with cell towers and Wi-Fi, to determine your position.) I was disappointed to discover that the integrated Google Maps app lacks audible turn-by-turn instructions and auto-recalculation of routes. Even the nicest fea-



THE IPHONE 3G has a multitouch screen, and supports apps, too.

ture I found had limitations: The map showed where traffic jams were, but didn't provide access to details on how to avoid them. Presumably, these oversights will be addressed with a third-party app from the App Store.

One pleasant surprise with this upgrade is that talk quality has vastly improved. The calls I made on the 3G network had excellent audio quality and clarity, and the

volume button adjusted the sound very effectively.

Though the new iPhone 3G has the same width and length as its predecessor, it is 0.2 inch thicker. In place of the original iPhone's metallic back is one composed of molded plastic; meanwhile, the buttons along the side—previously made of hard plastic—are now cast in solid metal (a subtle improvement).

The charger is significantly smaller—a good thing, since you may need to carry it more often. The iPhone 3G fell short of the original model (which lasted the full 10-hour maximum in our lab tests) on talk time, averaging 5 hours, 38 minutes. That's still better than most 3G phones we've tested, though.

One year and one upgrade later, Apple's iPhone still stands in a class by itself. If you own a first-generation iPhone, however, upgrading to the 3G is not essential.

—Melissa J. Perenson

84

VERY GOOD

iPhone 3G | Apple

With a lower price, 3G, and GPS, this phone is in a class by itself. List: \$199 (8GB)

find.pcworld.com/61287

Instinct Won't Slay the iPhone

PCW Test Center

FROM ITS SLIM design to its fingertip-friendly interface, the Samsung Instinct pays homage to the iPhone. It's worth a look if you dislike AT&T, but the Instinct is no iPhone killer.

82

VERY GOOD

Instinct | Samsung

A good handset and a great deal, but unlikely to slay Apple's 3G unit. List: \$130 with two-year Sprint service contract

find.pcworld.com/61237

Though the Instinct's touch screen is fairly responsive, it lacks the effortless smoothness of the iPhone's multitouch display. Battery life was about 5.5 hours in our tests, just shy of the iPhone's.

The Instinct is loaded with GPS features, and Sprint's zippy EvDO network makes Web browsing fast. But the browser—like the Instinct itself—lacks the elegance of the Apple competition.

—Yardena Arar

THE INSTINCT SPORTS a simple design and a big touch screen.



HP's TouchSmart PC: Good Looks but So-So Performance

THE HP TOUCHSMART
PCW Test Center IQ506 may be worthy of the Jetsons'

household. This all-in-one desktop PC is all screen—22 inches of 1650-by-1080-resolution display, with a laptop's guts hiding inside. Though the \$1500 TouchSmart isn't intended as a powerhouse desktop machine for running graphics-intensive games or crunching supercomputer-level data, it is a centerpiece system with a multitouch screen that's slightly ahead of its time.

If you didn't know better, you might mistake the slim, subtle design of the TouchSmart for that of a handsome LCD TV. Seeing it for the first time, I almost did—and not because of the remote or the NTSC/ATSC tuner, which provides access

to both analog and over-the-air high-definition signals.

The colors pop on its display.

This isn't HP's first attempt at an all-in-one. But the original TouchSmart IQ770 disappointed us with its poky components and its 19-inch touch screen's ability to recognize only a single point.

This time around, HP takes advantage of Windows Vista's ability to recognize two touch points on the screen. Whether you want to zip around documents, enlarge images, or swipe your finger across the display, the IQ506 works just as the iPhone's screen does; you can pinch your fingers together or push them apart to zoom in or

HP'S
TouchSmart PC
would look equally in its element in a living room, a bedroom, or an office.

out, for example. You can even play some basic games with the touch interface.

Unlike other recent all-in-ones, the IQ506 handles most productivity tasks easily. Its configuration is reasonable, though it lacks the processing oomph of competing value desktops. The model we tested came with a 2.16-GHz Core 2 Duo T5850 Intel CPU, 4GB RAM, and a 500GB, 7200-rpm hard drive. The TouchSmart handled everything from Photoshop to media encoding more smoothly than did the competing Gateway One. On our gaming tests, however, the IQ506's nVidia GeForce 9300M GS graphics chip hampered its performance (the Gateway ran Doom 3 roughly two times faster, and the Apple iMac did so two and a half times faster). The graphics results dropped the IQ506's WorldBench 6 score to a mark of 79; the Gateway had received an 87.

The TouchSmart comes with five USB 2.0 ports, one FireWire port, gigabit ethernet, an S-Video input, a slot-loading DVD player, and 802.11b/g/n Wi-Fi and Bluetooth built in. But it lacks

such core inputs for a home media hub as component or HDMI, and a Blu-ray Disc burner. And since you can't crack open its case for upgrades, the TouchSmart can't grow with you.

HP includes a serviceable wireless keyboard/mouse combo. You also get HP's excellent, touch-screen-enabled TouchSmart Software Suite. The apps in this media-centric package are easy to use and customize.

This \$1500 system combines classy design, the versatility to handle everyday tasks, and the ability to do light multimedia lifting. It doesn't have enough power to deal with more graphics-heavy activities. The TouchSmart would make a great second PC, but as a primary system it may not do everything you want it to do.

—Darren Gladstone



TouchSmart IQ506 | HP

Classy, nicely designed all-in-one doesn't wow with its performance. Street: \$1500

find.pcworld.com/61239

ASK OUR EXPERTS

Label Your Discs With Pics

I'M LOOKING TO print a photo onto a label sticker for a CD. Is this possible, and do I need to buy a special program?

Sandra E. St. Onge, via e-mail

Senior Editor Melissa J. Perenson responds: Arranging to print a photo label for a CD or DVD requires a little forethought. You'll want to buy either a dedicated inkjet labeling system (such products are available from Dymo and Primera) or an inkjet printer that supports printing directly to disc (models from Epson, Hewlett-Packard, and Lexmark commonly do so). You will also need to purchase what's called inkjet printable media (CDs); typically such discs have a smooth, specially treated white upper surface. The printed output looks far more professional and attractive than a glued-on printed label would look; and the direct-printing approach is more reliable, too.

E-mail your questions to askourexperts@pcworld.com, or post them online at forums.pcworld.com.

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• Heather Clancy
ZDNet.com

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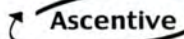
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42-Inch HDTVs: Put Your Best Picture Forward

MONEY BUYS QUALITY, but what you get isn't always worth the price. Consider the LG Electronics 42LG60 (aka the Scarlet, for its red back). The most expensive model in our latest group of 42-inch HDTVs, it scored highest in image quality, specifications, and design. This is one fancy TV.

Its easy-to-use on-screen menu system offers individual six-color controls. Sensors measure the ambient light in your room and adjust the set accordingly. Even the remote wears faux leather. So why does it rank fourth? Because at \$2600, it costs twice as much as the next-most-expensive model

in the test group, Toshiba's Regza 42RV530U.

Our overall Best Buy goes to Vizio's VO42L. Its image quality ranks only a hair's breadth below the Scarlet's, and its price is just \$1100. Vizio has a reputation for great image quality and low prices, but also for few extras, awkward on-screen menus, and poor design. The company seems to be striving to address past deficiencies of its HDTV models by adding easy-access side inputs and a cool-looking remote control to the VO42L.

For once, Vizio doesn't have the cheapest set. That distinction goes to the Westinghouse TX-42F430S. But



VIZIO'S VO42L offers very good images and sound at a decent price.

aside from its superlow estimated street price of \$949, there's nothing exceptional about this set. Its image quality and specifications placed it in the middle of the pack,

and it finished dead last in design, partly because of the cheap-feeling remote. But a 42-inch LCD HDTV for less than a grand is definitely worth considering.

The main drawback of the \$1300, third-ranked Toshiba Regza 42RV530U is that it doesn't produce very good images. *PC World's* judges found the screen overly bright, with a tendency to shift color toward yellow or orange. On the positive side, it's an easy TV to use, with clear and sensible menus, a glow-in-the-dark remote, and the ability to change sources appropriately when you start playing a disc.

Finally, the AOC Envision L42H761 grabbed fifth place. It displayed garbled images at times (leading to the worst performance score of the lot), and it lacks individual color controls for advanced calibration. Even the low \$1049 estimated street price couldn't raise this model to the fourth spot.

—Lincoln Spector

PC WORLD TOP 5 42-INCH HDTVs

MODEL	PCW Rating	Performance	Features and specifications
1 BEST BUY Vizio VO42L \$1100 NEW find.pcworld.com/61201	81 VERY GOOD	<ul style="list-style-type: none"> HDTV: Good DVD: Very Good Overall design: Good 	<ul style="list-style-type: none"> 1920-by-1080-pixel screen (1080p) Primary color controls Inputs: 4 HDMI, 2 component No ergonomic adjustments
BOTTOM LINE: The VO42L delivers very good image and sound quality at a reasonable price.			
2 Westinghouse TX-42F430S \$949 NEW find.pcworld.com/61208	80 VERY GOOD	<ul style="list-style-type: none"> HDTV: Good DVD: Good Overall design: Good 	<ul style="list-style-type: none"> 1920-by-1080-pixel screen (1080p) Primary color controls Inputs: 4 HDMI, 2 component No ergonomic adjustments
BOTTOM LINE: Great basic HDTV lacks the advanced features and good looks found on higher-end models.			
3 Toshiba Regza 42RV530U \$1300 NEW find.pcworld.com/61199	75 GOOD	<ul style="list-style-type: none"> HDTV: Good DVD: Good Overall design: Good 	<ul style="list-style-type: none"> 1920-by-1080-pixel screen (1080p) Primary color controls Inputs: 4 HDMI, 2 component Swivel adjustment
BOTTOM LINE: Superb sound and nice design touches don't make up for this set's overly bright, washed-out picture.			
4 LG Electronics 42LG60 (Scarlet) \$2600 NEW find.pcworld.com/61209	74 GOOD	<ul style="list-style-type: none"> HDTV: Good DVD: Good Overall design: Very Good 	<ul style="list-style-type: none"> 1920-by-1080-pixel screen (1080p) Primary color controls Inputs: 4 HDMI, 2 component Swivel adjustment
BOTTOM LINE: High-end LCD HDTV's advanced features, impressive style, and very good image quality come at a cost.			
5 AOC Envision L42H761 \$1049 NEW find.pcworld.com/61207	73 GOOD	<ul style="list-style-type: none"> HDTV: Fair DVD: Fair Overall design: Good 	<ul style="list-style-type: none"> 1920-by-1080-pixel screen (1080p) No primary color controls Inputs: 2 HDMI, 2 component No ergonomic adjustments
BOTTOM LINE: Below-average performance and poor design choices reduce this low-cost HDTV's appeal.			

CHART NOTES: Prices and ratings are as of 7/11/08.

MORE ONLINE Visit PC World's HDTV Info Center (find.pcworld.com/61243) for in-depth reviews, test results, and specifications.

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"It's as if someone behind your back reached out, found the volume control for the world, and turned it way, way, down," reports *TechnologyReview.com*. Bose QC*2 headphones incorporate patented technology that electronically identifies and dramatically reduces noise, while faithfully preserving the music, movie dialogue or tranquility you desire. We designed these headphones primarily for airplane travelers. But owners soon started telling us how much they enjoy using them in other places to reduce distractions around them. They're excellent for listening to music whether you're on the go, at home or in the office.

"Forget 'concertlike' comparisons; you'll think you're onstage with the band." That's what *Travel + Leisure Golf* said when these headphones were first introduced. You'll relish the sound of a bass guitar. Or a flute. Or the delicate inflections of a singing voice. The audio is so clear you may find yourself discovering new subtleties in even your favorite music.



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Polaroid's Portable PoGo Offers Instant Prints

THE WORLD of cameras may have gone digital, but *Polaroid* remains synonymous with instant photo prints. So it's no surprise that Polaroid has introduced

the PoGo portable printer for producing instant prints.

The \$150 PoGo is the first photo printer to use Zink, the zero-ink technology that Polaroid pioneered. A thermal printhead activates

the 100 billion or so dye crystals embedded in Polaroid's glossy photo paper.

Printing was easy. The device can create prints of snapshots from a digital camera or from a camera phone. It connects to cell phones via Bluetooth and to PictBridge-enabled cameras over USB.

I had no difficulty pairing the PoGo with my Palm Treo 680, and the printer took less than a minute to output a 640-by-480-resolution image of a picture I had snapped with my Treo's camera.

The printer's scaling software automatically adjusted my images to fit the paper's 2-by-3-inch area. As a result, however, the bottom or top of an image sometimes got

chopped off—and there's no way to control what appears in the final print.

The PoGo's appeal lies in its mobility and its almost-instantaneous picture production. Sure, \$150 is steep for this one-trick gimmick printer. But that doesn't detract from its silly fun.

—Melissa J. Perenson



THE POLAROID
PoGo printer is small enough to fit in your hand.

78
GOOD

PoGo | Polaroid

Nifty portable printer offers quickie snaps but is pricey for what it does. Street: \$150

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PHOTOGRAPHS: MARC SIMON

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Panasonic's Polarizing Touch-Screen Camera

PCW Test Center THE BRUSHED metallic surface, well-placed flash, and 25mm-to-125mm Leica 5X optical zoom lens of Panasonic's 10-megapixel Lumix FX500 are appealing. But the mar-quee feature of this \$400 point-and-shoot camera is

its 3-inch touch-screen display, a component sure to generate controversy among photography purists.

You can use the FX500's touch screen to zoom in and out on photos you've taken, and to reach some menu settings more easily. It eliminates the tedious drilling-down required on many cameras—which is especially good news considering that the FX500 offers 21 preset scene modes, including portrait, party, and starry night.

To adjust manual settings, aperture priority, and shutter priority, you have to use



THE BRUSHED
metallic shell of the
FX500 adds to its sleek look.

scroll bars on the touch screen. Even people with fine motor control may find this process frustrating unless they resort to using the FX500's included stylus.

Image quality was mixed in our lab tests: The FX500 produced sharp images, but it didn't distinguish itself in either our flash-exposure or

our normal-exposure tests.

I found almost no lag time between when I pressed the shutter and when pictures wrote to the card. This characteristic, combined with the quick, accurate autofocus and exposure, makes the Panasonic Lumix FX500 very satisfying to shoot with.

—Kathleen Cullen

76
GOOD

Lumix FX500 | Panasonic

Classy little camera won't replace a digital SLR, but it handles a lot.

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Firefox 3: The Web Browser to Beat

FIREFOX 3 may not look very different from version 2 of the Web browser—but when you start using it, you'll soon realize how much more this update has to offer.

You'll see only a few visual clues that something's different with Firefox 3.0, such as a pushed-together forward and back button, and a little



FIREFOX 3 LOOKS almost identical to version 2; only subtle changes have been made to the interface.



Firefox 3 | Mozilla

New features and improved performance make this browser the best.

Free

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star that now appears in the location bar. Click that star, and you'll add the Web page you're viewing as an unfiled bookmark. Click it again, and you can choose a particular folder, add a description, or select tags—all of which are stored in a new, behind-the-scenes database.

You can search the database, along with all of your browsing history, simply by

typing a keyword (instead of a URL) into the location bar.

Other changes: The download manager can now resume halted downloads; a nifty zoom menu option permits you to resize either the entire page or just the text on the page; and a new password saver lets you wait until after you've successfully logged in to decide whether to save your credentials.

On the security front, Firefox 3 will block sites that are known to spread malware, based on a Google blacklist, as well as blocking phishing sites (for more, see page 53). It also adds support for Extended Validation certificates.

Existing Firefox users will want this upgrade, and version 3 should convince non-users to make the switch.

—Erik Larkin

Special Advertising Supplement

Mission-Critical Business Continuity Solutions

R-Tools again strengthens and extends its line of world-class utilities and solutions

Neither your business nor the business world stands still. That's why R-Tools, the leader in world-class data recovery solutions, has once again beefed up R-Studio, its Vista-ready utility that allows users to preview file types before recovery.

Branching out from the Microsoft world, the latest improvement is **R-Studio for the Apple Macintosh**. This versatile solution can be installed on the Macintosh OS X, specifically on versions 10.4 and 10.5.

Other recent improvements to R-Studio have included a sorting algorithm that allows the sorting files according to file type, time of creation, file size and so on. R-Studio was also recently enhanced with HFS and HFS+ file systems support, UFS/BigEndian support, GPT partition layout schema support and Apple

partition map support.

In addition, R-Tools has announced improvements to **R-Wipe & Clean**, which automatically keeps applications free and clear of harmful clutter. This innovative utility now supports the latest versions of Mozilla Firefox and Opera.

And that's not all. R-Tools has unwrapped a new product called **R-Disk Encryption**. This utility allows users to quickly and easily create a virtual encrypted disk on any hard drive, including network drives, or on any removable media.

R-Tools' recent enhancements to **R-Drive Image**, which gives users mission-critical capability to totally restore their systems after a major



crash, included support for backup sets so that full/differential archives can be created with the same file names while old archives are deleted when specified conditions are exceeded. R-Drive Image can now create an image of a hard drive without any partition.

Other stellar 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. And **R-Word** and **R-Excel** recover damaged Word or Excel files that have been corrupted or attacked.

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Lenovo's Bright, Slight IdeaPad U110

PCW Test Center

LENOVO'S supersvelte IdeaPad U110 is about as flashy as ultraportable laptops get. Between the fire-engine-red lid and the rugged rubbery base, the IdeaPad U110 is a bona fide MacBook Air rival.

It weighs 2.9 pounds with its seven-cell battery in place, and measures 10.8 inches by

7.7 inches by 0.72 inch. It's powerful for an ultraportable, with a 1.6-GHz Intel L7500 Core 2 Duo CPU and 2GB of RAM, but in WorldBench 6 tests it earned a so-so 65.

The 120GB hard drive spins at a poky 4200 rpm, but the U110's battery life was decent: 4 hours, 38 minutes. It offers three USB 2.0 ports and one FireWire port, PC Express and SD Card slots, an ethernet jack, and VGA-out. On a laptop with an 11.1-inch screen at 1366 by 768 resolution, you might expect a small keyboard with tiny buttons. But for an ultraportable, the U110 has huge keys. Though the wide, flat

WITH ITS fire-engine-red cover and black body, the U110 is a looker.



keys took some getting used to, I had no trouble tapping out this review.

Alas, it's a fingerprint magnet, and its glossy coating creates an annoying glare.

Despite its flaws, the IdeaPad U110 deserves praise as

an intriguing, stylish

laptop. But considering how hard the screen is to see in some conditions, the \$1900 price is hard to justify.

—Darren Gladstone

76
GOOD

IdeaPad U110 | Lenovo

Ultraportable looks sharp, but its performance isn't nearly as pretty. Street: \$1900

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* Ships with Saitek's Smart Technology programming software

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Pinnacle Studio 12 Adds Blu-ray, YouTube Output

TVs HAVE GONE high-def in a big way, but YouTube and other online venues continue to serve standard definition. Pinnacle's Studio Ultimate 12 video-editing software tries to maximize its appeal by adding Blu-ray Disc, Flash video, and direct-to-YouTube support.

The previous version of Studio Ultimate let users import footage in the Advanced Video Codec High Definition (AVCHD) and High Definition Video (HDV)

formats, and create HD DVD discs. Studio Ultimate 12 drops HD DVD in favor of Blu-ray Disc authoring, with tools that include animated menus. Studio performed sluggishly with AVCHD files on both systems that I used with it. The Blu-ray discs I created wouldn't play in an older Blu-ray player, but they worked fine in a newer model, which recognized discs burned in AVCHD format. You can change the app's settings to create discs



STUDIO'S NEW MONTAGES let you create slick video openers, some of which allow you to display multiple videos moving on a background.

Save Your Photos, Simply

HP'S SIMPLESAVE Photo is a backup product that's just about as easy as it gets.

SimpleSave Photo consists of a pack of five DVDs retailing for \$15. All of the DVDs include the SimpleSave software component, which is de-

signed to launch automatically when you pop any of the five discs into your PC's DVD burner. The application automatically finds photo and video files that you have stored on your PC; afterward you merely click a button to start the backup, exchanging DVDs when prompted.

Purchasing a stack of blank DVDs and backing up files manually would be cheaper. But SimpleSave gives you a much easier way to protect your priceless photos.

—Liane Cassavoy



SimpleSave Photo | HP

A convenient way to protect priceless photos and videos. List: \$15
find.pcworld.com/61159



SIMPLESAVE TELLS YOU how many DVDs your backup will require.

for older Blu-ray models.

Uploads to YouTube have just one quality setting—which is understandable, since YouTube has a single upload setting, but I'd still like more control over the quality of the uploaded video. I've found that the higher the quality is before I upload videos, the better the YouTube versions are.

A new feature, Pinnacle Montage, provides 11 themes and 80 templates that you can use to add effects such as menus of moving frames with video, animated text, and graphics. Some of the Montage options are snazzy, but customization is limited. For example, you can specify multiple moving frames, but you can't adjust how quickly they appear and disappear.

