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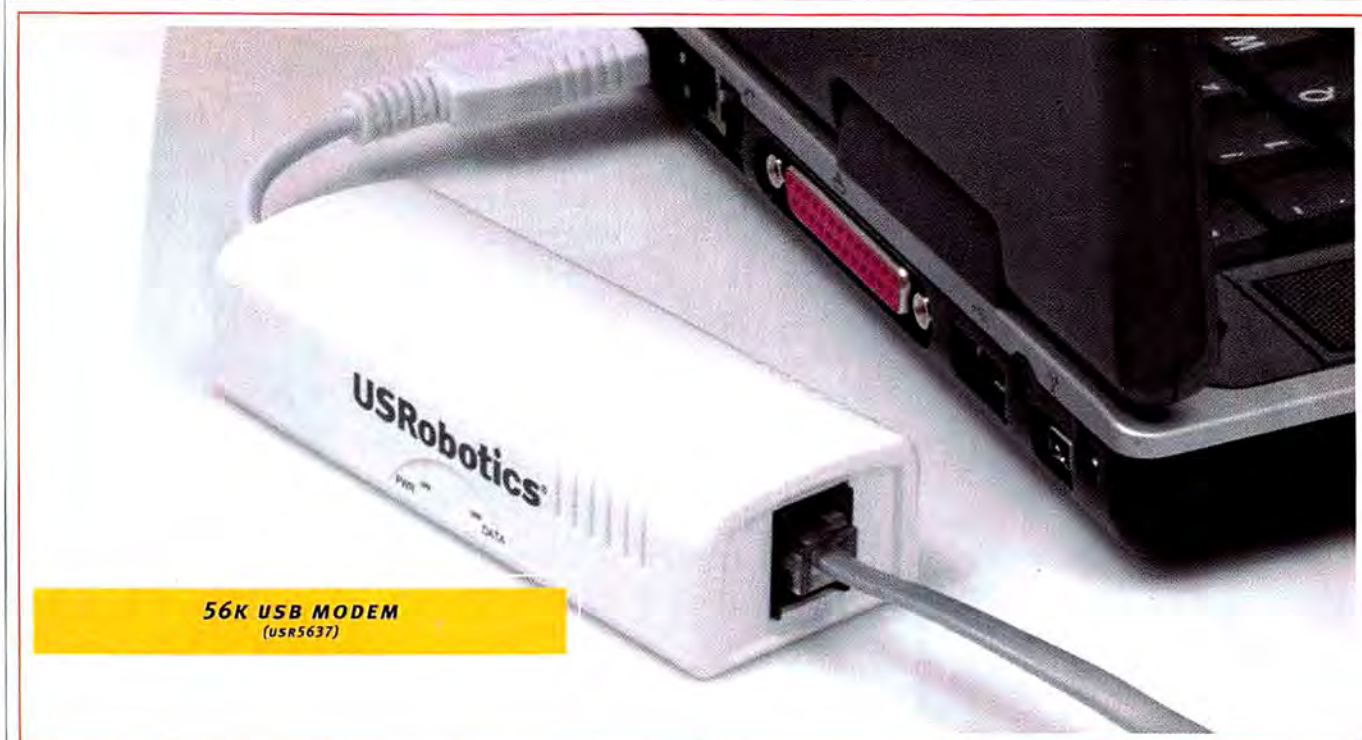