Three new plug-in packages included with Studio Ultimate 12 confer varying benefits. The proDAD VitaScene plug-in contains many neat transitions—blurs, spins, and so on—along with at least as many effects as the main Studio application has. The Magic Bullet Looks-Builder SE plug-in provides many powerful settings for customizing the way clips look, but it doesn't let you

set key frames. Boris Graffiti, the third new plug-in, is designed for adding moving titles. Unfortunately, you must use whatever interface the plug-ins require, rather than Studio's standard interface, so that's three different tools you have to learn.

A small but welcome new feature: If your drive runs out of space while you're outputting content, you can pause the operation. Regrettably, you can't pause output for such purposes as to check your e-mail—unlike with Corel VideoStudio 11. I experienced a few crashes with Studio 12, as well, but the app seemed more stable for me than past versions.

Studio Ultimate 12 has more features than any other consumer-level video editor, but I still prefer Adobe Premiere Elements 4 because of its more elegant interface and superior stability.

—Alan Stafford



Studio Ultimate 12 | Pinnacle Systems

It packs plenty of features but still lags behind competitors. List: \$130
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Happy Medium: Konica Minolta's Capable Laser

PCW Test Center

COLOR LASERS may be low-cost or pricey, or they may try to split the difference. Konica Minolta's seventh-ranked Magicolor 4650EN has its shortcomings, but it offers brisk speed, competent print quality, and a sturdy design for the price (\$699).

HP's new Color LaserJet CP1518ni debuts in tenth place. It's inexpensive and easy to use, but has some flimsy-feeling components.

Hobbled by a disappointing design, Oki's \$2399



KONICA MINOLTA'S \$699 Magicolor 4650EN.

C8800n missed the chart, despite its wide-format capabilities and speedy engine.

When you shop for a printer, factor in the cost of consumables. Lower-priced models tend to have lower-capacity cartridges and thus a higher print cost per page. If you don't print much, however, a higher-volume printer, though cheaper to operate, may be overkill.

—Melissa Riofrio

MORE ONLINE

Visit PC World's Printer Info Center (find.pcworld.com/61285) for in-depth reviews and specifications for these products.

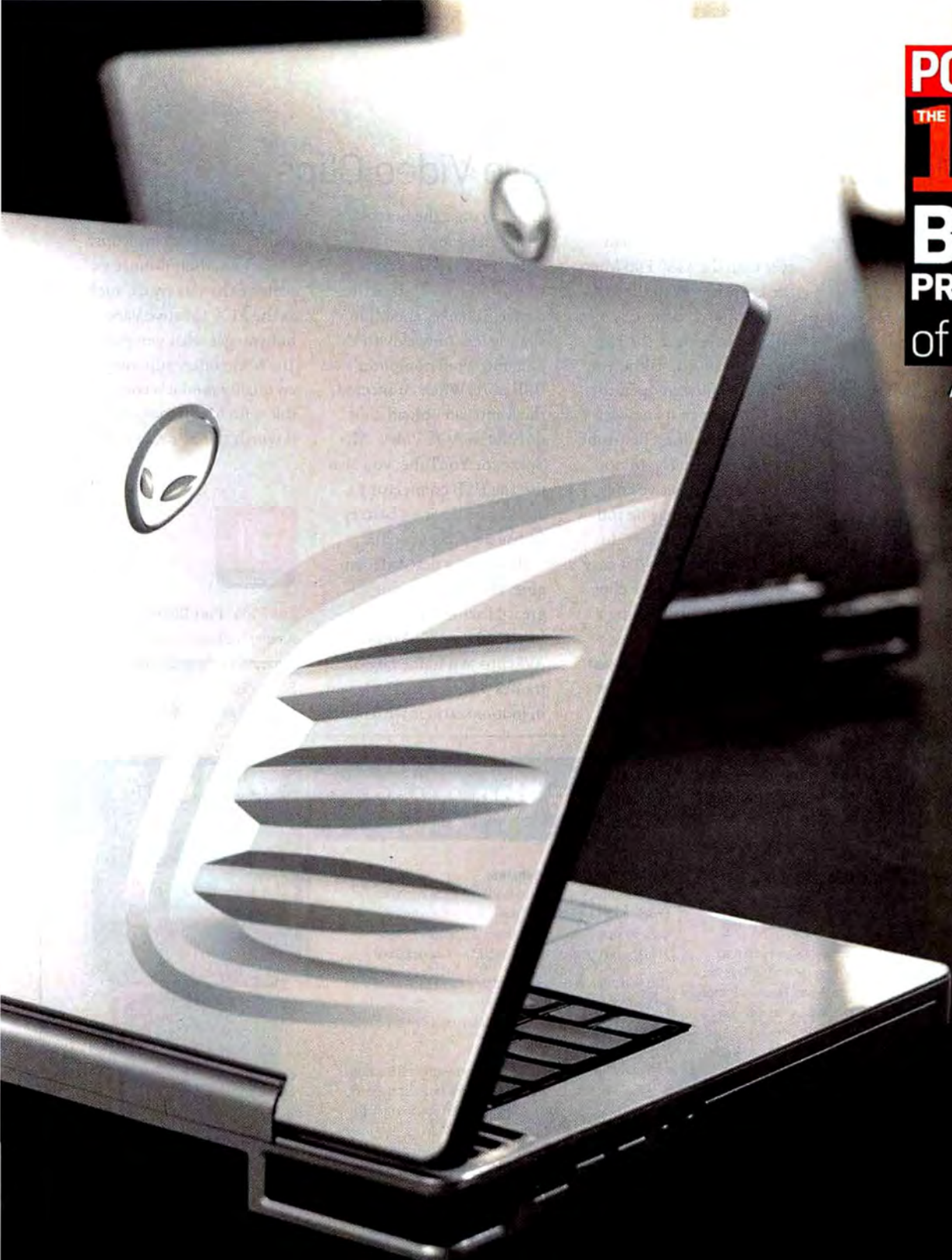
PC WORLD TOP 10 COLOR LASER PRINTERS

MODEL	PCW Rating	Performance	Features and specifications
1 BEST BUY Brother HL-4040CN \$400 find.pcworld.com/57915	84 VERY GOOD	<ul style="list-style-type: none"> Text quality: Superior Graphics/photo quality: Good/Fair Tested speeds (ppm): 19.3 text/4.2 graphics 	<ul style="list-style-type: none"> 21 ppm text 21 ppm graphics 2400-by-600-dpi maximum resolution
BOTTOM LINE: This printer balances a good price, speed, and excellent print quality against a sometimes-awkward design.			
2 Dell Color Laser Printer 1320c \$299 find.pcworld.com/57973	82 VERY GOOD	<ul style="list-style-type: none"> Text quality: Very Good Graphics/photo quality: Superior/Very Good Tested speeds (ppm): 12.4 text/4.2 graphics 	<ul style="list-style-type: none"> 16 ppm text 12 ppm graphics 600-by-600-dpi maximum resolution
BOTTOM LINE: A low price and great-looking photo quality help this model stand out, but its toner cartridges are expensive.			
3 Konica Minolta Magicolor 2530DL \$399 find.pcworld.com/56555	80 VERY GOOD	<ul style="list-style-type: none"> Text quality: Very Good Graphics/photo quality: Good/Fair Tested speeds (ppm): 17.3 text/2.6 graphics 	<ul style="list-style-type: none"> 20 ppm text 5 ppm graphics 2400-by-600-dpi maximum resolution
BOTTOM LINE: The compact 2530DL can print photos directly from a digital camera, and it offers a competitive cost per page.			
4 Oki Printing Solutions C5500n \$750 find.pcworld.com/56552	80 VERY GOOD	<ul style="list-style-type: none"> Text quality: Very Good Graphics/photo quality: Good/Fair Tested speeds (ppm): 23.9 text/5.0 graphics 	<ul style="list-style-type: none"> 24 ppm text 20 ppm graphics 1200-by-600-dpi maximum resolution
BOTTOM LINE: This medium-priced GDI-based printer offers dual paper trays and fast print speeds, especially for graphics.			
5 Ricoh Aficio CL3500N \$500 find.pcworld.com/55218	79 GOOD	<ul style="list-style-type: none"> Text quality: Fair Graphics/photo quality: Poor/Fair Tested speeds (ppm): 19.3 text/4.3 graphics 	<ul style="list-style-type: none"> 22 ppm text 22 ppm graphics 1200-by-1200-dpi maximum resolution
BOTTOM LINE: The CL3500N provides excellent paper handling, but its print quality for graphics and text was disappointing.			
6 Lexmark C530dn \$499 find.pcworld.com/56554	79 GOOD	<ul style="list-style-type: none"> Text quality: Very Good Graphics/photo quality: Good/Fair Tested speeds (ppm): 20.7 text/3.6 graphics 	<ul style="list-style-type: none"> 24 ppm text 22 ppm graphics 1200-by-1200-dpi maximum resolution
BOTTOM LINE: This model is inexpensive for a color laser that handles double-sided prints and comes with two paper trays.			
7 Konica Minolta Magicolor 4650EN \$699 NEW find.pcworld.com/61205	79 GOOD	<ul style="list-style-type: none"> Text quality: Superior Graphics/photo quality: Very Good/Good Tested speeds (ppm): 23.1 text/3.9 graphics 	<ul style="list-style-type: none"> 25 ppm text 25 ppm graphics PhotoART 9600 resolution system
BOTTOM LINE: A competent color laser, the Magicolor 4650EN comes through with an attractive price and a sensible design.			
8 Xerox Phaser 6180/N \$499 find.pcworld.com/56551	78 GOOD	<ul style="list-style-type: none"> Text quality: Very Good Graphics/photo quality: Fair/Fair Tested speeds (ppm): 23.7 text/1.9 graphics 	<ul style="list-style-type: none"> 26 ppm text 20 ppm graphics 600-by-600-dpi maximum resolution
BOTTOM LINE: The Phaser 6180/N prints high-quality text fairly quickly, but it finds color images more challenging to produce.			
9 Oki Printing Solutions C5800Ldn \$999 find.pcworld.com/52626	77 GOOD	<ul style="list-style-type: none"> Text quality: Superior Graphics/photo quality: Good/Fair Tested speeds (ppm): 26.3 text/5.5 graphics 	<ul style="list-style-type: none"> 28 ppm text 24 ppm graphics 1200-by-600-dpi maximum resolution
BOTTOM LINE: This GDI-based printer with built-in duplexer was the fastest model on our chart at printing graphics and text.			
10 HP Color LaserJet CP1518ni \$399 NEW find.pcworld.com/61203	75 GOOD	<ul style="list-style-type: none"> Text quality: Superior Graphics/photo quality: Very Good/Good Tested speeds (ppm): 11.2 text/2.0 graphics 	<ul style="list-style-type: none"> 12 ppm text 8 ppm graphics HP ImageREt 3600 system
BOTTOM LINE: It doesn't cost much, but this printer is also a lot slower than many like-priced (and some lower-priced) models.			

CHART NOTES: Prices and ratings are as of 7/11/08. Speeds are in pages per minute (ppm); resolutions are in dots per inch (dpi).

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July 2008



AREA-51® m15x

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Flip Mino Captures Clear, Sharp Video Clips



PURE DIGITAL HAS made video posting easier than ever with the \$180 Flip Mino, the latest model in the Flip series of pocket camcorders.

If you have used the Flip Video or the Flip Ultra, you will know how to operate the Mino; even its new features are easy for a first-time user to master. The Mino adds touch-sensitive controls, but they may be too touchy for some users. In our testing we found it easy to play back or delete clips accidentally by brushing a

THE FLIP MINO is the smallest model in Pure Digital's line of pocket camcorders.

finger against the buttons.

Also new on the Mino is the location of the flip-out USB jack on the top of the device. It makes the Mino slightly less unwieldy to plug into your computer's USB port. When connected, the Mino can upload clips directly to AOL Video, MySpace, or YouTube; you also use the USB connector to charge the device's battery (it has no power cord).

Thanks to a new video engine, the Mino produces great-looking SVGA resolution (640 by 480) MPEG-4 AVI clips at a frame rate of 30 frames per second. And even in indoor settings with medi-

ocre lighting, the Mino still turns out clear, sharp clips.

The Flip Mino is more expensive than its rivals, such as the \$100 Creative Vado, but you get what you pay for. The Mino offers superior video quality (and it's compatible with Macs, too), making it worth the extra scratch.

—Tim Moynihan



Flip Mino | Pure Digital

Among YouTube-friendly pocket camcorders, the pricey Mino is king. Street: \$180

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PHOTOGRAPHS: MARC SIMON

Give your iPhone double the juice.

The first pocket-sized battery that packs a full 1200 mAh.

by Richard Thalheimer

My iPhone is my favorite product, though I use it so much, it gets low on battery power by dinner. This led me to develop the rechargeable Smart Backup Battery specifically for iPhone and iPod. Just snap it on (no cable), and it begins to charge the iPhone battery. This powerful 1200 mAh has 20% more capacity than its closest competitor. You can charge the iPhone while using it, and you can charge the battery and iPhone together with included USB or wall plug charger — like getting an extra charger for free!

There's nothing quite like it.

Other chargers use disposable AAs, or cheap plastic cases, or gray-market connectors, and may even damage your iPhone. Ours has a tough aluminum case, and is certified for iPhone. Lithium-ion takes hundreds of charges and doesn't develop memory. Three LED lights indicate charge status. Works with all iPhone and iPod models except shuffle.



Reviewers give it top marks.

"So does the RichardSolo Battery (made by Sharper Image Founder Richard Thalheimer) make for an easy-to-use, no-nonsense backup battery?...Yes! This thing is great. It's that good." — **CrunchGear**

"Do you often find yourself in the middle of the day with your iPhone battery in the red? If so, I might have the perfect product for you...I found out how amazing this product was." — **iPhone24x7**

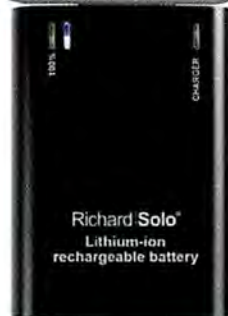
"With its simple, easy-to-use design, the Backup Battery will zap your Apple iPhone and iPod partway back to life when you're running out of juice." — **CNET**

"This is a must have iPhone/iPod accessory. When I say 'must have', I mean get online and buy it, NOW!" **Editor's Choice Award** — **BuyMeAniPhone.com**

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Livescribe Pulse Rewrites Note Taking

THE PULSE "smartpen" from Livescribe is part pen, part recorder, and part nothing you've ever seen before.

The Pulse records sounds through integrated stereo microphones and then creates audio notes that it "ties" to your written notes. The device works with special notebooks and ink cartridge-

es; the paper bears scarcely noticeable dot patterns that provide a reference grid.

This allows the pen to jump to specific moments in your note-taking history and play back audio or voice notes recorded at that time.

To record audio while you write, you tap the printed 'record' button at the bottom of your sheet of paper. When you're done recording, you tap 'stop'. The Pulse records audio with surprising clarity and directional precision; the pen's on-board microphones performed well in my tests.

Livescribe gives you two ways to play back notes.

One is to tap a printed pattern at the bottom of each page, bringing up the menu on the pen's OLED screen.

You then select the day and time of audio to play back.

The second way to play back audio is by tapping written notes in your notebook; when you do so, you can hear the audio that was recorded at the exact moment you wrote those notes. This feature is extremely useful for recording short-hand notes and interviews.

Once you plug your pen into its USB cradle and connect it to your PC, you can see a page-by-page archive of your notes. From there

THE PULSE IS about the same size as a Sharpie marker.

you can use the desktop app to listen to and manage your voice recordings. The software is well designed, but it lacks an optical character recognition mode for converting your handwriting into text.

The Livescribe Pulse may have limited appeal, but it's certainly innovative and a whole lot of fun to use.

—Tim Moynihan



93
SUPERIOR

Pulse | Livescribe

A truly innovative and fun way to take notes and record audio.

Street: \$150 (1GB)

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Everything You Need *Right Out of the Box*

PowerSuite from Spotmau offers all the TLC Microsoft Windows needs

MICROSOFT WINDOWS

requires lots of tender loving care to keep it running optimally. In order to tweak settings, run needed maintenance and fix the inevitable glitches, you can search among myriad tools—if you're able to get online.

Most of us, though, don't want to acquire dozens of separate utilities to meet any eventuality, and we need a solution that works when Windows won't even start up.

Spotmau provides an answer with its PowerSuite Professional 2008, a multifunctional and easy-to-use toolkit that provides all the useful utilities you need in one bootable CD. So whether you want to clean up Windows, or you require help getting Windows to operate, PowerSuite has everything you need.

The downloadable software creates a CD-ROM (also available by mail for a small

charge) that provides a full suite of Windows utilities, as well as the ability to boot up your PC and diagnose and fix the problem when Windows doesn't open.

The PowerSuite CD has easy-to-use interfaces and easy-to-understand directions for any PC user, from novice to expert. This everyday toolset for PC maintenance and optimization also provides an emergency kit for rescuing and recovering your precious data and system.

Whether the issue is speeding up Windows, shredding or recovering data, or backing up and restoring your system, the PowerSuite toolkit has the solution for the task at hand. Among the nifty utilities, you'll find the ability to recover lost passwords and Microsoft product keys, restore your Internet Explorer, and encrypt folders.



The PowerSuite CD is so powerful that every PC user should keep one as a necessary toolkit to make sure Windows works the way you want it to, when you want it to.

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Titan's Better Backup

IT CAN'T CREATE partition images, but Neobyte Solutions' \$40 Titan Backup does just about everything else: back up files (including ones you have open), compress backups to .zip files or to executable .zip archives, and secure them with 256-bit AES encryption. Options include the ability to run other software before and after backups and the ability to remember log-in information for backing up to protected



TITAN BACKUP is graced with an excellent, intuitive interface.

network locations. I had no problems backing up to network folders, flash drives, CDs, or DVDs—or via FTP.

The excellent Titan interface intuitively combines tabbed dialog boxes and step-by-step wizards. Alas, it's now competing with the feature-rich NovaBackup, which costs only \$10 more.

—Jon L. Jacobi



Titan Backup | Neobyte Solutions
Intuitive backup app offers almost everything you need. Download: \$40
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Software That Enlightens or Lets You Lighten Up

BUSY PEOPLE NEED special tools to help sort things out. With these programs, you can get the scoop on who's visiting your Web site, pinpoint word meanings, and solve a slick puzzle.

Easy Web Stats

There's more to Web page data than hit counters—but you need help finding it. Woopra serves up all kinds of data in a clean, easy-to-understand interface.

Currently in free beta, Woopra is a Web analytics service with a desktop client: You sign up, install the software, paste a JavaScript snippet on your site, and then use Woopra to view an array of real-time and historical data about your visitors—what city each one is in, what browser and OS each uses, the referring page, and more. Using Woopra, I learned that a plurality of visitors to a friend's Web comic strip site use Firefox and 1068-by-786-resolution monitors—useful information for site creation.

You might have to wait to get into the popular beta program, but Woopra is worth standing in line for. Free, find.pcworld.com/61221.

The Right Word at Your Fingertips

Most people who work on PCs turn to either a heavy paper dictionary or a Web-based one; but the Talking Merriam-Webster Dictionary is even easier to access, via a system tray icon.

It contains 75,000 definitions for a total of 45,000 entries, including 10,000 that the program can say aloud. Searches are easy and fast; you can choose and resize fonts, too. Advanced Mode provides a Comments field for your personal annotations. If you have any other Merriam-Webster dictionary from vendor Paragon—foreign-language or medical, say—you can search it from the same interface.

In my tests, pronunciations sounded more British than American in accent, which might not help if you want to learn American English. The choice of words recorded could be better,



PERSONALIZED DEFINITIONS: The Advanced Mode in the Talking Merriam-Webster Dictionary provides a Comments field for notes.

too: Surely we'd benefit more from hearing "trompe l'oeil" pronounced than "troop." Paragon promises that the sound file available by the time you read this will feature native speakers of American regional dialects.

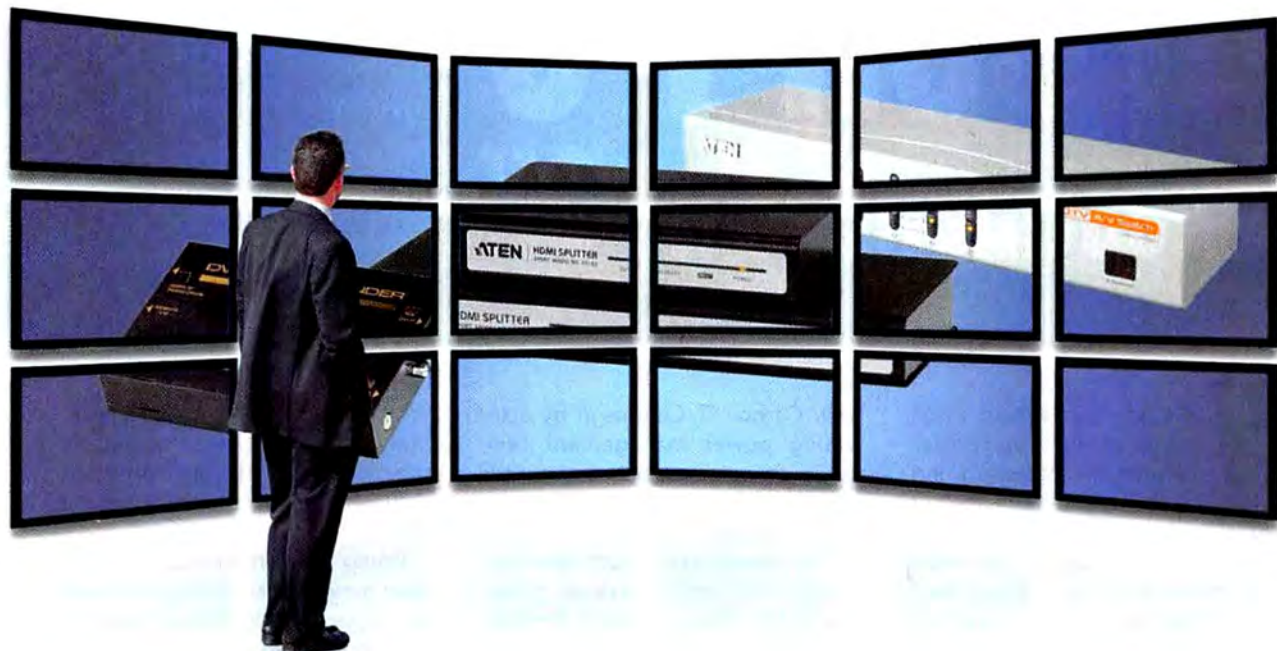
The demo works indefinitely, but nag screens pop up after 100 definitions. Free demo, \$31 for nag-free full version; find.pcworld.com/61223.

Hidden Objects Are My Business

When \$4 billion vanishes from Las Vegas's newest casino, the owners turn to the Mystery PI for help. In Mystery PI: The Vegas Heist, every spider or socket wrench could be a clue.

This sharp-looking game is a grown-up version of the hidden-object puzzles you used to solve during rainy-day recess. Cluttered and realistic-looking Vegas scenes show some items in obvious context, but others are harder to find, such as a lightning bolt that's part of a sign or a gigantic nail file worked into a vehicle. Hints ding your score—and the hint-o-meter takes time to recharge—but you might need to cave in when you need help figuring out what a 'car transmission' or 'antique iron' looks like.

Mystery PI: The Vegas Heist is an entertaining and stylish brainteaser that should appeal to puzzle fans. But SpinTop Games gives away only the first hour for free. After that, you must either buy the full game or hang up your trench coat and fedora for good. Free 1-hour demo, \$20 for full version; find.pcworld.com/61224.



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Green PC Investments Pay Off

The soaring cost of energy makes it easier to bridge the divide between a desire to implement environmentally friendly "green" computer use policies and the bottom-line impact.

BY PETE BARTOLIK

With the rapid run-up in oil prices driving up power generation costs, going green is no longer an issue of social responsibility—it's fiscally responsible. According to IDC's U.S. Green IT survey late last year, even before oil and gasoline prices soared to record levels, 80% of polled executives said that green IT was growing in importance for their organization.

For many PC users, though, simply turning off the power is not an option. Many are working at the keyboard all day, while others have ongoing programs such as remote backup and operating system patching that run automatically when the system is idle.

Recognizing that PCs are used many more hours per day now than in the past, the U.S. Environmental Protection Agency and the U.S. Department of Energy last year revamped the ENERGY STAR® standards for computer products.

The new ENERGY STAR rating covers desktop and notebook computers, game consoles, integrated computer systems, desktop-derived servers and workstations. While the previous version set minimum standards that were inclusive, it now designates only the most energy-efficient systems.

In addition to encouraging purchase of ENERGY STAR qualified systems, the government program is also urging businesses to join a

Low Carbon IT Campaign by activating power management features on monitors and computers to save energy and reduce the carbon footprint.

But power use is just one element in a comprehensive green PC policy. The Electronic Product Environmental Assessment Tool (EPEAT) is a procurement tool founded on the IEEE 1680 standard to help evaluate, compare and select desktop computers, notebooks and monitors based on multiple environmental attributes.

While designed for large organizations, individual buyers can review the product list available at www.epeat.net for help in the selection process.

Doing your homework on the environmental ramifications of your computer purchases is an exercise that pays off in energy savings. If there's a silver lining to rising energy costs, it is that investing in green PCs is an easier decision to make.

Pete Bartolik is a freelance writer in Hopkinton, Mass.

Budgetary, planetary impact

SMALL CHANGES CAN POSITIVELY IMPACT YOUR BUDGET AND THE PLANET. YOU CAN GET STARTED WITH THESE SIMPLE STEPS:

- 1** Promote energy-savings habits. Deploy power management tools on your computing devices by enabling sleep settings and turning off PCs at night.
- 2** Save energy out of the box. 80% efficient power supplies can be configured on select HP Business Desktops and come standard on HP Workstations to help you reduce energy costs.
- 3** Choose an ENERGY STAR® qualified product signifying energy efficiency.
- 4** Choose responsible design for greater peace of mind. The EPEAT rating system makes it simple to evaluate and compare environmental attributes of computers and monitors.
- 5** Reuse, recycle and reap the benefits. The HP Trade-In program (www.hp.com/united-states/tradein) will determine the value of your current technology products, any brand, and apply it toward the purchase of new HP products. HP Recycling programs will take care of pickup, responsibly dispose of, and provide documentation of your recycling efforts (www.hp.com/go/recycle).
- 6** Contact HP today for more information on energy efficiency: www.hp.com/go/energyefficient.





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Get the Most Out of Your Laptop

Your notebook may be old, but that doesn't mean its days are numbered. We'll show you how to breathe new life into your portable by upgrading components and adding incredibly useful accessories. »

BY CHRISTOPHER NULL
PHOTOGRAPH BY CHARLIE NUCCI



Want better performance from your laptop?

The conventional wisdom has long held that you should simply buy a new one. You can put such conventional wisdom aside: Upgrading a laptop may not be for the timid or the impatient, but if you're handy

with a screwdriver, and the sight of a circuit board doesn't scare you, an upgrade can be a far more affordable solution.

We took tools to hand and worked our way through eight common (and not so common) laptop upgrades, in some instances stripping our test machine—a Dell Inspiron E1505—down to the bare chassis. We can't fit complete step-by-step, unscrew-this-and-unplug-that instructions for everything into this article, but we can provide tips to help with each process.

And note that every laptop varies: Even machines from the same vendor can have very different designs and therefore wildly different disassembly methods.

Before you start, keep these essential points in mind:

- » Many of these upgrades will void your laptop's warranty.

- » Some upgrades can damage your laptop. If you are at all uncomfortable with such tinkering, leave it to a pro.

- » Most vendors provide disassembly instructions in their products' service manuals, which can usually be found on their Web sites' support sections.

- » Unplug your laptop and remove the

battery before attempting any upgrade. Also, to avoid damage from static electricity, use a grounded wrist strap.

- » You'll need a collection of small screwdrivers, including flathead, Phillips, and possibly even Torx.

- » Speaking of screws, keep them organized as you remove them. We like to use Dixie cups for each step. Just write

"LCD assembly" or "keyboard" or whatever on each cup as you go, to help you remember which screws go where.

- » Pay special attention to wiring. Laptops have intricate channels where the wiring must run; stray wiring may get pinched or may prevent other parts from fitting together correctly.

- » No matter what machine you're working on, first upgrade your BIOS. You'll need up-to-date BIOS code to support many newer components.

- » Not every laptop component can be upgraded. Some may be soldered or otherwise permanently attached.

RAM



TIME: 10 minutes

Adding or replacing memory has always been one of the

simplest upgrades to perform on a laptop; even novice computer users should have no difficulty with it. And in our tests, this upgrade gave the most bang for the buck. On our Dell Inspiron E1505 test



PHOTOGRAPHS: ROBERT CARDIN

Great Accessories and Add-Ons That

HERE ARE TEN cool ways to add useful new features and functionality to your laptop without even having to crack the case.

Get Connected, Wi-Fi or Not

Wi-Fi is super-convenient, but hotspots can be hard to come by, and many proprietors charge a pretty penny to use them. One easy way to enhance your connectivity options is to add a 3G Wireless WAN (WWAN) data device to your laptop. The three big carriers (Verizon, AT&T Wireless, and Sprint Nextel) all offer such devices, available in several formats: PC Card, ExpressCard, or USB.

The best place to get one of these devices is at your wireless telecom company. If you commit to a service plan at the same time, their prices range from free, for

AT&T's USBConnect 881 (it's free after rebates, anyway), to about \$150, for Verizon's USB727 Modem (which has a removable memory card slot). Performance doesn't vary much from carrier to carrier or from device to device, so buy the one that has the best coverage in the area where you typically work or travel.

**VERIZON'S
3G USB727
modem.**



As a side note, some newer 3G cards, such as

Sprint's Merlin EX720 ExpressCard, come with built-in and unlocked GPS receivers, which means that you can use the GPS features whether you're connected to a cellular network or not. It's

model, an upgrade from 1GB of RAM to 2GB (cost: \$50) boosted the laptop's WorldBench 6 score from 57 to 62.

Quick tip: Use Crucial's System Scanner (at crucial.com) to find out what type of RAM modules you need. You can mix and match old modules with new ones, but some systems may end up with better performance if you install a matched pair of identical DIMM units.

Most laptops have a panel on the underside that, when removed, exposes the DIMM slots for RAM [photo 1, page 84]. (On some models, you must remove the keyboard to reach the slots—see the graphics card upgrade on page 88 for this step.) To remove the panel—which is often labeled either with an M (for *memory*) or with a picture of a RAM chip—unscrew the holding screw or screws. (Usually a single screw holds the panel in place, though some laptops may use as many as eight.)

To remove an old RAM module, gently pull apart the metal clips securing each end. Once freed, it should pop up at an angle. Gently pull it straight out. Insert your new RAM in the same way, at an angle, until it is completely seated in the slot; then, again gently, press it down flat [photo 2, page 84]. The holding clips will engage automatically.

Replace the panel and battery, and boot up. Your computer should automatically recognize the change in RAM.

Hard Drive



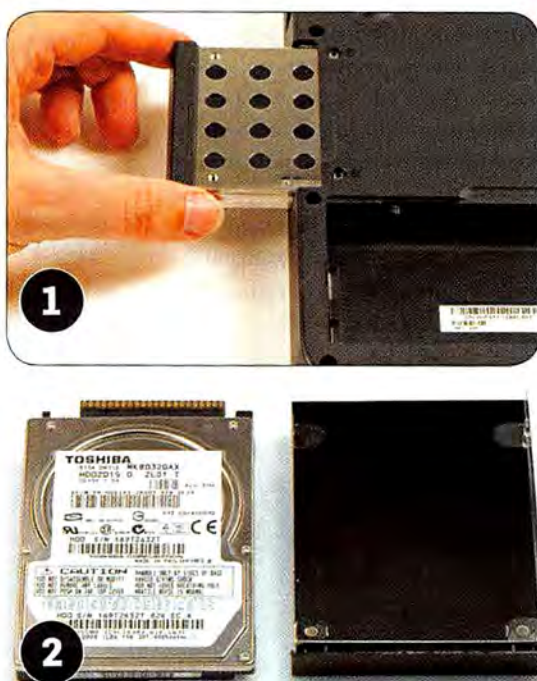
TIME: 60 minutes

Replacing a laptop's hard drive is almost always an uncomplicated affair, and the actual swap can be done in just a few minutes. Transferring the data from the old drive to the new one requires a little more planning, and typically takes an hour or so. This simple task is likely not only to give you more storage, but also to improve performance. We upgraded a 5400-rpm, 120GB drive to a 7200-rpm, 200GB model, raising the WorldBench 6 score from 57 to 61.

Hard drives are usually accessible via a side panel in your laptop and held in place by screws on the bottom. Remove those screws, and then slide the drive out of the machine [1, right]. The drive will most likely be attached to a sled [2, below]. Remove the screws that are holding the drive in the sled, and remove the drive. Put the new drive where the old one was, and replace all of the screws in reverse order.

If you are reinstalling

Windows from scratch, boot from your installation disc and go to town. On the other hand, if you want to reproduce your old data and programs exactly the way you had them before, consider using cloning software to make an exact copy of the old disk. We've had great success with Clonezilla (clonezilla.org), a free tool that is command-line only but is reasonably intuitive and very fast. Finally, clone your old (now external) drive to your new (now internal) drive, and boot normally. You're done. >>



Give Your Laptop New Life

up to you to install suitable 3G mapping software on your laptop, however. (For more information on features to look for and problems to avoid in GPS mapping software, see find.pcworld.com/61261.)

Carry Your Laptop in Style

Legions of laptop bags are available, but most of them are approximately as stylish as a burlap sack with handles. Ogio's Boss messenger bag (about \$140), however, lets you carry your notebook and all your accessories in impeccable style. The bag is equally good for commuters and for frequent travelers. A well-padded compartment keeps your laptop safely separated from other items in your bag; other padded and specially lined compartments provide niches for your MP3 player and media like CDs and DVDs. Var-

ious zipped compartments offer storage room for files and folders, and inside pockets give you lots of room for stowing PDAs, power cords, mice, and anything else you might need on your travels.

Watch Live TV From Anywhere

Don't be a slave to the endlessly looping CNN feed on the solitary TV in the airport departure lounge. Instead, get whatever TV programming you want by tuning in to your cable box at home via a Sling Media Slingbox (see find.pcworld.com/61262). The Slingbox attaches to both your cable box and your home broadband connection, and intercepts whatever's coming through the cable box and "slings" it to your computer, wherever you might be. Controls integrated into the custom Slingbox application you install on your >>

Bluetooth

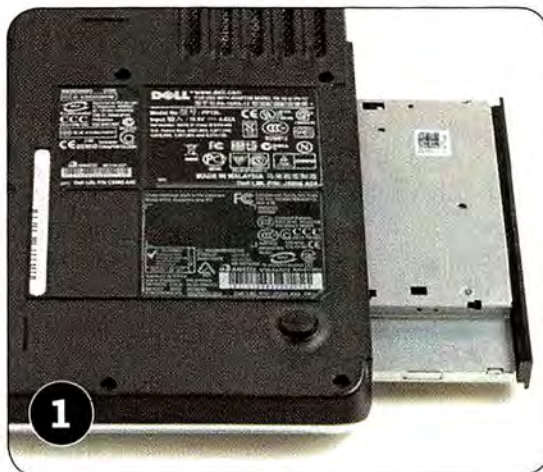
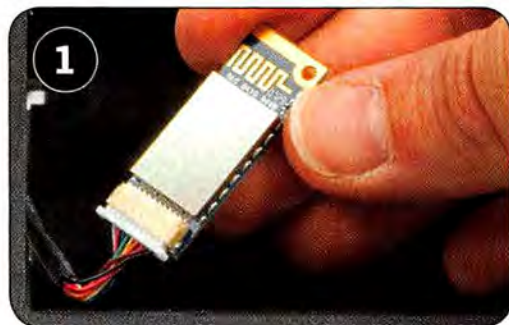


TIME: 10 minutes

Many laptops come with the wiring and circuitry to support a Bluetooth card already built in, even if they don't have the card itself installed. To avoid possible compatibility problems, however, you should obtain the Bluetooth module directly from your laptop vendor.

On our Dell Inspiron E1505 laptop, we found the Bluetooth connector behind an odd little door in the battery bay. We merely popped open the door, pulled out the wires, and attached the Bluetooth module to it [1, below]. On some machines, the module is located near the wireless card slot; on others, it's situated under the keyboard.

Reboot, and then download and install the appropriate driver from your laptop vendor's Web site.



have a modular drive bay, replacement usually remains fairly simple, anyway: Often a single locking screw holds the drive in place; you just unscrew it, slide the old drive out, put in the new drive, and replace the screw. In addition, you may need to install any drivers that came with the new drive.

A replacement drive

should be designed for use with your specific notebook, so buy one directly from the system's original manufacturer if possible. The advantages? For one thing, this ensures that you'll have the correct IDE channel settings (which often cannot be changed) for the drive; for another, attaching the faceplate to the drive can be difficult, and it's easy to break the faceplate when removing the original drive. Vendors put the eject button in different places, too, meaning that with the wrong drive you won't be able to use the faceplate at all.

In many instances a new optical drive will work without additional tweaking. If yours doesn't work, however, download the appropriate driver; you may have to search on the full model number of the part if you didn't obtain the drive from your notebook's vendor.

Optical Drive



TIME: 5 to 20 minutes

Would you like to graduate from an older CD-ROM drive to a DVD burner, or possibly even to a high-def drive? If your laptop has a modular optical drive bay (one that is equipped with an ejector switch of some kind), replacing your optical drive is easy. Buy a replacement drive, or salvage one from a compatible machine. With the laptop turned off, eject the old drive and then install the new one [1, top].

If your laptop does not

laptop let you change channels on your cable box back home. Plug in a TiVo or a DVD player, and you can watch video from those sources as well (physically changing DVDs, however, is beyond the powers of the humble Slingbox). The bright red, \$230 Slingbox Pro is the top of the line; its component connections let you hook up even a Blu-ray box (though the device downconverts high-def footage).

Don't want to mess with your home audio/video setup?

Consider a USB TV tuner such as the Hauppauge WinTV-HVR 950 (\$99; find.pcworld.com/61297). Just plug it into your USB port, and you can watch TV in Windows Media Center, either over the air with an antenna or through a standard coaxial

cable connection. Warning: Reception quality via antenna can be highly variable, depending on your location and antenna placement.

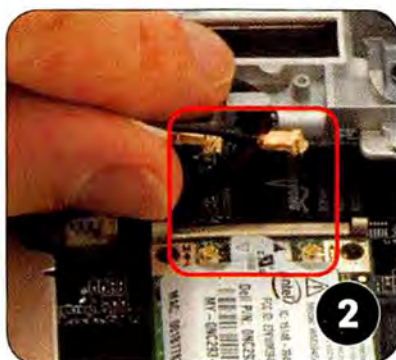
Gain Access Anywhere to Your PC

Microsoft Windows has had built-in remote access tools since XP, but getting them to work over the Internet can drive even the most patient user to the brink of despair. A far simpler and arguably more useful option is LogMeIn (logmein.com), a Web service that lets you connect to any of your PCs back home when you're on the road. Since it works via the Web, you don't even need to have your laptop—you can use any computer to control your home PC remotely.

Though the LogMeIn Pro service will



SLING MEDIA'S SLINGBOX Pro
slings cable TV to your laptop.



Wireless Card

Easy

TIME: 15 minutes

Upgrading a wireless card is usually about as easy as upgrading RAM. In fact, on some machines, both the Wi-Fi card and the RAM are located under the same panel.

The trick is to make sure that you install a compatible part. Most laptops that were made a few years ago use Mini PCI cards, while newer ones use the Mini PCI Express standard. The latter type of cards have two separated sets of connectors along the narrower side; Mini PCI cards have only one set.

Even if the card you get has the right connector, it may not automatically work in your laptop: It's unlikely that you can upgrade your old 802.11b card to an 802.11n one (since few 802.11n Mini PCI cards have been made), but

it's very likely that you'll be able to find an 802.11a/b/g card that works. Also, many systems that shipped with 802.11g cards can be upgraded to meet the latest 802.11n standard. To avoid firmware incompatibilities, we advise you to get this part directly from the manufacturer of your laptop; in any case, it should be sold specifically for your computer.

Once you have the right part, the upgrade is a snap. If your wireless card is under the keyboard, as ours is, remove the keyboard (see the graphics card upgrade on page 88 for this step), locate

the card [1], and disconnect the two antenna wires (one white, one black) by pulling straight up on the connectors; don't pull on the wires themselves [2]. Remove the card by pulling apart the two holding clamps on the card's sides and then pulling the card straight out [3]. Insert the new card, and reattach the antennas by pushing the connectors straight down on the plugs.

If your wireless card is located on the underside of the machine, flip the notebook over, remove the appropriate panel, and follow the instructions above.

LCD Screen



TIME: 90 minutes

Want better screen resolution, or maybe a glossy display instead of a flat, matte one? Subbing in a new LCD panel for your old one is doable, but be warned: This up-

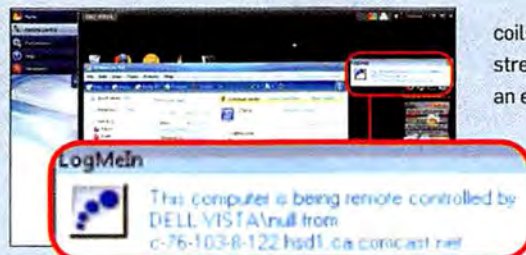
grade is one of the trickiest and most time-consuming notebook surgeries you can perform, with little guarantee that the new screen will work as it should. Still, if you do your homework in advance and select the right hardware for your machine, the payoff can be spectacular.