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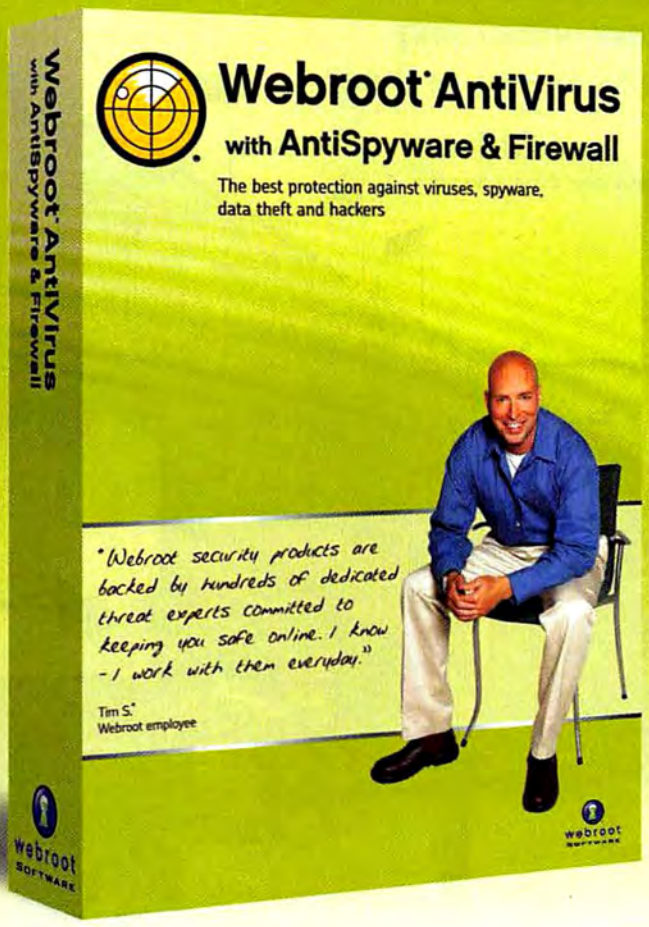

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Techlog

HARRY McCRACKEN

25 Moments From Our First 25 Years

We at PC World have seen technology history—lots and lots of it. And maybe even made a little of it ourselves.

WHEN A MAGAZINE called *PC World* hit newsstands a quarter century ago, the odds weren't exactly stacked in its favor. The mortality rate for new magazines has always been extremely high. And in the technology realm, even the most successful of brands rarely have infinite shelf lives. Early issues of *PCW* featured products such as VisiCalc, WordStar, and the Hayes Smartmodem—all dominant in that era, all long dead.

PC World, however, didn't just survive, it thrived—and continues to do so. Much of what has made us successful is visible in those early issues, including an unblinking willingness to serve readers with honest reviews and reporting even when doing so tended to tick off the industry we covered.

But if there's been a secret to our success it's that we—like the technology we cover—have never stopped evolving. A publication founded to help people use a desktop box that was bought almost exclusively by businesses now covers an array of products and services for work, home, and everywhere in between. And while plenty of readers still look forward to receiving *PCW* in dead-tree form, today PCWorld.com serves even more people.

We tried to keep the self-congratulatory stuff in this special issue to a minimum. But would you mind if I took a couple of pages to look back at some of the moments that made us...well, us?

January 1982: San Francisco entrepreneur David Bunnell starts a magazine to cover the new computer known as the IBM PC. That publication is an instant hit...but it's not *PC World*. Bunnell's brainchild is *PC Magazine*, and multiple publishers soon angle to buy it.

One bidder is Patrick McGovern, founder of *Computerworld* and other major tech publications. But after agreeing to sell to McGovern, investor Tony Gold, who owns a majority stake in the fledgling magazine, instead arranges a sale to New York publisher Ziff-Davis, the company that continues to publish *PC Magazine* to this day.

Unfazed, McGovern contacts Bunnell and his business partner, Cheryl Woodard. Are they interested in starting a rival publication? They are—and all but four of *PC Magazine*'s 52 staffers join

them (see photo above). *PC World* is formally announced on November 29, 1982, at the Comdex trade show; the first issue appears in early 1983, the fattest debut in magazine history up to that time. Our first editor is Andrew Fluegelman, whose popular PC-Talk program had recently introduced the shareware concept (see page 144).

September 1983: We publish our first World Class Awards, a roundup of the year's top products. The judging system and the name changed over time—we now call the winners the 100 Best Products of the Year—but the tradition continues. (Check out the most recent version at find.pcworld.com/59865.)