According to replacement LCD »

run you \$70 a year for the first PC, LogMeIn's free alternative does nearly as much. (The missing features mainly involve file sharing and remote printing—limitations you can easily bypass by e-mailing files to yourself and accessing them from a mail client on the remote PC.) LogMeIn works fine with Apple PCs, too.

Lock Down Your Gear

Kensington's ComboSaver Combination Portable Notebook Lock (\$25) is an excellent compromise between security and portability. You can take it anywhere without feeling as though you have a bowling ball in your bag. The lock's cable

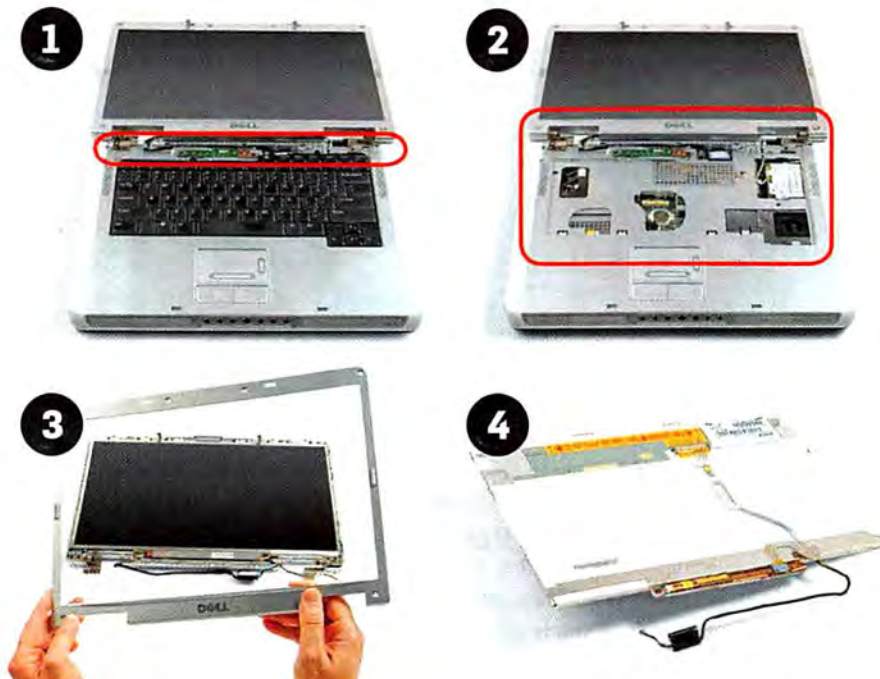


LOGMEIN KEEPS YOU linked to your data back home.

cable and stow the lock in the included travel pouch. Total weight: 0.5 pound. (See find.pcworld.com/61263 for more on laptop locks.)

Never Run Out of Juice

The AC adapter that came with your laptop is probably a fairly one-dimensional device. It can charge only one thing (your notebook), and it can obtain power from only one place (a wall outlet). A »



supplier ScreenTek (www.screenetekinc.com), upgrading a screen can, unfortunately, be a matter of trial and error. Whether a higher-resolution screen will work depends on many factors, including the laptop's video card, cable, and firmware. And of course, the new display must fit in the space available.

Before you purchase a replacement screen, it's a good idea to talk with a sales rep at ScreenTek or a similar LCD reseller to see what screens are available for your notebook.

To replace the LCD on our Dell E1505, we first had to remove the laptop's hinge cover [1] and keyboard, by removing screws from the bottom and rear of the

machine [2]; then we had to unplug the antenna and video cables from the motherboard. Those steps let us remove the LCD assembly from the laptop's main body. Taking off the small rubber bumpers on the front of the screen revealed screws beneath. We removed the screws and then pried the bezel away from the screen [3], giving us access to the bare LCD beneath [4]. We had to work slowly: It's easy to snap the plastic on the bezel during this part of the disassembly.

The LCD is held in place by brackets on each side. After removing the screws and unplugging the cables, we finally took out the bare LCD and replaced it with the new one. Then we simply re-

versed the disassembly process to put everything back together properly.

Prior to reassembly, plug the cables in and boot the machine up to ensure that it's working correctly. If you don't get a picture, check that the cables are properly seated, and try again. If it still doesn't work, your notebook may simply not support that display resolution.

Graphics Card



TIME: 45 minutes

Who doesn't want better graphics quality from their notebook PC? But if the upgrade is possible at all, replacing the graphics card on your laptop can be a time-consuming operation that involves disassembling virtually your entire notebook (much as replacing its CPU does; see page 92), so don't enter into this process unless you are definitely willing to accept the risk that you might destroy your machine in your quest for higher frame rates.

First question: Is your laptop's graphics card upgradable at all? This question can be surprisingly difficult to answer, but the best way to find out is to see whether the computer was ever sold >>

PHOTOGRAPHS: ROBERT CAROIN

couple of new products let you ditch your boring old brick in favor of something more flexible. For starters, check out Kensington's Wall/Auto/Air Notebook Power Adapter with USB Power Port (\$140), which comes with adapters that let you charge from outlet power, from your car's 12V adapter, or from airplane power ports; several included adapter tips work with most major laptops out of the box, and you can buy additional tip packages for other devices at prices between \$15 and \$20. As a bonus, a USB port lets you charge a phone or MP3 player directly from the brick. (See find.pcworld.com/61298.)

For extra power, check out Lenmar's Power Port PPU1619 Portable Charger (\$170 list; find.pcworld.com/61302). It looks like a standard power brick, but it's actually a beefy



external battery that can provide 2 to 4 hours of extra juice when plugged into your laptop's power jack. It recharges easily by daisy-chaining with your current AC adapter, so you can charge both your laptop battery and the Lenmar external cell simultaneously.

Tap Into the Sun

When all of the oil, gas, and coal finally run out, at least we'll still have the sun to power our gear. You can get started with solar-charging hardware today: Gadgets such as the Solio can

juice your iPod. And other products are trickling onto the market that make >>

VOLTAIC'S GENERATOR
solar-powered laptop bag.



56K USB MODEM
(USR5637)

Break glass in case of an emergency.

You never know when your Wi-Fi or broadband connection might be compromised. Just in case, it's good to have a USRobotics 56K USB Modem on hand. This small, easy to use controller-based modem integrates powerful communications processing functions into the modem itself, for assured performance without sapping your computer's processing power.

The USRobotics 56K USB Modem delivers the performance and reliability USR is known for, in a compact design.

- USB convenience and ease of use, with simple Plug and Play installation
- Hot-swappable (installs and uninstalls automatically)
- Bus-powered so it doesn't require an external power supply
- Excellent compatibility, works with Windows, Linux, and Macs
- USRobotics Modem on Hold application lets you screen incoming calls and take calls without dropping your connection — so there's no need for a second phone line
- Send and receive faxes through your computer, supports group faxing and timed faxing
- Quick Connect reduces the time it takes to establish your dial-up Internet connection and V.92 lets you send email up to 50% faster

Broadly compatible across major operating systems including Linux, Windows, and Macintosh, the USR 5637 USB Modem is perfect for:

- Home users with no broadband access and/or those who desire the additional security of dial-up Internet
- Business travelers with laptops and no internal modem for office access (when broadband isn't available)
- Laptop and desktop users that desire "back-up" access the Internet in case of broadband failure
- Home and business users that need fax capability to and from their computers

www.usr.com/PCW/56k

USRobotics®



with different graphics card options.

You might also wonder, why not just buy a generic part? The answer is that there is really no such thing. Many laptop graphics boards sport unusual connectors and come with thermal cooling assemblies already attached—and these can't be removed and reused. (Some newer machines, however, use a more standardized connector and don't require a permanently attached heat sink.) And because makers often customize the size and shape of the card for a particular model, you'll have no real alternatives for replacing the underlying graphics board, except in a few gaming notebooks that were designed with upgrades in mind. In most cases, you will have to replace the entire assembly.

Many laptops have come with several graphics options. With our Dell Inspiron E1505, we found that we could replace the old nVidia 7300 card with a more powerful ATI X1400 because the system was sold in both configurations. While no great find-all resource exists



for choosing the right video card for every notebook, MXM-Upgrade.com lists options for many of them; even so, googling "*your notebook model* video card" is likely to yield the best results.

If your laptop is like ours, disassembly should go something like this:

» Remove the hinge cover by prying up the plastic [1].

» Detach the keyboard by taking out the two screws beneath the hinge cover that secure it, lifting it off, and then unplugging the connector [2].

» Remove the display assembly by removing four screws on the bottom and back of the machine, and unplugging

the video and Wi-Fi antenna cables [3].

» Take out the optical drive.

» Remove the upper shell by taking 11 screws out of the bottom of the PC [4].

These steps gave us access to the video card assembly, which we removed by loosening two screws [5]. Then, after installing our new card, we reversed the procedure to put everything back together as before, and fired it up.

New card installed, the laptop gave us basic video with standard VGA drivers, which kicked in automatically. After we downloaded the proper video driver from the vendor's Web site, we enjoyed full resolution and color support. »

charging larger devices (like laptops) a possibility. One example is Voltaic's Generator laptop bag (find.pcworld.com/61264). Covering its side is a solar panel that generates, at maximum production, about 17 watts—enough to charge the bag's built-in battery, which in turn charges your laptop battery. Voltaic hopes to have it ready later this year, for \$599.

Find Your Way Back Home

Don't have an iPhone 3G or a snazzy navigation device mounted on your dash? You can still obtain GPS on the go by turning your laptop into a navigation tool. If your system has Bluetooth, check out the CoPilot Live 11 for Laptops (\$249) from ALK Technologies (find.pcworld.com/61299). The CoPilot Live needs no hardware installation; instead, a small GPS receiver sits on your dashboard and

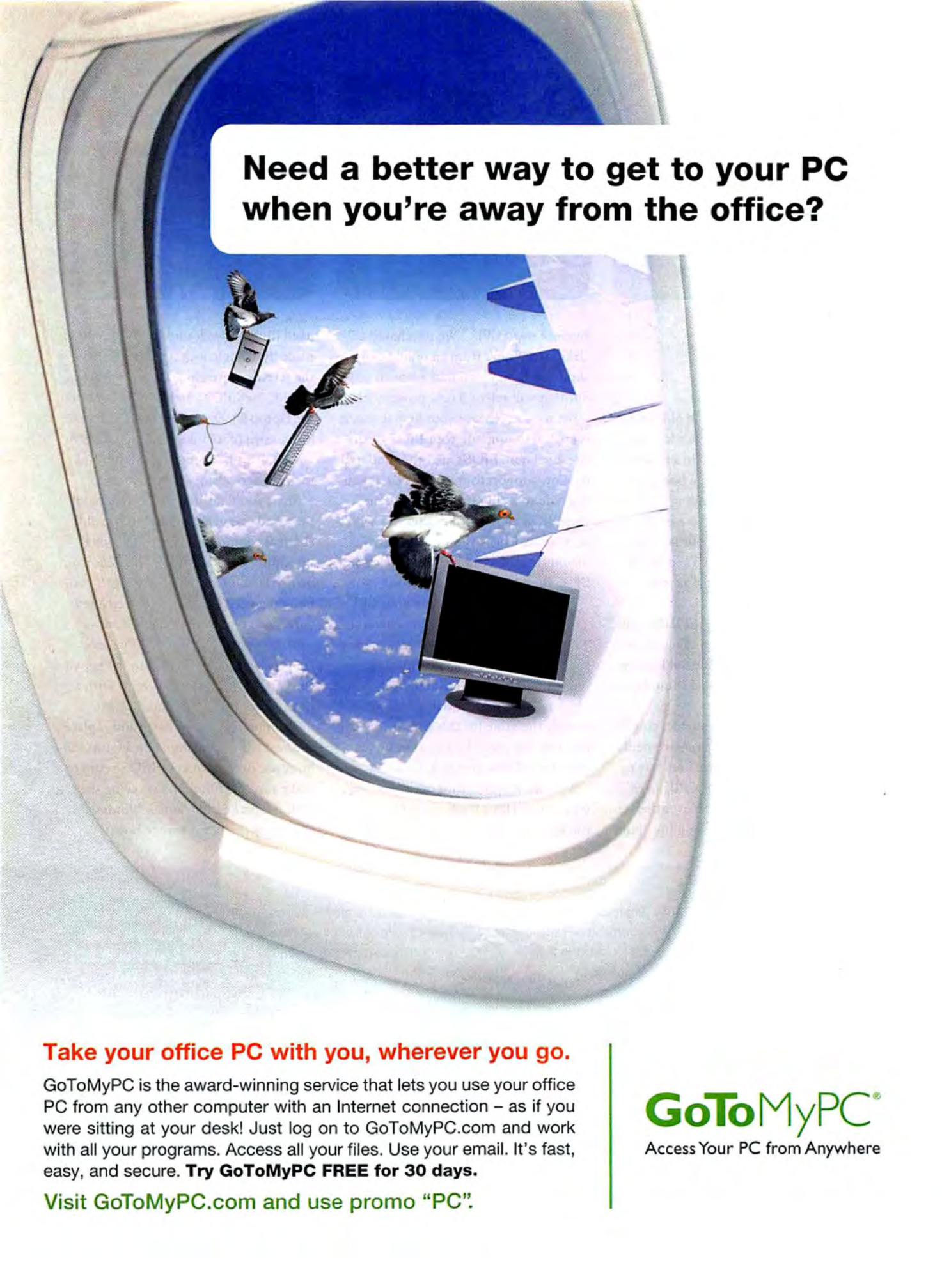
ALK TECHNOLOGIES'
CoPilot Live 11 for
Laptops.



relays GPS info via Bluetooth to your notebook. The package has maps for all of North America—7 million miles of road and 6 million points of interest—ready to load onto your laptop. As you drive, your vehicle's GPS position is plotted continuously on the maps. Oh, you don't have Bluetooth? A USB option is available for the same price.

Say Hi With Live Video

Many notebook PCs ship with integrated Webcams, but if your laptop doesn't have one built in, you can't upgrade it to include one. Solution: Add an external Webcam that clips to the top of your LCD. Logitech's QuickCam Pro for Notebooks (\$100; find.pcworld.com). »



**Need a better way to get to your PC
when you're away from the office?**

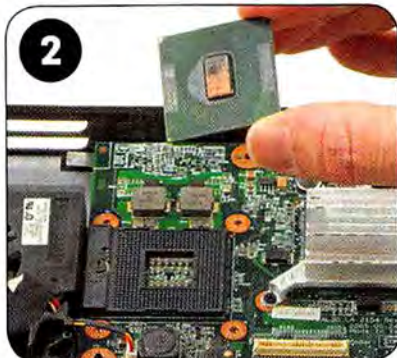
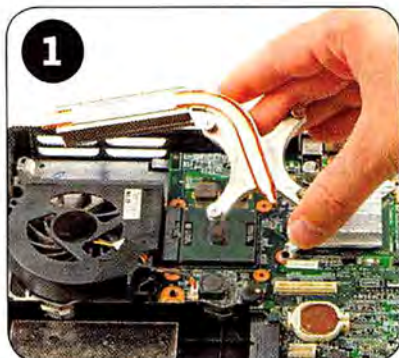
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CPU



TIME: 60 minutes

Saddled with an old, slow processor in your laptop?

Ripping it out and subbing in a new one can make for an exceptional boost in speed. For instance, upgrading from a 1.66-GHz Intel Core Duo to a 2-GHz Core 2 Duo T7200 raised our laptop's WorldBench 6 score from 57 to 68. But this upgrade isn't as simple as just dropping in a stick of RAM.

Make sure that you buy a CPU that will work with your portable. In fact, some laptops have nonreplaceable, soldered-in CPUs. (Your service manual should indicate whether this is the case.)

If the processor is upgradable, you'll need to find a compatible replacement. As with the video card, the best way to proceed is to look at what CPUs have been sold with your laptop over the course of its lifespan, by googling "*your*

notebook model CPU." We purchased a 2-GHz Intel T7200 from an online chop shop (we have yet to find a laptop vendor that will sell us a new processor).

Before you remove your first screw, it is critical to upgrade your BIOS to the latest version. BIOSs are often updated to allow support for newer CPUs. If you upgrade to a chip that's newer than your BIOS allows, your notebook won't boot at all. Check the support section of your manufacturer's Web site for any BIOS updates for your notebook.

The process for upgrading your CPU is almost identical to that for upgrading your graphics board. In the case of the Inspiron E1505, the CPU is located directly underneath the video card assembly, so disassembly instructions were exactly the same for this part as for that one (see the preceding section for an overview of that process).

With the graphics card out of the way, we removed four more screws to get the heat sink off and to expose the CPU

itself [1]. Here we found the CPU held in place by a single locking screw. Turn the screw counterclockwise until it stops, and lift the CPU straight up and out of the laptop [2]. Drop the new CPU in, but don't push (if it looks as though it needs a push, it's not aligned properly), and turn the screw clockwise to lock it.

Next, you'll need to get the heat sink prepared anew: Remove all of the old thermal compound (silver-gray gunk) by wiping the sink with 99 percent isopropyl alcohol and a lint-free rag. If you bought a used CPU, it may be covered with this goop, too, so clean it off as well. When it's dry, reapply a paper-thin layer of thermal paste to the top of the CPU [3], spreading it evenly with a business card or an old credit card.

Clean up any excess paste and replace the heat sink. Reassemble the laptop and boot up. Jump into your BIOS setup to make sure the notebook is seeing the CPU properly; then launch Windows and enjoy the performance boost! ●

PHOTOGRAPHS: ROBERT CARDIN

com/61300) is incredibly small, with a 2-megapixel sensor and an integrated microphone. It captures 30-frames-per-second video and comes with a desktop stand so you can keep the Webcam safely docked when it's not going mobile with you. Creative's Live Cam Optia AF (\$100; find.pcworld.com/61265) offers similar features, but is mounted on a unique 270-degree swivel attachment so you can pivot the lens to point at yourself or at whoever is sitting across the room.

Print Anywhere

Pentax's PocketJet 3 Plus (\$449; find.pcworld.com/61301) delivers 300-dots-per-inch resolution while weighing just over a pound with its internal battery in place. The PocketJet 3 Plus's thermal printing technology

may not generate the highest-quality printouts, but you won't have to carry ink or toner around with you. (You will have to pack some thermal paper, however.) The PocketJet is designed to work with USB, and a Bluetooth version is available for \$529.

If you don't need full-size printouts, check out Brother's Mprint MW-260, a 1.2-pound, battery-powered thermal printer that connects to your laptop via USB or Bluetooth and produces 300-dpi prints on half-size (4.1-inch by 5.8-inch) paper contained in internal cartridges. Just entering the market now, it should sell for about \$500. ●



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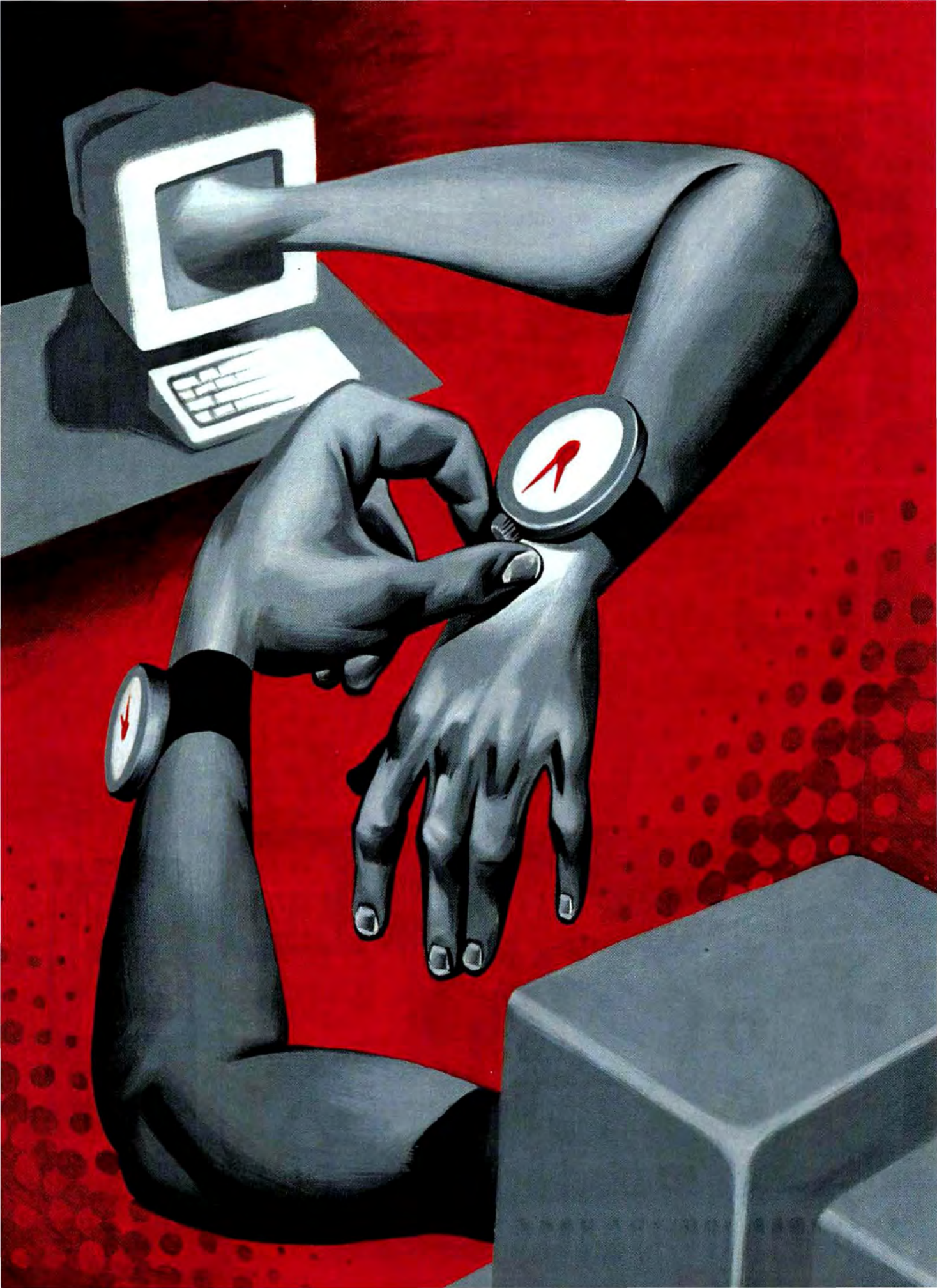


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Sure, you can use thumb drives or e-mail to shuttle files from work to home and back again, but inevitably you'll forget the one file you desperately need.

Stay in Sync

The solution: a new breed of affordable Web-based services that automatically keep your data accessible—and up-to-date—on multiple PCs, all the time.

BY SCOTT DUNN
ILLUSTRATION BY THOMAS FUCHS



THE DAYS OF THE SOLO employee toiling away on a single computer are long gone. Whether telecommuting from a home system, collaborating via a company laptop, or conferencing over a cell phone, people today use an array of devices in a variety of places to access and share the data they need, whenever they need it.

But ensuring that you have the most current versions of your files at hand when you need them hasn't always been easy; typically it involves making manual uploads to a shared server or sending multiple e-mail attachments. Fortunately, more-elegant alternatives are becoming available, as a new crop of services allow users to transfer files to other PCs and share them with friends or colleagues via the Internet—all the while keeping the data in sync no matter where it might reside. Some also offer remote-access features, so you can operate one PC from the desktop of another.

I put five services—Dropbox, Micro-

soft's Live Mesh, Phoenix Technologies' BeInSync Professional, Sharpcast's SugarSync, and Syncplify—through their paces. All of them allow you to keep your document files in sync with versions on other computers, and to store copies online. Most make it easy to share the files with other people; and two, Dropbox and Syncplify, permit you to store multiple file versions so you can recover earlier drafts.

Any of these offerings provide a real service for users who have to wrangle files on several computers, but Syncplify's feature set and ease of use made it my top pick. (Note that I was

not able to test all newcomers in this rapidly growing category: Memeo, for example, provides similar services in a more piecemeal manner.)

Though all have similar functionality, they differ in their implementation of certain features. For example, all inform you—even if only via a taskbar tool tip—when files are up-to-date or uploads are complete. But BeInSync and Live Mesh make you search for the extensive information they provide in a window or on a Web page; I prefer the way Dropbox and Syncplify simply put overlays (such as a green check mark) on the icons of all up-to-date files in your sync folders.

Most of these programs have a browser-based file manager so you can work with the online copies of your files from any computer. Unfortunately such efforts are generally disappointing, with minimal file tools and clumsy check-box selections.

In my tests, performance varied. SugarSync and Live Mesh proved to be speed

Sync Services Keep You Effortlessly Updated Everywhere

All provide easy access to up-to-date files on all your PCs; our favorite, Syncplify, handles conflicts well and includes versioning.

SERVICE	PCW Rating	Price and storage space	Remote access to linked PCs	Handling of version conflicts	File access via browser	Time required for initial 100MB sync (minutes) ¹	Comments
1 Syncplify www.syncplify.com	87 VERY GOOD	Free for up to 10,000 files/2GB and two PCs, \$10/month for unlimited files and 40GB storage; additional 50GB blocks available for \$10/month	No	Creates a duplicate with information added to file name	Yes	59	Has almost every feature you'd want in an easy-to-use interface, though initial sync is slow. It's pricey, too.
2 BeInSync www.beinsync.com	85 VERY GOOD	\$20/year for 5GB to \$100/year for 50GB	Yes	Alert only	No	37	A professional-level tool, but lack of online storage means you have access to files only on connected systems.
3 SugarSync www.sugarsync.com	84 VERY GOOD	\$2.50/month for 10GB, \$100/year for 60GB, \$25/month for 250GB	No	Creates a duplicate with information added to file name	Yes	13	Great for photography buffs who also need file syncing, but less practical for the serious business user.
4 Dropbox www.getdropbox.com	— BETA	1GB free; 2GB maximum during beta	No	Creates a duplicate with a number added to file name	Yes	55	Simple data sync and backup, but it forces you to do all sync management from one unmovable folder.
5 Live Mesh www.mesh.com	— BETA	Up to 5GB during free beta	Yes	Creates a duplicate	Yes	16	Microsoft has sacrificed usability to provide a pretty interface for this powerful but needlessly clumsy service.

FOOTNOTE: ¹Initial sync time stated was the author's experience, and may differ for others due to the variable nature of Internet performance.

demons in my upload test, with Syncplicity and Dropbox bringing up the rear. However, the speed (or the lack thereof) is really noticeable only the first time you sync or upload a large amount of data. After that, updates are all reasonably swift, so I did not weigh performance heavily in my ratings.

All of these products have some way of dealing with file conflicts—for example, when two people edit the same file remotely, producing different versions. Most of them store both copies in all synced locations but rename them, sometimes with information about the version (such as the author account or date of creation).

Dropbox and Live Mesh were in beta testing at the time of this writing, so prices were not available; consequently, I did not assign them ratings. The others charge monthly or annual fees that vary depending on how much storage capacity you need.

Syncplicity

As its name implies, Syncplicity requires very little maintenance, or even any interaction, once you've set the program to do what you want. The installer prompts you to synchronize the usual suspects (Documents, Pictures, Desktop, and so forth), but you can specify any files you want. When you do, it copies them to Syncplicity's servers.

When you install Syncplicity on a second computer or add new folders to the server, it will offer to sync (download) the files already on the server to the second machine. If you agree, you can tell it where to put the folder. If a folder by the same name already exists in your specified location, Syncplicity asks whether you wish to merge the two. If you don't, you can enter a dif-

ferent location. Sending sharing invitations to multiple colleagues can be time-consuming: For each recipient, you have to click 'Add Someone' and then type in their e-mail address; you can't enter multiple addresses.

Similar to Dropbox and SugarSync, Syncplicity lacks a remote-access feature; but given Windows' built-in networking and Remote Desktop tools, I

with Picnik, Scribd, and Zoho, so you can sync your photos with Facebook and your documents with Google Docs. Look under My Account on the Syncplicity site to set the features up.

Syncplicity's free account caps out at 10,000 files, 2GB of storage, and two PCs, with limits on numbers of file versions and how long they'll be kept. A basic paid (\$10-per-month) account re-

SYNCPPLICITY'S elegant interface makes choosing your sync options easy. Shown here is the main settings window.



don't see that as a serious omission.

Along with Dropbox, Syncplicity is the only product in this group with an explicit versioning feature that preserves different editions of your files as they are synced, added, and removed. You can access an older version of a file by right-clicking the file and examining a list of the versions Syncplicity has tracked since the original upload. The list includes buttons for downloading a version to your local computer or reverting to that version.

Syncplicity bills itself as a backup service, but its interface doesn't include any special backup commands: The online copy of your synced folders is your backup. Syncplicity's claim is perfectly fair, since it stores on its servers not only copies of past versions but also copies of deleted items. Syncplicity's free service will delete older document versions after 30 days, however.

In addition, Syncplicity offers integration with Facebook and Google Docs, and has announced partnerships

moves all limits except storage capacity, which tops out at 40GB with an option to purchase additional 50GB blocks at a cost of another \$10 a month each. With its breadth of features, ease of use, and added bonuses such as version control, Syncplicity is my top pick.

BeInSync

BeInSync does four particular tasks—synchronizing, sharing, providing remote data access, and backing up—and it does them very well. There's no confusing of these tasks, each of which appears as a giant button in the cleanly designed interface. If you opt for the smaller 'Launch BeInSync' button, you get a more sophisticated interface, but with the same four buttons at the top.

BeInSync handles file and folder syncing a little differently than other products in that its sync function does not actually store your files on its servers (for that feature, you'd use the back- ➤



WHAT DO YOU want to do today? BeInSync's hand-holding interface emphasizes its four main tasks.

access your stored files (download them, update them, and then upload) from any Web browser, without installing the service's software. SugarSync will update the matching files on your main

up button); it simply syncs files between computers that are online.

BeInSync is also the only application I tested that doesn't hand over both copies of a file in the event of a version conflict. An icon by the item in Explorer and in the BeInSync application alerts you to a conflict; but unless you are using BeInSync's remote-access feature, you won't be able to compare the versions without going to the other computers.

On the plus side, BeInSync has the best file-sharing features of any app I tested. Unlike the others, which make you type in the e-mail addresses of people you want to share files with, BeInSync lets you import and authorize all your Outlook, Outlook Express, and Windows Live Messenger contacts. SugarSync has a similar feature, but it lets you share only photos. Furthermore, in BeInSync you can give people read-only access (Viewer), full access (Participant), or full access plus account control (Administrator) rights; Live Mesh has options along the same lines.

One of BeInSync's most potent—and frightening—features is called Access. Simply by enabling this feature, and by keeping the installed version of BeInSync running, you make every drive, folder, and file on your entire computer available via a Web browser to anyone who has your BeInSync user name and password, and who is also running BeInSync. And you can't limit this control by using the Share feature exclusively, since sharing works only if the

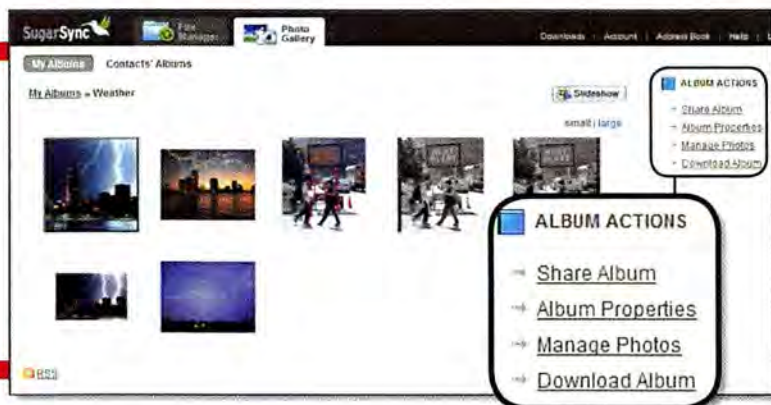
Access feature is enabled. This function strikes me as powerful to a degree that most security-minded users would find unnerving. It's undeniably convenient, though, and it's much easier to set up and use than a home network.

BeInSync's pricing is comparable to SugarSync's: An individual user paying \$100 for one year receives 50GB of online storage from BeInSync, but a little more (60GB) from SugarSync. With its multiple features and easy-to-use design, BeInSync is worth the extra money. But the inability to store backups on BeInSync servers, along with the service's poor attention to version

machine the next time that PC is on.

For more functionality (such as syncing multiple machines), you'll need to install the SugarSync Manager on each. You can use that utility for syncing chores, or just drag files to the Magic Briefcase folder that SugarSync adds to your Documents folder. SugarSync also allows you to access files from Windows Mobile and BlackBerry devices (see "Syncing for Cell Phones" on page 100). SugarSync lacks the remote-access capabilities of BeInSync and Live Mesh, but offers another feature called "lite sync." Rather than making full copies of a folder on multiple comput-

PRESTO! PHOTO albums and links for managing them appear when you click the Photo Gallery tab in SugarSync's online file manager.



conflicts, made me think twice. If the company addresses those areas, BeInSync could become an excellent business tool for managing your data.

SugarSync

Even if you have only one computer, you might want to keep a synced copy of your important files online—and the easy-to-use SugarSync is a good tool for the job. If you ever need to work on another computer temporarily, you can

ers, it keeps the synced folder only on the original computer and the SugarSync server but makes the folder accessible to other computers through the SugarSync Manager. This networking-like feature gives you access to your files without the duplication that can consume disk space.

SugarSync's file sharing is limited to photos. You can designate photos for sharing and even access address books for AOL, Gmail, Hotmail, and Yahoo to simplify sending invitations. SugarSync's photo emphasis is also evi-



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dent in the way its online file manager automatically arranges your online photos into albums and even permits you to choose between two thumbnail icon sizes to display them for viewing and minimal file management.

For users who want to store files online but not sync them to the originals, SugarSync offers some backup-specific features. Backups may be your only source for an older version of a file, since SugarSync lacks the versioning features of Dropbox and Syncplicity.

SugarSync may be a decent backup and sync tool for home users and photo enthusiasts. But its limited file-sharing and remote-access functions make it less desirable for business users who need to work collaboratively on multiple files.

Dropbox

Dropbox is another newcomer still in beta testing that has some welcome features despite its simplicity. Like other synchronizers, it requires that you download and install software; but unlike the others, it has almost no user interface. All it has is a tray icon that you click to see a pop-up window with one command for launching the Web site and another for opening an Explorer window to the Dropbox folder installed in your Documents folder.

The majority of your file syncing and sharing happens through the folder. You drag files and folders there to have Dropbox automatically upload them to the servers (beta testers get 2GB of free storage; in the future only 1GB will be free). You can also share files by transferring them to and from the Dropbox folder. If you upload a file that isn't in the Dropbox folder directly to the Dropbox site, a copy will appear—you guessed it—in your local Dropbox folder.

Although having a single place to drop your files for syncing can be convenient, Dropbox makes it mandatory, not an option like SugarSync's Magic Briefcase folder. Being required to keep all your shared, backed-up, and synced

Syncing for Cell Phones

SOMETIMES, BEING ABLE to synchronize data across desktops and laptops isn't enough: More and more people want to access their files, photos, music, and other content from their cell phone or other mobile device. The creators of Dropbox and Live Mesh are working on adding support for mobile devices, but SugarSync and Syncplicity already have mobile versions of their site. These mobile editions give you full access to the same online file manager and photo gallery you'd use in a desktop browser. Depending on your mobile device (Sugar Sync supports the BlackBerry, iPhone, and Windows Mobile, while Syncplicity supports the iPhone and iPod Touch only), you may not be able to download or edit the files, but you can send them to other people via e-mail.



FILES ON PHONES: With Quickaccess, you download different versions of your files for viewing and editing in Quickoffice.

If you require more-robust viewing, editing, and file-management abilities, however, you might soon have them in the form of Quickaccess from Quickoffice. As its name suggests, Quickaccess gives access to synced files from a remote PC on mobile devices.

With Quickaccess, you can download photos and music files for viewing or listen-

ing, and you can download document formats such as Adobe PDF, or Microsoft Word, Excel, or PowerPoint. Quickaccess (www.quickaccess.net) converts the files to the SVG format to produce good display resolution without consuming much memory.

If you need to edit the Office files, Quickaccess works in conjunction with Quickoffice (www.quickoffice.com) to let you open them, change them, and upload them to the server again for syncing back to your main computer. Quickaccess also offers options for managing files (copying, renaming, deleting) and for sharing them with or sending them to colleagues. If your main system is powered on, you can even search it from your mobile device. As with other syncing products, you'll need to install the desktop component on all the computers (Windows and/or Mac) you intend to sync.

Quickaccess debuted this year for the Symbian S60 platform; Quickoffice plans to roll out a Windows Mobile edition by the end of the year, with support for other mobile platforms to follow. Quickaccess costs a very modest \$20 per year for 10GB storage.

files in a single folder is an annoyance that Dropbox's makers promise to correct in a future version.

Despite that flaw, this extremely simple program offers some valuable features, including maintaining copies of deleted files in the Web interface (click *Show Deleted Files* to see them), and providing access to past versions of edited files.

As with every other program I tested,

sharing involves sending an invitation to collaborators—but Dropbox doesn't make inviting multiple people easy. Invitees are asked to install Dropbox, which causes the shared folder to be copied and synced with their Dropbox folder. If your invitees don't want to install the software, they can still access files through the online file manager as long as they log in and know the URL. >>



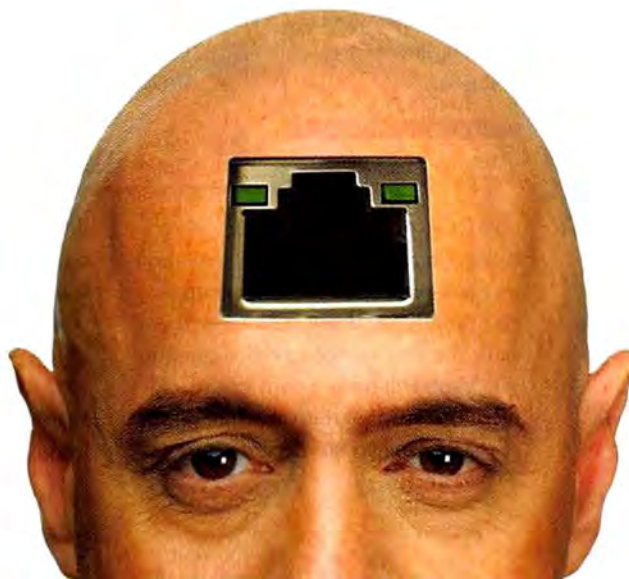
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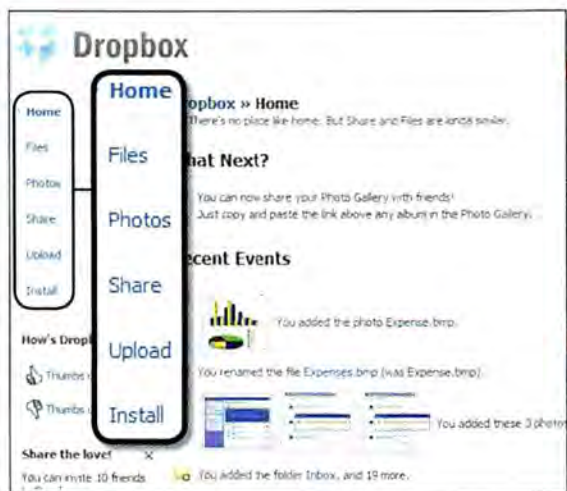
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LOOK, MOM, no interface!
Dropbox offers all its features via a taskbar pop-up menu, a Documents folder, and the navigation bar of its Web site.

Dropbox's online file tool is even more limited than that of other products. To see thumbnails, for example, you must drag pictures to the Photos folder within the Dropbox folder, since that's the only one that has a thumbnail view online.

The pricing for Dropbox is not set yet, but the cost is expected to vary with the amount of server space you require.

Live Mesh

Using Microsoft's Live Mesh service is like learning to drive a car: Once you have the hang of it, it seems pretty straightforward—but if you've never sat in front of a dashboard before, it can be a little confusing at first. The current preview version serves mainly to provide you with remote access to other computers, a method to synchronize data on those computers, and a way to share data with colleagues.

Unlike the hand-holding interface of BelnSync, the Mesh Web site starts you off with a screen showing existing devices (including the online file manager, Live Desktop) and a big '+' button for adding one. With a new device, you log in to the Mesh site and click the '+' button to download and install the Mesh software. Once you've set up all your computers, you can connect to any one of them and even control that system remotely via Windows Remote Desktop, a Windows XP and Vista feature that Live Mesh enhances. (You might also need to install an ActiveX control on the system you're using to

access another of your devices.) Unlike BelnSync, which provides access just to the data residing on other machines, the remote-desktop feature in Mesh lets you take complete control of a distant computer, although a slow Internet hookup will make the experience painful if not impossible.

If you don't require remote access, you can head over to the Live Desktop to do your syncing and sharing chores. You can easily synchronize any folder on a computer by right-clicking it and choosing *Add folder to your Live Mesh*. If you expand the dialog box, you can also identify which computers Mesh should copy the data to for syncing. In most cases you'll want at least one copy on the

ANOTHER FINE
Mesh: The online
file manager in Live
Mesh uses a desk-
top metaphor with a
pop-up information
sidebar.