November 1983: *PC-Welt*, our German edition, debuts. It's the first of dozens

of international versions, making the "World" in "PC World" most fitting.

February 1984: We launch a section called *PCjr World*, devoted to IBM's new home PC and declare that we expect the Jr. to revolutionize the way we learn and live," and that *PCjr. World* will soon morph into a stand-alone magazine. Wrong, wrong, wrong.

June 1987: We introduce *Consumer Watch*, a section dedicated to helping readers avoid shopping and customer-service pitfalls. It's still with us (see page 41) and still a *PCW* flagship.

July 1987: For reasons lost to time, we decide to publish our first centerfold. It's of glamour boy Bill Gates—fully clothed, thank heavens.

May 1988: Steve Bass, president of a user group in Southern California, contributes a guest column bemoaning the state of IBM's service. Today, he's still writing up a storm for us—in *Steve Bass's Hassle-Free PC* (see page 134) and in his *Tips and Tweaks* blog and newsletter.

October 1991: Editor in Chief Rich Landry announces a *PCW* sibling devoted to an emerging breed of PC that includes a CD-ROM drive and a sound card. *MPC World* (later redubbed *Multimedia World*) appears in February 1992. Soon it's clear that every PC will be an MPC; *Multimedia World* is folded back into *PCW* in 1996.

September 1992: The PCW Test Center opens its doors. For the first time, we test PCs, printers, monitors, and other hardware in a consistent manner and within a controlled environment.

June 1994: Under Editor in Chief »

Phil Lemmons and Editor Cathryn Baskin, *PCW* redoubles its commitment to consumer journalism. Exhibit A: We publish a report on our first reader survey on the state of PC reliability and service. Winners include AST, Compaq, and NCR; Ambra, Ares, and Comtrade are at the bottom of the barrel.

March 1995: We win three Jesse H. Neal Awards—the "Pulitzers of the business press." They're among the first of dozens of trophies we'll pick up for print and online excellence.

April 1995: Stephen Manes's *Full Disclosure* debuts. The first installment riffs on the much-hyped, famously bad Microsoft Bob by discussing an imaginary sequel: Microsoft Sex.

June 1995: We add to our burgeoning online efforts, which include presences on AOL and CompuServe, with an "Internet site" called PCWorld.com.

August 1995: Microsoft releases Windows 95; we respond with a cornucopia of coverage in our September issue, including a review by Senior Editor Steve Fox, later to become *PCW*'s editor. It becomes our best-selling issue ever.

November 1995: In the *Simpsons* episode "Sideshow Bob's Last Gleaming," Channel 6 anchorman Kent Brockman resigns on air and announces he'll be writing a column for *PC World*. We revel in the moment of pop-culture glory.

March 1996: After 15 months of work, our Test Center rolls out PC WorldBench, a Windows 95 speed benchmark. We still run its descendant, WorldBench 6, on every system we test.

April 1998: We publish "PC Repair Rip Off!"—an investigative report revealing shoddy service at CompUSA. In an odd coincidence, the chain stops selling *PCW*. (It later reverses that decision.)

August 2000: Once again we conduct an investigation into repair practices at PC retailers, and once again the results are disturbing. This time we collaborate with *Dateline NBC*, which airs a segment based on our findings.

October 2000: Editorial Director Kevin McKean and Creative Director Robert Kanes unveil a redesign of PCWorld.com that's by far the most ambitious, popular version yet. It is also the first one produced by a unified editorial team that is responsible for content in both print and online forms.

October 2002: Our cover for "How to Fix the Biggest PC Annoyances," a Steve Bass how-to extravaganza, shows a man trashing his PC. In an era of rampant Windows glitches and security hassles, the image resonates: The issue becomes one of our all-time bestsellers.

December 2003: We notice that high-definition television is a lot like the PC once was: an appealing big-ticket tech product that involves lots of unfamiliar buzzwords. So we publish a big-screen buying guide. Soon, HDTV is among the most popular topics we cover.

July 2006: Twenty-three years after our first international expansion, *PC World* is still entering new markets. With the launch of *PC World India*, we're in 69 countries.

August 2006: We unveil a major redesign of PCWorld.com that introduces user reviews, forums, and other features designed to let the millions of people who use our site share their expertise and opinions.

June 2007: Our coverage of the launch of Apple's iPhone includes a video in which Senior Associate Editor Eric Butterfield first tries to scratch the phone's case with keys and then hurls it onto the pavement outside our office. The iPhone survives. And the iPhone-abuse video receives gazillions of views.

August 2007: Our journalistic peers flatter us with the American Society of Business Publication Editors' award as Web Site of the Year. In addition, it is just one of several major prizes that we took home last year; others include Folio and Eddie awards as best consumer computer magazine.

"The truth is, we had quite an adventure getting here," said *PCW* founder Bunnell in our first issue. "It's been much more than a rocket ride." In the same pages, founding editor Fluegelman wrote that "we have a worthy ship and a dedicated crew, and we hope you will join us in our explorations."

For all that's changed about PCs and *PCW*, those sentiments ring as true in 2008 as they did in 1983. For 25 years, our mission of providing unbiased, authoritative coverage of the ever-changing world of technology has made every day an adventure. We look forward to continuing it for a long time to come—and we hope that you'll be along for the ride.

Contact Editor in Chief Harry McCracken at harry_mccracken@pcworld.com; read his blog at blogs.pcworld.com/techlog. ●

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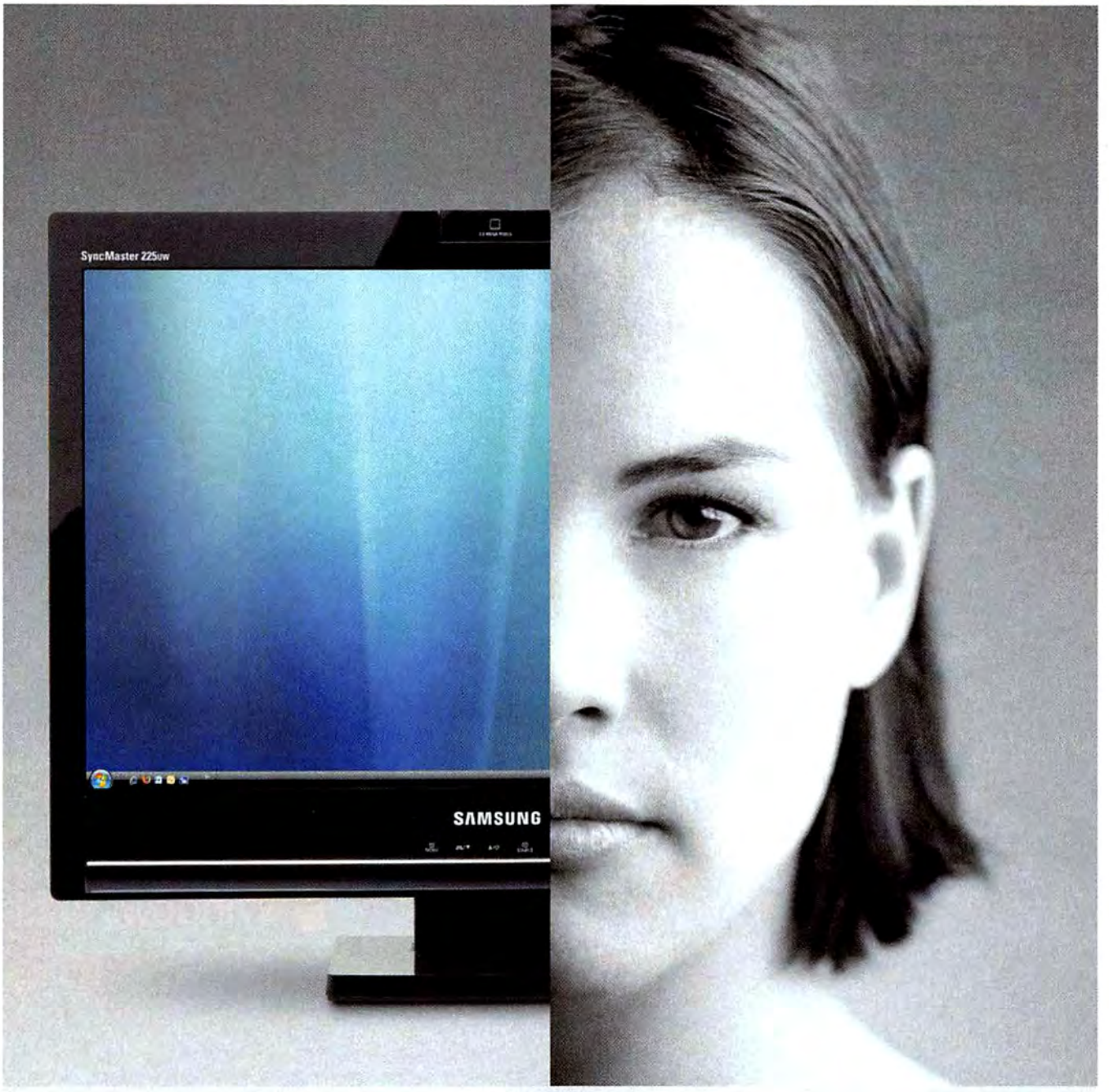