Live Desktop Internet "cloud" (Microsoft's connected servers) so that you can access it even when your other computers are shut off. If you indicate that you want the data synced to other computers, Mesh will make a copy of the folder on the desktops of those machines (rather than asking you to decide where to

put it, as BelnSync and Syncplicity do).

Mesh assigns a blue icon to folders it manages, but (unlike Dropbox and Syncplicity) it provides no direct indication as to whether they are up-to-date. Mesh does give you other kinds of information via the "Mesh bar," a sidebar that it attaches to every open Mesh folder window. The sidebar lists who is using a shared folder and how many people it's shared with, as well as a report of recent activity, including alerts about version conflicts. For information on multiple folders, you can open a pop-up Notifier window by clicking the Mesh icon in Windows' taskbar tray.

Live Mesh's online file manager is the most sophisticated and Explorer-like of the ones in this group, but it doesn't yet support drag-and-drop from your own desktop, or even thumbnail views of files (available in most of the other products). You can see slide shows of media files if you install Microsoft's Silverlight browser plug-in, but that doesn't help you in selecting and working with just the photos you want.

Mesh doesn't have any specific backup features, but you can convert any server folder into a static backup by telling the program to stop keeping it in sync.

Though Mesh provides many ways to do its various tasks, few were intuitive in the beta I tested. It cries out for a good quick-start guide, but the closest you get for now is a video tour. I was frustrated by features that were hard to

discover, and glitz that seemed to slow down the work. The most distinctive feature, the remote-desktop capability, is already built into Windows, and unless Microsoft can come up with very attractive pricing (which at this writing hasn't been determined), I would opt for one of the other services I tested. ■



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The Best TV on the Web

BY MELISSA J. PERENSON
ILLUSTRATIONS BY HADLEY HOOPER

How do you find stuff that's worth watching? Here are our choices for must-stream TV.

WATCHING THE BOOB tube used to mean having to consume your entertainment in front of an actual television. But these days, if you miss an episode of *Grey's Anatomy* or *Heroes* and forgot to set the DVR, no problem: You can catch up online for free with streaming »



video supplied by the Hollywood networks and studios themselves.

Television entertainment has busted out of the TV and onto computer screens. Think of it as the rebirth of television, delivered via a new, interactive medium that gives viewers more choice over what they watch—and when, where, and how they watch it.

Many of today's video experiences more closely approximate the TV experience than the networks' PC-centric, postage-stamp-size efforts of yore. Most sites employ adaptive streaming techniques to adjust video bit rate and resolution in the background.

The new programming is also more interactive, with greater viewer control over the player (including options such as 720p HD, full-screen, a mini-player screen, pop-up trivia, or audio tracks) and with social networking capabilities such as forum discussions, hooks into social networking sites, and the option to embed episodes or clips into pages.

The peculiarities of online distribution or syndication deals mean that you can find multiple sites that offer the same content. And many of those sites send you to a third-party site that hosts the video itself. The end result: more links than you'll see at a sausage factory. Even when content offerings appear identical, the viewing experience depends largely on where you get your video.

The sites we considered fall into three categories: aggregators, portals, and networks (we examined the Big Four networks, not individual cable networks; and we skipped pay-to-download TV options as well).

Regrettably, the Net has no single stop where you can find everything you want without being redirected somewhere else. Though I don't plan to ditch my DVD and Blu-ray collections anytime soon, I found that the Web serves as a versatile complement to my television viewing. I enjoyed the convenience of the Web—as well as the opportunity to rediscover old favorites.

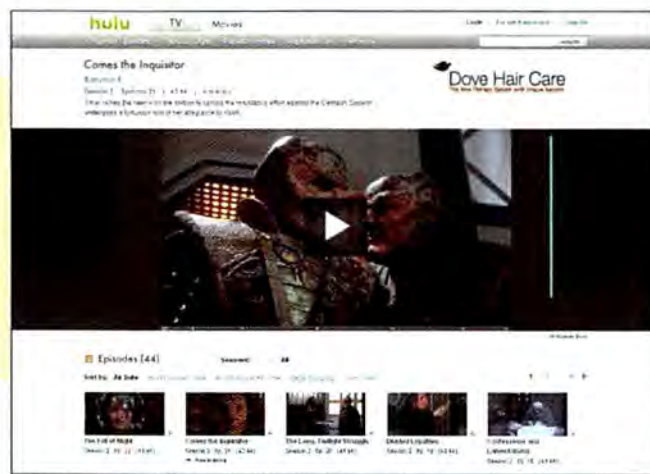


The Aggregators

Aggregator sites showcase streaming television, drawing their content from multiple sources. Typically, aggregator sites focus on building a comprehensive entertainment experience.

Hulu (www.hulu.com)—ranked by *PC World* staff as the number one product of 2008 (see “The 100 Best Products of 2008,” find.pcworld.com/61269)—remains the gold standard among aggregator sites for finding and viewing free television programming on the Web.

HULU'S CLEAN interface makes viewing online TV a pleasure. And thumbnails make selecting additional episodes easy.



Hulu makes locating and watching high-quality video extremely easy, and it has one of the best collections of current content and reruns around (its growing catalog numbers 3000-plus TV episodes). Only ABC and CBS content is missing here; and to counter that deficiency, Hulu indexes video content from other sites, so you can find epi-

sodes of *How I Met Your Mother*, *Lost*, or *Star Trek* with a click of an external link on Hulu.

Browse through shows by genre, title, or network; or plug a title or actor into the search engine. A TV icon will appear next to each entry that has full episodes available.

The video player, which dominates the Hulu interface, makes Hulu feel closer to a true television experience, especially in full-screen video mode. The player is neatly organized, with none of the clutter that clogs countless other sites. Run your mouse over the video player, and various controls become visible to the sides and at the bottom of the video screen.

Fancast (www.fancast.com), from cable giant Comcast, debuted earlier this year. It admirably combines a barge-load of information about television shows with an enjoyable online video experience. Fancast, still in beta, seems dedicated to broadening on-demand video and helping site visitors find the shows

they want, whether on the Web or delivered through a TV (over Comcast's cable-box-based on-demand service or via a cable channel).

Though the full-episode playback experience was pleasant—Fancast's layout and visual design make it fairly simple to navigate—finding full episodes of shows could be easier. The site has so

much going on, with multiple paths to the same endpoints, and some of those paths are clearer than others.

Here, too, the browser-based player is central to the default presentation. Unfortunately, video (even Hulu video)

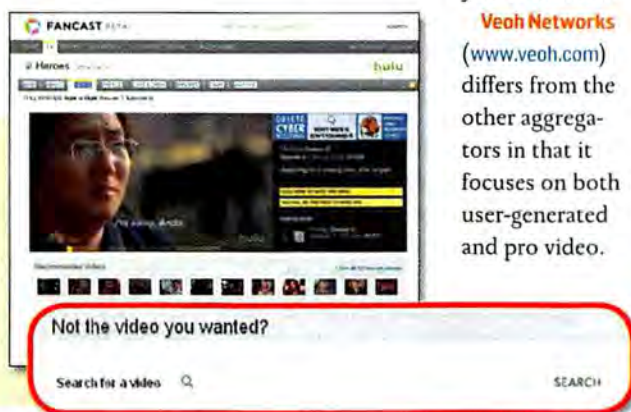
video to full screen or minimize your browser window—a minor irritation. A more serious annoyance is TV Guide's distractingly busy interface, which impedes your efforts to find what you're looking for and to enjoy the video once you've found it.

Veoh Networks

(www.veoh.com)

differs from the other aggregators in that it focuses on both user-generated and pro video.

FANCAST, like Hulu, provides a clean user interface; find your next video with the handy search bar.



looked unduly pixelated at full-screen resolution. Many of the episodes come from Comcast's distribution deal with Hulu; others, from Comcast's separate deals with ABC and CBS. The video dimensions and resolutions vary from one provider to another.

One noteworthy, unique Fancast convenience: You can resume where you left off. And coming soon is a store for buying digital content for download.

TV Guide (www.tvguide.com), not satisfied with its status as king of the programming grid, now offers a compelling Online Video Guide. TV Guide's new owner, Macrovision, aims to expand the role of video on the site.

TV Guide lets you browse videos based on top shows, top celebrities, genres, or networks. Its comprehensive video search integrates everything from the paid world of Amazon Unbox, CinemaNow, and iTunes to the free streaming world of CBS and Hulu. The advanced search allows you to narrow searches to only free or only paid videos, as well as to only full episodes or only clips. Video offerings from Hulu and other sources appear within TV Guide's own pop-up player, which launches on top of the browser screen; you must then choose to enlarge the

The site has worked out distribution deals with ABC, CBS, ESPN (for short-form content), Hulu, NCAA Football, Viacom, and Warner Brothers, making it one of the more comprehensive sites.

The in-browser player is large and changes from 4:3 aspect ratio to wide screen, depending on the video. The page is better designed than most—not overwhelmingly busy despite being filled with links to content related to a

Joost (www.joost.com) was one of the earliest aggregators, and today the site boasts roughly 28,000 TV shows and more than 480 channels. Many of those shows and channels aren't top-of-the-charts programming, and most are not long-form content (the equivalent of a 30-minute or 1-hour TV episode).

Now in beta 1.7, Joost remains in transition. The company had to shut down its discussion forums (which were linked to content) because it is developing a Web-browser-based version of the software. Before watching any content, you have to install the Joost player—which can be annoying.

Because Joost runs in the background and uses peer-to-peer networking to facilitate downloads, you can exhaust your available bandwidth quickly (see "The Gear You Need to Watch TV on the Web" on page 112).

Channels are sorted by show, network, or production company (for example, *Beverly Hills, 90210*, Comedy Central, or Warner Brothers). The channels mix up full episodes and short clips—annoying if you're looking for one over the other. The site is graphical, but not very easy to browse.

MySpace TV (vids.myspace.com) feels more like McTV, rife with snippets and



VEOH'S HECTIC screen reflects both the diversity of the service's offerings and its active ties into online community.

given episode. Video from ABC will work only in the ABC player (Veoh launches the player in a separate window). Interestingly, though CBS content plays in-browser here, *Star Trek* episodes wouldn't properly display full-screen as they do at CBS's site.

small doses of content rather than full TV episodes. Hulu supplies the full episodes, with language on the site skewed toward the teen set. MySpace deserves notice for publishing some original short-form content; but beyond that, it has nothing you can't get elsewhere. >>



The Portals

In their role as gateways to the Web, AOL, MSN, and Yahoo offer visitors a vast array of content. Full-episode TV video is but a small component of their empires, and all three lean heavily on repackaging Hulu's content.

MSN Video has deals with CBS, Hulu, and others for full-episode TV. But the experience is nothing like watching video on CBS.com or Hulu.com: The

interface is much busier, and the video quality is inferior to what you get when you go directly to those sites proper.

Click on the TV tab at MSN's Video Guide (videoguide.msn.com), and you'll jump to a page dedicated to all things television, including listings and coverage of what's new on TV. The site's Watch Full

Episodes module is the most expeditious and friendly way to find full episodes of shows; alternatively you can choose Browse TV Shows on the menu up top, and then select 'Shows with Free Episodes'. But finding episodes may require ten clicks or more. For example, with a show like *Remington Steele*, which ran for five seasons, you click the name of the show, then click on Episodes, and then click through to at least page 6 of 7 to see which episodes are viewable (all of the show's episodes are listed, in inverse order,

newer ones first; but only the first two seasons are available online—hence the lengthy and annoying search process).

AOL (television.aol.com/video) has put together a far more manageable structure for full-episode TV than MSN's. Here, the videos are presented by episode titles, top shows, most recent, most viewed, and highest rated. The entry page has a lot of components, but it's neither confusing nor intimidating. AOL has partnered with ABC, CBS, and Hulu. Some content, such as the soap opera *The Edge of Night*, comes within a separate experience, AOL Television's In2TV (television.aol.com/in2tv).

CBS videos play in-line within AOL's browser. Nevertheless, the experience at AOL can be frustrating. For example, I clicked on *How I Met Your Mother*, and received 11 results—with no designation of which of them were simply clips, and which were full episodes.

Unfortunately, some of the options appeared to be duplicates (to judge >>

Sports Frenzy: More Than the Score Online

THE OLYMPICS ARE in full swing in August, and NBCOlympics.com has blanketed the Internet with streaming and on-demand coverage (for details, see "Summer Olympics Stream to a PC Near You," find.pcworld.com/61271). But the Olympics aren't the only sporting events getting the gold treatment these days—you can find in-depth coverage of virtually any sport you can imagine (well, maybe not buzkashi) online.

Sports-centric sites often charge a fee (typically a subscription fee) and target true enthusiasts of the sport. CBS College Sports

XXL, Major League Baseball, the NBA, and NHL's Center Ice Online all charge a subscription fee for access to games and other content (CBS College Sports XXL even covers press conferences).

Sports such as beach volleyball, gymnastics, rowing, swimming, and track and field receive generous attention at subscription-based UniversalSports.com (in transition from its previous branding as WCSN.com, which launched as a streaming-video network three years ago). NBC Universal recently purchased a controlling stake in the World Championship Sports Network, and content from the site will run on the Universal Sports cable network.

Many sites provide some type of short-form content for free

on their site, or distribute their content elsewhere. For example, the NHL offers video of its hockey games for free via Hulu and Joost, and for pay through Amazon Unbox and Apple iTunes. NFL.com has clips and highlights, plus wrap-up shows.

One of the most limited sports options online is ESPN360.com. Though the site delivers full coverage of such events as cricket, rugby, soccer, and Wimbledon tennis, it works only with AT&T Yahoo and Verizon broadband.

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from the episode names), and none of them actually worked. One of the clips that I picked was no longer available, and the AOL page simply referred me to CBS's own site. And because the thumbnails were identical, I found it impossible to identify an episode visually. Talk about a waste of clicks. (In AOL's defense, I later had a similar experience with expired CBS content at other sites; still, AOL's layout makes the extra clicks all the more annoying.)

Babylon 5 was here, but it was part of AOL Television's In2TV, not an import from Hulu. Many other Warner Brothers shows appear on In2TV (Time Warner is the corporate parent to both), including numerous programs, such as *The Adventures of Brisco County Jr.*,

AOL PLAYS UP the fact that you can get full episodes from all four major networks through its site.



that I didn't come across anywhere else.

Yahoo (tv.yahoo.com/tv-shows-online) delivers full episodes, too (from Hulu, as well), but the experience remains rudimentary at best. The player occupies more of the page than do the players on AOL or MSN; and like other Hulu syndication sites, it carries Hulu video at a lower-than-Hulu resolution.

But at least Yahoo has a wide-screen player; AOL and MSN have only a 4:3-aspect-ratio player, so shows that were filmed in 16:9 format, such as *30 Rock*, end up displaying in letterbox format.



The Networks

In the past year the Big Four broadcast networks have taken aggressive steps to make their content available online. A Nielsen Company study released in June reported that 87 percent of survey participants who watched a TV program online did so on a TV network's site; 82 percent of those users sought out a show they missed on TV. Typically, at least 80 percent of each network's

prime-time broadcast schedule goes online.

All of the networks are using a two-pronged approach to distribute content online. They're beefing up the offerings on their own Web sites, and they're also setting up distribution deals with other sites so their video reaches audiences throughout the Web.

Fox and NBC, for example, cofounded Hulu. Both networks now mirror the content that they make available on their own sites with what they offer on Hulu. ABC and CBS have brokered deals with multiple sites. In ABC's case, viewers must watch the episode within ABC's player.

ABC (www.abc.com) was the first network to stream high-definition video: Select episodes, including all four seasons of *Lost*, are available in 720p high definition. The image quality falls far short of what you'd get on Blu-ray Disc, but it's still impressive—assuming that

you have the hardware and bandwidth to handle playback (see "The Gear You Need to Watch TV on the Web" on page 112).

The ABC experience requires you to download a player, which launches in its own pop-up window. The site's design makes finding complete episodes easy, though ABC's home page is way too busy. Regrettably, video clips are commingled with full episodes.

My biggest gripe, though, was that I had to click manually to continue playing the show after a commercial was over—in case I wanted to stare at the end screen of an ad indefinitely, I guess. At least the advertisements give you a countdown of how much time remains before the show will resume.

CBS (www.cbs.com) has shot to the fore in HD streaming, with a slew of 720p episodes now available in its HD Gallery. (*Star Trek Remastered* looked great, but the video playback was not smooth at full-screen.) The network also maintains a collection of full episodes of both current and classic series—even series that you may not associate with the CBS television network but that CBS now owns (cult and quasi-cult favorites such as *Beverly Hills 90210*, *The Love Boat*, *MacGyver*, the original *Star Trek*, *The Twilight Zone*, and *Twin Peaks*).

The centrally positioned video player runs inside the browser, dominating the screen (it's bigger than the player on Veoh), but it has limited controls compared with the players at other networks and Hulu. The player uses a 4:3 aspect ratio; episodes captured in wide-screen format display letterboxed.

The various episodes are accessible via a video tab or through the home screen for each show. The latter approach makes sense for current programming: The video becomes part of the network's online treatment of that show (along with community, blogs, episode recaps, and cast information). Many videos permit you to share and embed content, with direct hooks into Facebook and Google Bookmarks. >>

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Fox (www.fox.com) makes finding full episodes really easy for site visitors: The network prominently displays its Fox on Demand option at the top of the home page, and the site contributes to simple navigation with a clean, attractive, and uncluttered design.

Among the Fox player's niceties is a nifty episode-sharing feature (as with NBC's player, you can share a full episode or a clip from a specific time code). Thumbnails, episode numbers, and titles for other available episodes appear at the bottom of the player screen; you can browse through them by scrolling from left to right.

Both the in-browser and full-screen video at this site provided acceptable quality in my trials. Fox also fosters its own community by allowing users to rate and review shows.

NBC (www.nbc.com) aggressively pushes full-episode video on demand, via its NBC Video Rewind service.

NBC'S VIDEO
Rewind service has playback controls surrounding the player; but if you like, you can choose to hide those side panels.



Though NBC's busy home page makes video its centerpiece, the site's design gives you too many ways of getting to the same place. Also, when I visited the site, the Shows tab accurately identified which series had episodes for viewing, but the Watch Video tab did not. Episodes display in a row beneath the player, with thumbnails and episode descriptions that elegantly pop up as you mouse over them.

The video files play inside the browser, with extra features and download

options visible briefly before they tuck away; the dark screen that surrounds the player thereafter makes for very pleasant viewing. (Detracting from that experience: An extremely annoying flashing banner ad ran below the player during one *Heroes* episode.)

The episodes that I tried had closed captioning (pop-up text that ran to the right of the player in normal or large mode, or on top of the player in full-screen mode). *Heroes* had "Quick Bits" interactive pop-up trivia, too. ●

The Gear You Need to Watch TV on the Web

HIGH-QUALITY VIDEO IS a major bandwidth hog. If you plan to stream television programming over the Web, the bottleneck of greatest concern to you will be the downstream bandwidth you get from your ISP, not your system's limitations.

Most streaming-video sites call for a minimum broadband connection speed of about 800 kbps. You might get away with a little less (if you're in the vicinity of 700 kbps), but your experience will vary.

At the upper end of the range is ABC's player: To watch *Lost* in high definition, you'll need a dual-core processor (AMD or Intel), 128MB of video mem-

ory, 1GB of RAM, a monitor with at least 1300 by 770 resolution, and a beefy broadband connection of 2 mbps or more.

Keep an eye on your ISP's bandwidth allowances. In an era when ISPs are intent on limiting bandwidth usage (see page 41), the quantity of data involved in regularly streaming video can add up fast, especially if you already use your connection for other bandwidth-intensive activities. At Hulu, for example, 1 hour of video translates to about 200MB of data at 700 kbps, the default stream's bit rate.

The bandwidth issue becomes more critical when you're dealing with sites (such as Joost) that rely on peer-to-peer networking to distribute content. With those sites, you could be serving up video in the background and not even realize that your PC is engaged in sending video out.

You can help make your online streaming-video experience feel more like a TV experience with a large, wide-screen LCD monitor. Two standouts that we've tested in the past few months are the Dell UltraSharp 2408WFP and the HP w2007. (See find.pcworld.com/61289 for our most recent monitor reviews.)



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Here's How

Soup Up Your Browser With Greasemonkey

Add cool features to Gmail, streamline your Web searches, and work more quickly, with the Greasemonkey add-on and these must-have scripts.

BY ADAM PASH

THE INTERNET offers a wealth of tools, information, and entertainment—and it asks very little from us in return. So don't lose your cool when a poorly designed online tool or site gets on your nerves; instead, use Greasemonkey (find.pcworld.com/61166), a free Firefox add-on that harnesses the power of JavaScript to right usability wrongs and to enhance the functionality of specific Web sites and of the Internet at large.