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intel Centrino Duo Core 2 Duo inside

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PCW Forum

We created quite a stir with our site's "15 Biggest Tech Disappointments of 2007." Some readers agreed with our choices; others thought we were off our rockers. Did the iPhone and Word 2007 deserve to be on the list? Share your biggest tech disappointment of last year at find.pcworld.com/59841.

2007's Tech Disappointments

I just read that your Web site doesn't like the iPhone [find.pcworld.com/59834]. What *do* you like? You are starting to sound like a bunch of old ladies who complain about everything. I think the iPhone is the best cell phone I've ever owned. For people who carry an iPod and a cell phone, it's perfect. Apparently there are a lot of us.

Jack Kubiak, West Palm Beach, Florida

Not liking the user interface change in Word 2007 is just another example of Luddite nostalgia. The ribbon visually and efficiently delivers accessibility and increased functionality to Word. Afraid of the ribbon? Then you must restrict most of what you write to unadorned or minimally formatted text. Hint: Use Notepad. You'll really love it.

Crescentdave, from the PC World forums

Wow, this article takes some shots at some big releases. No holds barred! Given we waited five years for Vista, that was a pretty big disappointment.

Mactarkus, from the PC World forums

Zune a disappointment, and you go on to say it's only because of sales? Give me a break. The Zune 2's new features being back-ported to the old Zunes has been heralded as one of the best moves that Microsoft has ever made.

Cohenjor, from the PC World forums

Why, as your article implies, is Google always seen as the savior of municipal Wi-Fi? The muni Wi-Fi project in San Francisco was a *joint* venture between Google and EarthLink. It died because EarthLink balked at paying to build Google a network. And Google apparently didn't feel like putting any of its own cash down. Somebody has to pay for all that pesky hardware.

Sfpn, from the PC World forums

The failure of the industry to decide on an accepted format for high-def DVD will hinder both further development of the equipment and more reductions in consumer prices. An overpriced format will always be left by the wayside. Choice is nice, but compatibility must be the first consideration.

Mjd420nova from the PC World forums

Here's my #1 disappointment of 2007: Vista continues its existence.
TechyGuy, from the PC World forums

It's disingenuous to report that Leopard ships with the firewall turned off (as did Tiger) without mentioning that Leopard ships with all ports closed (as did Tiger). If none of the ports are open, what purpose does a firewall serve? If Leopard was a disappointment, what OS is satisfactory? Tiger was excellent. Leopard is better.

RastaMon, from the PC World forums

I'd like to take this opportunity to thank Microsoft for making me look like some kind of freaking genius for taking up Linux a few years back. If you guys [at Microsoft] didn't already have most of the money in the world, I'd probably send you a tip or something.

Yourworstnightmare, from the PC World forums

VoIP Switching

In his excellent piece ["How to Switch to VoIP Phone Service," November 2007], Mark Sullivan did not discuss VoIP's lack of a feature that is important to many potential VoIP customers: serious speed dialing. While it would be easy to include, no VoIP service provides anything but a rudimentary ability to speed-dial eight or so numbers. If VoIP could offer this on a sophisticated level, I'd switch in a heartbeat.

S.J. Estes, New York

What Your IT Department Wants You to Know

I'm an IT administrator and loyal subscriber to *PCW*. I greatly enjoy the reviews, tips, and info on new technology. I love the magazine. Then I read Michael Lasky's *Here's How* article in the January issue ["What Your Company's ITers Wish You Didn't Know," January]. C'mon, guys, it's hard enough to lock down workstations so users can't chat, download music and movies, and install apps on their own, and here this article is circumventing hours of »

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PCW Forum

frustrating testing. The article assumes that readers are savvy enough to make sure nothing malicious happens while they follow its tips, but that's not the case most of the time. I found a couple of users on our network running a P-to-P sharing app and another chatting on average 2 hours a workday. When asked how they circumvented our restrictions, they referenced your article. Needless to say, I was very disappointed that it was published. Please show a little respect to the IT professionals trying to protect their networks and their jobs from the dangers of such actions.

Juan A. Martinez, Orlando, Florida

Microsoft and Copy Protection

Once again, another page of letters (*PCW Forum*, January) complains about Microsoft and copy protection. I wonder how many of the whiners out there have any intellectual property of their own. Microsoft has expended five years of R&D and mega-man-hours on Vista to bring it to the point of release; Microsoft is in business to make money, not to expend its resources only to have its efforts stolen.

Barry Pearlman, Chesterfield, Missouri

Rating Tech Brands

Regardless of the product or brand, dissatisfied customers will exist ["Technology's Most (and Least) Reliable Brands," January]. The cause of dissatisfaction may be real or imaginary, depending on the situation. The statement that "I will never buy a _____ computer again" can be completed by filling in the blank with any name.

Joseph Carro, Atascadero, California

In your January issue, Hewlett-Packard presents itself as a concerned and caring company with the customer's interests at heart. Really? Why, then, does HP refuse to make available print drivers that run under Vista for its older printers and scanners? Does a company that really cares about the customer make such decisions? I think not.

Rob Spear, New London, Wisconsin

Warner Blu-ray Endorsement Boosts the Buzz at CES

Am I the only person who has a problem with Warner waiting until after the holiday season to make this announcement [find.pcworld.com/59839]? I admit that I'm in the HD DVD camp, and so this news stings quite a bit, but it's mostly because of the timing.

Tsprks, from the PC World forums

> Sony needs to be on the winning side with Blu-ray. I'm sure Betamax is still a bitter-tasting memory.
>
> *AZMac, from the PC World forums*

The timing of Warner's announcement is questionable and disappointing. Did it bank on thousands of HD DVD players and discs to be given as Christmas gifts, opened and enjoyed for all of one week, before sending a message to those people that they made the wrong decision and must buy those movies again in Blu-ray when their current/obsolete player craps out?

Glennrcompton, from the PC World forums

I remember format wars of the past. So far, I have resisted buying anything related to high-def until things shake out. I'll just cool my heels and wait.