Greasemonkey can improve just about anything it touches—whether by adding must-have features to Gmail, organizing your social life in Facebook, or speeding up your blog posts. The best

part? Thousands of Greasemonkey scripts are free to download, and installing these scripts is as simple as clicking a single link.

Even though Greasemonkey scripts are written primarily for use in Firefox with the Greasemonkey extension, many of them also work in Internet Explorer via IE7Pro (find.pcworld.com/61163) or Trixie (find.pcworld.com/61165), as well as in Safari with GreaseKit (find.pcworld.com/61167) and in Opera (which includes built-in support for the scripts). After installing the appropriate add-on for your browser, you'll be ready to see your Web experience improve.

Inline Google MP3 Player

When you stumble upon a link to a music file on a Web page, the dance is generally the same: You download the file and listen to it with your desktop music player, or you click on the link and listen to it in your browser with its default player plug-in. Either



GREASED LIGHTBOX LETS you transform pages of images from a Web search or photo site into easy-to-navigate, inline photo galleries.

approach disrupts your browsing experience.

But the Inline Google MP3 Player script (find.pcworld.com/61169) gets you back in the flow, automatically detecting linked MP3s and embedding Google's Flash player on the page so you can play the file right away, without downloading it.

Videoembed

Since video sites such as YouTube don't offer much useful content beyond the actual video (that's right, I'm disparaging YouTube comments en masse), there's no point in going to YouTube to watch a video when you can see it in the page that you're currently visiting.

That's the idea behind Videoembed (find.pcworld.com/61170), a script that automatically embeds videos from YouTube, Google Video, Metacafe, and other such sites whenever the site you're on links to a video

without embedding it. Now instead of clicking through to YouTube, you can watch the video directly on the site where the link appears.

Greased Lightbox

You know the drill: You're performing a Google image search, but rather than give you direct access to the pictures, Google makes you click a couple of links to reach the full-size image.

The Greased Lightbox script (find.pcworld.com/61171) turns your Google Image search results—along with gallery pages on sites such as Facebook, Flickr, and MySpace—into Ajax-driven galleries that you can navigate from your keyboard. It's fast and attractive.

NoDelay

Anyone who has downloaded files from sharing services such as Megaupload or RapidShare has undoubtedly run into download landing pages

The Music Tapes **Majesty** [Hide Player]
From Still No Neutral Milk Hotel Reunion, But The Music Tapes Are Back With New Album, Video, Live Show

Gregor Samsa **Jeroen Van Aken** [Play]
Abutting Dismantling [Play]
From New Gregor Samsa - "Jeroen Van Aken" & "Abutting, Dismantling"

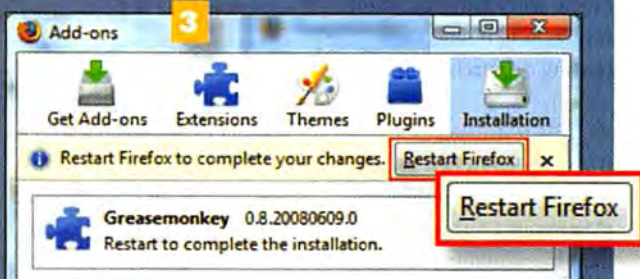
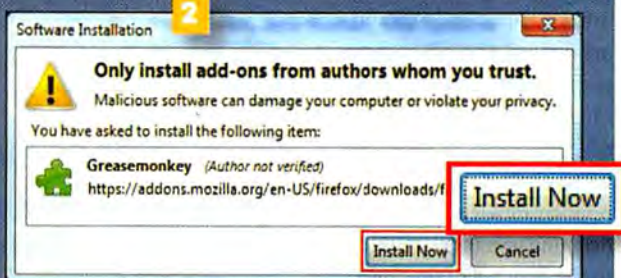
INLINE GOOGLE MP3 Player streams any linked MP3 file, without forcing you to leave the page or start a separate player.



Install Greasemonkey and Its Scripts for Your Firefox Browser

GETTING STARTED WITH Greasemonkey takes less than 5 minutes, and the payoff will be years of better Web surfing. Here's how to install the Greasemonkey add-on in Firefox and activate your first Greasemonkey script.

1. To get started, download the Greasemonkey Firefox add-on available at find.pcworld.com/61128, and begin installing it by clicking the *Add to Firefox* button on the Greasemonkey page.
2. In the resulting Software Installation dialog box, click *Install Now*. Don't worry about the warning.
3. Installation should take less than a minute. After it is complete, click *Restart Firefox* when prompted to do so.
4. Once Firefox restarts, browse to any of the scripts listed in this article, or visit Greasemonkey.net and click *Find Scripts* to dis-



cover hundreds more. When you find one you like, click *Install this script* to install it in Firefox automatically.

5. The Greasemonkey Installation dialog box will launch. Once the dialog box's *Install* button goes from grayed out to solid, click it to complete the script installation. Your script will then be available for immediate use.

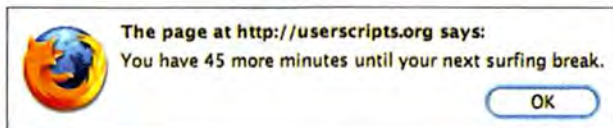


that require visitors to wait for up to 2 minutes before they can download their file. The NoDelay script (find.pcworld.com/61172) takes you straight to your download, with no unnecessary pauses.

Stealth Kiwi

The Internet is a magical place—so magical, in fact, that unless you have the self-

control of a Zen monk, you can easily waste hours every week browsing various guilty pleasures online. The Stealth Kiwi script ([find.pcworld.com/](http://find.pcworld.com/61173)



DO YOU FIND yourself frittering away your day watching videos of skateboarding cats? Stealth Kiwi helps you limit your surfing.

61173) keeps a tighter rein on your unproductive surfing habits by refusing to grant you free rein to indulge in your browsing weaknesses

during your 9-to-5 hours.

To help you preserve your sanity, however, Stealth Kiwi does permit you to take a 10-minute browsing break every hour. It's like bottled self-control.

The Movie Dude

Movie lovers tend to spend hours researching films on the Internet Movie Data- >>

Here's How

base, reading reviews on Rotten Tomatoes, and adding films to their Blockbuster or Netflix queues. The Movie Dude script (find.pcworld.com/61174) adds links between these (and other) popular movie destinations, bringing greater continuity to the process of finding a movie you're interested in, researching it, and then renting or purchasing it.

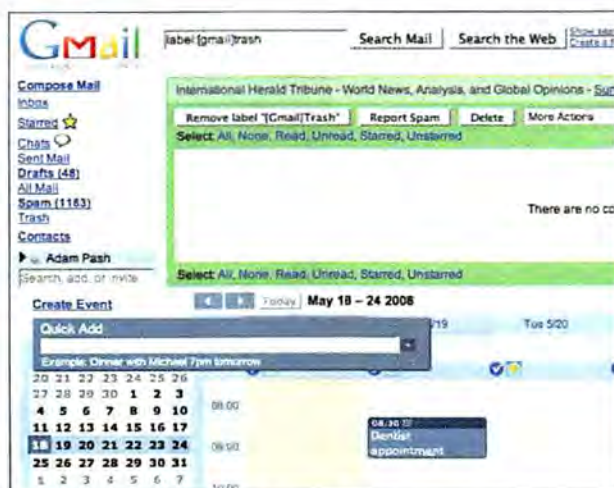
Gmail Addons

If you have ditched your desktop e-mail applications (Microsoft Outlook and the like) but you miss being able to manage your e-mail and agenda via a single-window command center, you need the Gmail Addons user script (find.pcworld.com/61175).

By default, the script embeds Google Calendar inside Gmail so that you can access both from the same place; but in addition it can embed Google Reader, the popular Remember the Milk to-do list application, and other great productivity Web apps through additional scripts.

Gmail Macros

Gmail is easily the best Web-based e-mail application on the planet, so you might be surprised to learn that a Greasemonkey script called Gmail Macros (find.pcworld.com/61176) drastically changes Gmail for the better. Created by a Google employee (though not as an official Google project), Gmail Macros enhances Gmail's already robust set of keyboard shortcuts with combinations that let you navigate your inbox and label your e-mail messages on the fly, without taking



GMAIL ADDONS INTEGRATES Gmail, Google Calendar, and other Web apps into a single window for an all-in-one command center.

your hands off the keyboard. Better yet, it accomplishes all of that through an easy-to-use graphical interface.

Gmail Attachment Icons

With just about 7GB of storage space—and counting—available in Gmail, you likely share more file attachments now than ever before. At its default settings, Gmail indicates e-mail attachments with a generic paper-clip icon. The Gmail Attachment Icons script (find.pcworld.com/61177) embeds small icons in place of the generic catch-all to indicate whether the attachment is a picture, a Word document, a PDF, an MP3, or a zipped file.

Textarea Backup

You've just finished writing the ultimate blogger's opus, but before you have the chance to click Submit, your browser crashes and you're back at square one—minus the original exhilarating rush of inspiration.

Had you installed the Textarea Backup user script (find.pcworld.com/61178) before catastrophe struck, your

masterpiece would have been saved after every new keystroke. Whether your browser crashes or you accidentally close the window, everything will be restored to the text field automatically the next time you open the page.

Note: Textarea Backup may cause problems in Gmail because it tends to save the last address you sent to, quietly filling in the cc and bcc fields with that address. You can avoid encountering that problem when using the script by adding mail.google.com to your list of excluded sites.

Textarea Drag Resize

When you have plenty of things to say but the comment text field on your

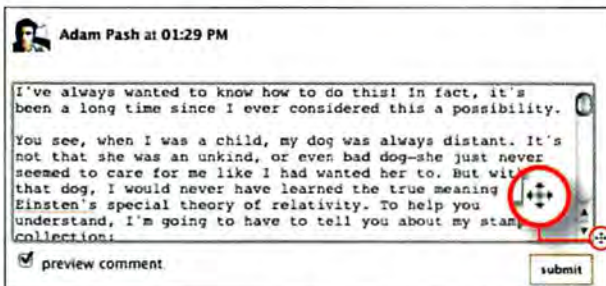
favorite blog shows only a few lines of text, the experience is like trying to pour the ocean into a teacup. The Textarea Drag Resize script (find.pcworld.com/61179) adds a small resize icon to the corner of every text area on the Web. Click the icon, and you can easily extend the field to accommodate your verbosity.

Facebook Profile Cleaner

For some Facebook fans, applications are the site's greatest innovation; for others, nothing is more irritating than a page littered with SuperPokes and Scrabble boards. The Facebook Profile Cleaner script (find.pcworld.com/61180) removes all custom apps—and optionally, various other Facebook features you dislike—from the profile you peruse.

MySpace Custom Style Remover

One reason for MySpace's huge appeal is that it invites users to customize their profile pages in ways that reflect their personality. But what if their personality turns out to be loud, ugly, and ridiculous? The MySpace Custom Style Remover (find.pcworld.com/61181) returns profiles to their clean, default origins.



IF YOUR BLOG'S text boxes are too small to hold what you want to say, use Textarea Resize to drag the box to a more appropriate size.

Create Your Own Blu-ray Video Discs

IF YOU'RE ENOUGH of an early adopter to have an HD camcorder as well as an HDTV and a set-top Blu-ray player, you're probably itching to create high-def discs from your footage and present them on your HDTV.

Sure, you could just plug your camcorder into your TV and press Play, but then you would miss out on all the great HD features that Blu-ray has to offer. I'll show you how to burn your video onto discs that will run on your Blu-ray player.

For this project, you'll need a high-def camcorder and a Blu-ray video editing application. Surprisingly, you don't necessarily need an actual Blu-ray recorder (which can cost upward of \$600) to do the job. You can burn regular DVD discs in a high-def format—complete with Blu-ray menus—using a standard DVD recorder, though it fits substantially less footage onto a disc.

Of course, if you're creating an epic saga of your family's vacation adventures, you'll want a real Blu-ray burner such as the LaCie d2, which can record more than 4 hours of 1080i video footage from your HD camcorder to a single 50GB disc.

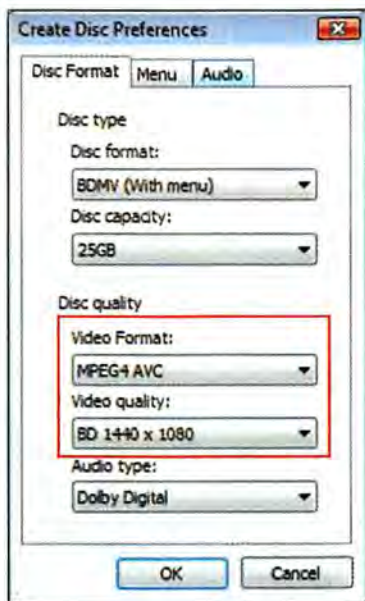
Within your favorite Blu-ray-compatible video editing application, trim and edit your clips, mark your chapters, and customize your disc menu. For high-definition 16:9

discs, size the background art to 1280 by 720 pixels before importing it.

Burning Your Blu-ray Disc: Avoid Missteps

After you've finished editing and creating your disc menus, set the recording parameters and burn to disc. This is the tricky part, as it's the only step of the process where things can go very wrong. First, be sure that all of the needed Blu-ray codecs and plug-ins are installed, and confirm that your Blu-ray drive (if you have one) is attached to your computer. Most Blu-ray software requires separate registration of Blu-ray components, which happens only when you attach a Blu-ray drive and start to author with it.

Next, make certain that



BE SURE THAT your output settings are at the highest quality, and that they match your source video.



WITH AN HD camcorder, a video editing application, and a Blu-ray burner on your PC, you're ready to create your own high-def videos.

your output settings are at the highest quality, and that they match your source video. For example, if your source video is HDV (.m2t), confirm that MPEG-2 1440 by 1080 is chosen as the video format. Similarly, for AVCHD (.mts), choose MPEG-4/H.264 and either 1440 by 1080 or 1920 by 1080, depending on the resolution at which you recorded the video. If you need to mix HDV and AVCHD clips, choose AVCHD and 1440 by 1080 as a common output format.

The purpose of carefully matching your output settings with your source video is to maximize quality while minimizing the need for reencoding by your video editor—a process that can take many hours. CyberLink Power2Go has a special “smart rendering” technology that skips encoding of any parts of your video clips that have not been modified. So if all you've done is trim the ends of clips, you'll avoid most production and encoding time. By contrast,

Pinnacle Studio 12 does not have equivalent capabilities, so it ended up spending more than 30 minutes saving a BDMV disc image of a tiny 3-minute AVCHD clip, even though I had not modified the video at all. Pinnacle says that smart rendering is not yet implemented in Studio Ultimate for AVCHD files, although it is for HDV.

The settings box will also ask you about your disc format and media. This is where you specify that you want to burn a BDMV, and choose Blu-ray or DVD media for your project. The burn-setup box in Pinnacle Studio has similar options, plus a setting for creating a disc-image folder on your hard drive as well as for burning a disc. This is a great feature, since you can go back and reburn that disc image, without waiting for production and encoding, at any time. You can also use the disc image as a test file, burning it only when you are satisfied that your project is perfect; this approach saves you from cranking out a stack of expensive drink coasters.

—Becky Waring

E-Mail Posts to Your WordPress Blog

LOOKING FOR AN easier way to update your blog? WordPress 2.5 can publish posts that you e-mail to a specific address, either from your usual e-mail service or from your cell phone.

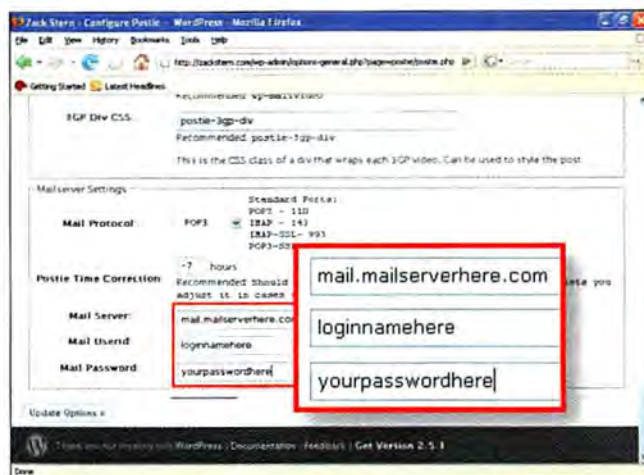
The default process in WordPress has several drawbacks, however: It doesn't work with SSL accounts, it requires POP3, and currently it doesn't work with photos. I prefer a free plug-in called Postie. Besides overcoming the limitations in WordPress 2.5's e-mail support, Postie can enhance your security by publishing only messages sent from a specific address.

To get started, create a new, secret mail account on your Web server to use exclusively for WordPress content. Next, download the Postie .zip file from find.pcworld.com/61183, unzip it, and upload the 'postie' folder to /wp-content/plugins on your Web server. Create new folders in your root Web directory called 'wp-photos' and 'wp-files' where Postie can save its data. (Make sure that they're write-accessible on your server by setting their permissions to 755.)

In WordPress, click *Plugins* near the upper right. Activate Postie. Log out and then log back in as an administrator. Click *Settings•Configure Postie*. Enter any e-mail addresses that you want to permit to post entries to the blog. Leave the other settings at their default values,

scroll down to the end of the page, and then enter your e-mail account settings. Click *Update Options*, and then click *Test Config*. If you run into any problems, confirm that the e-mail account details are correct.

Postie should be ready to run now, but you will need to create a scheduled Unix command called a cron job that will regularly check the e-mail account for new messages. In your Web server's configuration interface, open the Cron Jobs tool and create a new job. In the text



ENTER YOUR MAIL server address and the log-in information for your secret blog e-mail address into Postie's Mailserver settings.

field for the new job, enter
*/5 * * * * /usr/bin/lynx --source
http://www.yourwebsite.com/wp-content/plugins/postie/get_mail.php >/dev/null 2>&1 (enter a space after 'source'); WordPress will now check for new

mail every 5 minutes. Postie will use your e-mail subject line as the title of the blog post, while the body of your message will become the body of the new post.

—Zack Stern

READER-TO-READER

FORUMS.PCWORLD.COM

Unlock Vista's Hidden Boot Screen

FROM THE PCW FORUMS IF YOU'RE sick of staring at the same old startup screen every time your Windows Vista PC churns into action, you're not alone. This month, PC World forum member Piyush Singh offers a way to unlock an alternative Vista boot screen with just a few clicks of the mouse.

Piyush Singh Says:

Windows Vista has a hidden boot screen that you can activate, and it's totally different. Instead of the boring progress bar, you'll see a soft aurora against a black background.

Click *Start*, type **msconfig** in the Search field, and press **<Enter>**. After you click through the UAC prompt, a system configuration window will open. Select the *Boot* tab.

In the Boot tab, check the

box marked *No GUI boot*. Click *Apply* and then *OK*. Windows will prompt you to restart the PC, so click *Restart*.

The next time your computer reboots, you'll see the aurora screen with a black background and the text 'Starting Windows Vista' at the bottom. If you decide to restore the

original startup screen, just go back into the system configuration tool and uncheck the *No GUI boot* option.

Join our online community at forums.pcworld.com. If we use your contribution in the magazine, we'll send you an ultra-cool PC World T-shirt.



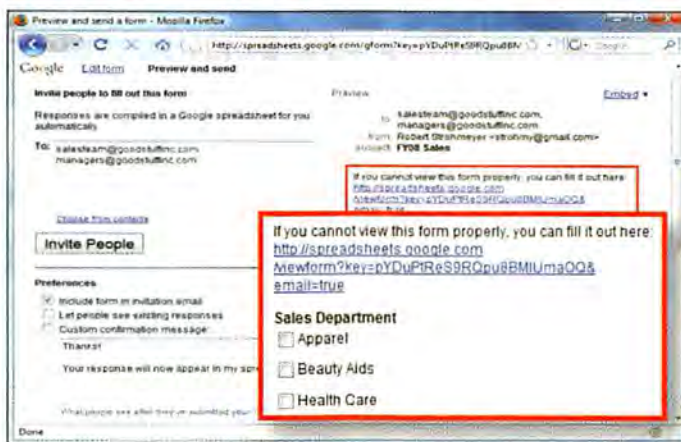
ENABLING THE 'No GUI boot' option invokes this simple, yet appealing, auroralike screen whenever Windows Vista starts up.

Safely Share Google Spreadsheets With E-Mail Forms

COMPARED WITH Microsoft Office, Google Docs (docs.google.com) lacks several advanced capabilities. But making up for its smaller selection of math formulas are its phenomenal collaboration features.

You can have your coworkers edit the same spreadsheet through the Share button located near the upper-right corner of the screen. And if one colleague fouls up your file, you can restore it to an earlier version by clicking the *Revisions* tab and selecting your desired version.

If you'd rather keep others from wrecking your spreadsheets in the first place, take



GOOGLE SPREADSHEETS LETS you protect your spreadsheet by sending your colleagues a simple form that automatically updates your data.

advantage of a new feature that lets you collect data by way of an e-mail form.

After clicking *Share*, select the radio button marked *to fill out a form*. You can then

create a form to send to coworkers, requesting only the data that you need.

By default, Spreadsheets uses only the column labels from row 1 of your spread-

sheet to design the form. If you want the first column of your sheet to be a category list, be sure that it is properly labeled in row 1 and then edit it in your form to make it a check-box question.

Next, enter the categories you want to see in that column. Once people submit data, it automatically appears in the spreadsheet in exactly the way you prefer.

You can configure Spreadsheets to e-mail you updates of new changes. Click *File•Set Notification Rules*, and select your notification preferences by clicking the check boxes.

—Roger Hibbert

ANSWER LINE

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? Why doesn't Vista's System Restore actually restore the system?

Stepsx12, Answer Line forum

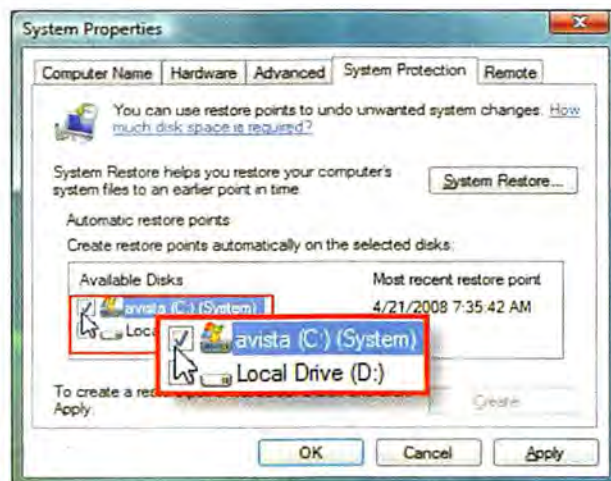
POOR DISASTER RECOVERY is one of Windows Vista's most vexing problems. Some utilities—usually big security suites that must be on at all times to protect you—interfere with System Restore.

One workaround is to run System Restore in Safe Mode. Reboot your PC and press <F8> before Windows starts loading (you may need a few tries to get the timing right). Select *Safe Mode*. Once Windows is up, try System Restore.

Is a long-term solution available? Not really. Uninstalling your security software might help. But there's no guarantee, and you'll need to replace that software with something else. Trying to uninstall it is probably not worth the trouble unless the program is giving you a lot of other problems.

At the Answer Line forum, community member Evildave recommended disabling and reenabling System Restore as a possible fix. But do that only after you have successfully restored your system or completely given up, as that action erases all of your existing restore points. If you're ready to give it a try, here's how.

1. Click *Start*, type `sysdm.cpl`, and press <Enter>.
2. In the resulting System Properties dialog box, click the Sys-



WHEN SYSTEM RESTORE in Windows Vista refuses to work, you may get results by disabling the service, then reenabling it.

tem Protection tab.

3. You'll see the Available Disks list. Uncheck all discs that are checked.

4. When you attempt to uncheck C:, a warning will come up asking if you really want to turn off System Restore. Click *Turn System Restore Off*.

5. Back in System Properties, click *Apply*. Wait while Windows processes that command.

6. Recheck the box next to C:, and then click *Apply* again.

7. Click *Create* to make a new restore point. You should be set for your next emergency.

—Lincoln Spector

Store Your Music Online With MP3tunes

WE'RE LIVING IN the Internet Age—so what good is a music collection that's trapped inside your home PC? Fortunately, liberating your song library and then streaming it over the Web is easier than you might think. And it won't cost you a cent.

MP3tunes.com will store up to 25GB of your music files free of charge. Once you have uploaded your song collection, you can sign in to your account from any Web-connected PC and stream to your heart's content; and your listening choices come complete with playlists and autogenerated mixes.

Start by signing up for an account, which gives you

an MP3tunes "locker." Next, download LockerSync 3.0 from MP3tunes' Downloads section. The utility keeps your local music library in sync with your online music locker; it's available for Windows, Mac, and Linux.

You can have LockerSync scan your entire system for music or set it to monitor and sync specific folders. Then it's just a matter of waiting while the software copies your songs over to MP3tunes' servers. Due to the slow upload speeds of most ISPs, uploading a large collection can take several hours to more than a day.

After the initial upload, however, your subsequent



THE MP3TUNES PLAYER lets you stream albums, artist libraries, playlists, or a random mix of tunes, in a variety of audio formats.

synchronizations should go much faster. And you can start streaming music from your locker even while uploads are under way. The MP3tunes player runs in a browser window and offers familiar controls, including shuffle and repeat modes and a playlist builder. You even have the option to edit a song's metadata.

Despite the service's name, MP3tunes doesn't limit you to MP3s: It can stream most DRM-free audio formats, including AAC, Ogg, and WMA. MP3tunes also offers a browser plug-in that permits you to add music straight to your locker from any site that hosts MP3s.

—Rick Broida

FACT CHECK ROBERT STROHMEYER



Are Pricy Premium Cables a Waste of Your Money?

WALK THE AISLES of your local electronics store, and you'll see cables priced at \$300 or more. Can such expensive cables possibly justify their price tags through superior signal quality?

The answer boils down to whether the cable is for digital or analog technologies. Digital signals are just bits of data, and if all of the bits get where they're going, your output will be as good as the original source data. So, compared with a \$30 cheapie, a \$300 HDMI cable from an upscale electronics retailer won't give you a single pixel of improved picture quality on your HDTV. The same goes for DVI, FireWire, and USB cables.

With analog cables, however, the difference is more subjective. A not-so-scientific double-blind test performed by the *Wall Street Journal's* Lee Gomes in January (find.pcworld.com/61185) found that only a small majority (61 percent) of listeners preferred the sound of a \$2000 pair of Monster cables over cheap hardware-store speaker wire.

When it comes to consumer electronics cables, you don't always get what you pay for.

I believe I can hear a difference in quality between a \$5 set of hardware-store wires and \$30 oxygen-free, gold-tipped cables. Beyond that, it's all the same to me. Avi Greengart, a consumer electronics analyst for Current Analysis, supports that view.

Because standard copper wiring oxidizes, reducing the signal across the cable, says Greengart, "I personally recommend buying 99.99 percent oxygen-free cables with gold-tipped connectors instead of regular copper wiring." That kind of audio-grade cable doesn't have to cost much, but some manufacturers make customers pay through the nose.

Greengart has these words for people who are willing to spend hundreds of dollars on cables: "They are certainly free to enjoy their excessive disposable income by wasting it."



THINKING OF SHELLING out a hundred bucks for this 3-foot HDMI cable? Don't waste your money.

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Dress Up

These (mostly free) downloads will help you transform it into something new.

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UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA

EDWIN WRIGHT, Individually and On Behalf
of All Others Similarly Situated,
Plaintiff,
v.
HEWLETT-PACKARD COMPANY
Defendant.

Case No. C06-04368 (HRL)

NOTICE TO ALL PERSONS WHO PURCHASED FOR THEIR OWN USE (AND NOT FOR RESALE) AN HP PAVILION HOME PC CONFIGURED-TO-ORDER COMPUTER WHOSE WARRANTY PROMISED TECHNICAL PHONE ASSISTANCE TO DIAGNOSE POTENTIAL HARDWARE ISSUES FOR AS LONG AS THE ORIGINAL OWNER OWNED THE PC

This notice is to inform you about a proposed settlement of a class action lawsuit entitled *Wright v. Hewlett-Packard Company*, United States District Court for the Northern District of California Case No. C06-04368 (HRL) (the "Litigation"), the Court's certification of a settlement class in the Litigation, and of a hearing to consider the settlement.

In the Litigation, plaintiff Edwin Wright ("Representative Plaintiff" or "Wright") alleged that during the period July 12, 2002 to the present, defendant Hewlett-Packard Company ("HP") sold configured-to-order HP Pavilion Home PCs to consumers by promising its customers free "technical phone assistance to diagnose potential hardware issues...as long as YOU (the original owner) own the PC," but that HP failed to provide consumers with the promised free technical support. HP denies the claims made in this Litigation, and denies that anyone has been harmed or deserves compensation in relation to the claims. The Court has not made a decision on the merits.

In accordance with the proposed settlement, HP has agreed to: (1) entry of an injunction ordering HP to provide free technical phone assistance to the Settlement Class to diagnose potential hardware issues for as long as the Settlement Class Members continue to own their PCs; and (2) establishment of a Settlement Fund consisting of \$500,000 that will be distributed to the Settlement Class members in the following manner: (a) an award of \$40 will be paid to all Settlement Class Members who were charged by HP for the provision of technical phone assistance to diagnose potential hardware issues during the Class Period for each charge imposed upon them by HP; and (b) an award of \$20 per person will be paid to each Settlement Class Member who was denied technical phone assistance to diagnose potential hardware issues during the Class Period, but who did not pay HP to receive technical support. Any amount remaining in the Fund after paying awards to the Settlement Class Members will revert back to HP.

All Settlement Class Members are entitled to the relief provided by the entry of an injunction ordering HP to provide free technical phone assistance to the Settlement Class to diagnose potential hardware issues for as long as the Settlement Class Members continue to own their PCs.

THOSE INDIVIDUALS WHOM HP HAS IDENTIFIED FROM ITS RECORDS AS BEING PART OF THE SETTLEMENT CLASS WILL RECEIVE A NOTICE DIRECTLY FROM HP TO THE EXTENT THAT HP HAS VALID CONTACT INFORMATION FOR THOSE INDIVIDUALS. IF YOU RECEIVE A NOTICE PACKAGE FROM HP YOU DO NOT NEED TO FILE A CLAIM TO RECEIVE THE BENEFITS DESCRIBED ABOVE; YOUR QUALIFICATION TO RECEIVE THE BENEFIT AND THE AMOUNT OF THE BENEFIT WILL BE DETERMINED FROM HP'S CUSTOMER SERVICE RECORDS AND BENEFITS WILL BE PAID AUTOMATICALLY.

IF YOU DO NOT RECEIVE A NOTICE FROM HP, THEN EITHER (1) HP HAS NO RECORD OF YOU OWNING ONE OF THE COMPUTERS AT ISSUE; OR (2) HP DOES NOT HAVE VALID CONTACT INFORMATION FOR YOU. IF YOU BELIEVE YOU ARE A SETTLEMENT CLASS MEMBER AND WISH TO OBTAIN A CLAIM FORM OR INQUIRE REGARDING YOUR QUALIFICATION TO RECEIVE THE BENEFITS DESCRIBED ABOVE, PLEASE CONTACT THE HP SETTLEMENT ADMINISTRATOR AT: PO Box 1944, Faribault, MN 55021-7199 or call 1-866-403-1831.

In exchange for these benefits, HP will obtain a release of liability on behalf of the Settlement Class Members.

If the Settlement is approved, the Representative Plaintiff will apply for an incentive award and Plaintiff's Counsel will apply for an award of fees and expenses. Neither award will affect the relief available to Settlement Class Members. All claims of the Settlement Class Members which were or could have been asserted in the Litigation, based upon the facts alleged in the Litigation, will be released.

If you wish to remain in the Settlement Class you need not do anything. If you do not wish to remain in the Settlement Class, you must exclude yourself by mailing an exclusion request to: Miranda P. Kolbe, Schubert Jonckheer Kolbe & Kralowec LLP, Three Embarcadero Center, Suite 1650, San Francisco, CA 94111 and to Robert A. Particelli, Morgan, Lewis & Bockius LLP, 1701 Market Street, Philadelphia, PA 19103. If you exclude yourself, you may pursue an individual claim, but you will not receive any of the benefits of the Class Settlement, and cannot object to the Settlement. If you wish to object to the Settlement, you must file your objection with the Court and serve it on the parties' counsel. To properly exclude yourself or object, you must follow all of the detailed instructions and formats set forth in the full notice and the Settlement Agreement on the website and serve all parties. **All objections and requests for exclusion must be postmarked by September 18, 2008.** The Court has scheduled a hearing to consider the settlement to be held on October 24, 2008 at 9:00 a.m., before Judge Jeremy Fogel, Courtroom 3 of the United States District Court for the Northern District of California, located at 350 McAllister Street, San Francisco, CA 94102.

DO NOT CONTACT THE COURT OR HP CONCERNING THIS NOTICE OR THE LAWSUIT. If you would like more information about this notice or this case, you may view this notice, the complete Long Form Notice, the Settlement Agreement, and the Court's Order Granting Preliminary Approval at www.hp.warrantysettlement.com. If you do not have internet access, you may receive printed copies by contacting Miranda P. Kolbe, Schubert Jonckheer Kolbe & Kralowec LLP, Three Embarcadero Center, Suite 1650, San Francisco, CA 94111.

STEVE BASS'S HASSLE-FREE PC



Ten Tools to Make Windows Shine

Hide files and folders, show the pesky <Insert> key's current mode, stop Kaspersky's annoying alerts, and augment your spyware protection.

ARE YOU WORRIED about Paul Pry and Nosey Parker snooping in your PC? I have two free utilities that can lock up and hide your sensitive folders and keep them from inquisitive eyes. For readers who didn't like my tip in the July issue on disabling the <Insert> key, I offer a nifty program for watching your <Insert>, <Caps Lock>, and <Num Lock> keys. And I have a cool, free tool that gives you an extra layer of defense against spyware when you're Web surfing.

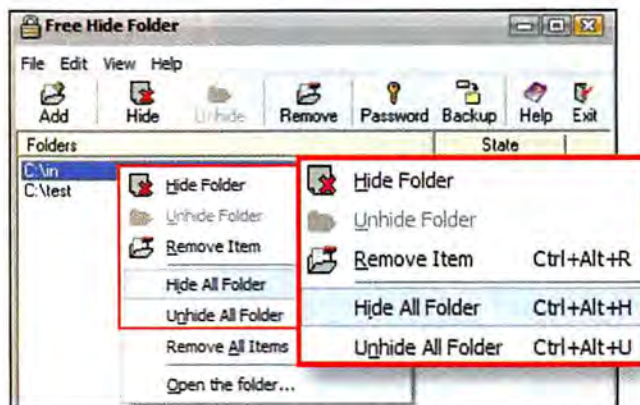
Hide and Encrypt Files and Folders

The Hassle: I have files—documents and videos—on both of my PCs that I'd like to keep private. Do you know of a sure way to do it?

The Fix: If you just want to tuck away one or a few folders, use Free Hide Folder (find.pcworld.com/61187). This menu-driven and password-protected tool creates obscurely named, hidden folders to hold your private data. But it isn't completely secure: Directory Opus (find.pcworld.com/61189), an ordinary file manager, displayed the hidden folder when I tried it. And if someone on your machine searches for a file name in the folder (or even part of the file name, such as *.jpg), they can find the files. If you want to keep your folders hidden and secure, use TrueCrypt (find.pcworld.com/61190). This free, powerful tool creates an encrypted volume that you use as you would any other drive—but only you can access the files. Note: To avoid losing your data, it's essential that you read the tutorial.

More <Insert>-Key Madness

The Hassle: Bad news, Bass. I strongly disagree with your tip to disable the <Insert> key [see find.pcworld.com/61191 for details]. I use <Insert> often when filling in text over a form in Word, to pre-



HANDY SNOOP SHIELD: Free Hide Folder creates obscurely named, hidden folders to help keep your private data away from prying eyes.

vent the rest of the line from moving to the right. My gripe is with Windows: It doesn't indicate whether I'm in insert mode or overwrite mode. So how about a tweak to show the status?

The Fix: Download DK:Keyboard Status (find.pcworld.com/61192), and you'll see the status of the <Insert>, <Caps Lock>, and <Num Lock> keys in a system-tray balloon. Unzip the file and drag the app to the Startup group. If you'd rather keep tabs on your <Caps Lock>, <Num Lock>, and <Scroll Lock> keys, use Vasilios's Num-CapsScroll Indicator (find.pcworld.com/61211). Both tools are free.

Disable Kaspersky's Squealing Alert

The Hassle: I use Kaspersky Lab's antivirus program, but I hate the squealing-pig noise it makes whenever it finds a virus.

The Fix: That oinking sound is both weird and annoying. You can change it by going to *Settings•Appearance•Advanced* and clearing each item in the Sound column. A better idea is to change the sound file to something more appealing. (My alert simply says, "Uh-oh!" You're welcome to use it. Download the sound file from find.pcworld.com/61193.) From *Settings•Service*, clear *Enable self defense*, click *Apply*, and close Kaspersky. Next head for *C:\Program Files\Kaspersky Lab\Kaspersky Anti-Virus 7.0\Skin\sounds*, delete the *Infected.wav* file that exists there, and copy your newly downloaded file into the resulting vacancy. Reload Kaspersky and then put a check mark on *Enable self defense*.

Ramp Up Against Spyware

The Hassle: I run antivirus and antispyware software, but I still worry about getting nailed by malware. Give me more protection!

The Fix: Even paranoids have enemies, right? I get an extra edge with Javacool's SpywareBlaster (find.pcworld.com/61196), a freebie that blocks nasty ActiveX controls. If you're still worried, use the Try & Decide feature in Acronis True Image 11 (find.pcworld.com/61197) while browsing. It acts as a virtual machine, writing disk changes to a hidden recovery partition. If anything goes awry, you can restore a pristine version of Windows. ●

TOOLS OF THE MONTH

Two Ways to Fight Bloat

I USE NERO, but that behemoth disc-burning application seems to grow with each new release. At the other end of the spectrum is ImgBurn (find.pcworld.com/61194), a lean but still-powerful tool that, well, burns discs—CDs, DVDs, and, if your optical drive supports it, Blu-ray. It runs on every Windows platform, as well as on Linux. One bloated application I avoid is Photoshop; its complexity scares me. That's why I love Paint.Net (find.pcworld.com/61195), a free photo and imaging program that is packed with features—multiple-image support, layering, unlimited undo, and plenty of filters—but isn't overwhelming.



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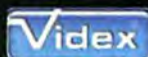
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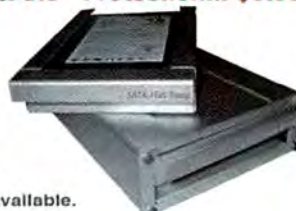


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STEPHEN MANES



Singing the New-PC Blues

IT'S SO PAINFUL to move your life from one Windows machine to another that I tend to buy PCs only when I have to. But as I mentioned last month, Microsoft's abandonment of Windows XP sent me scrambling to find a replacement for my superannuated but still functioning subnotebook. I kept hoping that some undiscovered Web magic might somehow make the process easier this time. But, as my latest go-round shows, once you're done shopping, the Web doesn't really help you much.

Web deals aren't always best: With so many online stores refusing to publish telephone contacts, I had dropped my old habit of picking up the handset to get better deals. This time was different. When I went to configure my new Sony laptop online, I found a "Fresh Start" option that would minimize crapware and save me \$25, but the only mention of XP was a little display ad with a phone number.

When I called, the salesperson explained how to get the XP "downgrade" discs: I would have to pay \$100 to "upgrade" to Vista Business ("upgrade to downgrade"—that's a concept the late George Carlin would have savored). Then the rep started offering me better deals than I could find on Sony's site. First was an offer of \$100 off the machine's Web-posted price. I took him up on a different deal that ended up saving me \$150 on the laptop with a three-year accidental damage warranty, provided that I also bought two accessories, including a spare battery I wanted anyway. So much for thinking that Web prices are set in stone.

Web specs aren't always right: The other accessory I ordered was a spare "compact" AC adapter that the company's Web site listed at 0.51 pounds. That's really its weight—if you don't count the quarter-pounder AC cord. And Sony's site listed my machine's built-in Webcam at 1.3 megapixels. The true count? One full megapixel less, a measly 640 by 480 dots. I knew the correct spec beforehand from reviewing a similar machine, but how are ordinary customers expected to react when they encounter avoidable mistakes like these two?

Web support isn't always supportive: Before installing XP, I made a DVD backup of the default setup in case something went amiss or—horrors—I might want to restore Vista someday. Then I noticed that Sony recommended I create



Setting up a new system is a major hassle—and the Web doesn't provide much help.

"recovery" discs via a different process. Web support was silent about the difference, so I ended up babysitting the laptop for several hours to make both. Which one might work when I need it to? My voice-of-experience bet: Neither.

Web upgrades are always tiresome: After taking a couple more hours to install XP, I wasted more time downloading and installing the inevitable updates. Next I discovered that some essential drivers were missing. Unfortunately, Sony's Web site didn't offer them until I pretended I had a different (but similar) model. Then came the finding, installation, and Web upgrading of all my old software. And after all that, I still had to fritter away more hours dopping out why the new machine couldn't see the other ones on my home network and vice versa. The problem? An idiotically overprotective Norton Internet Security default configuration.

In the business world, when you get a new PC, a paid expert handles all this stuff for you. In the Mac world, you can hook two systems together and make the new one work almost exactly as the old one did in maybe half an hour. In the world of Windows "personal" computers, you get to be your own expert and waste at least a day of your personal time.

How soon might your wonderful new machine pay that back? The fourteenth of never. ●



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