Coastie65, from the PC World 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. ●

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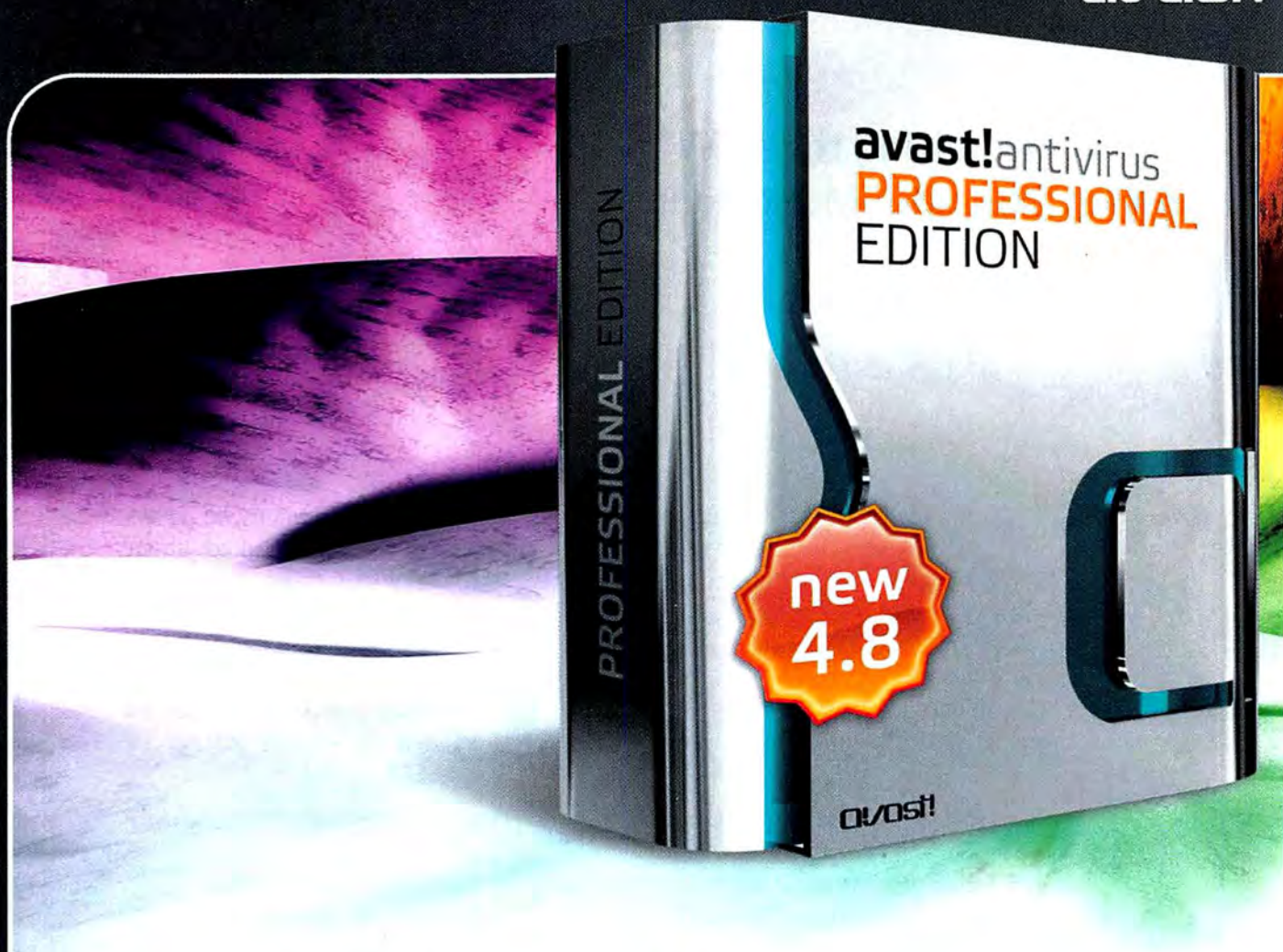

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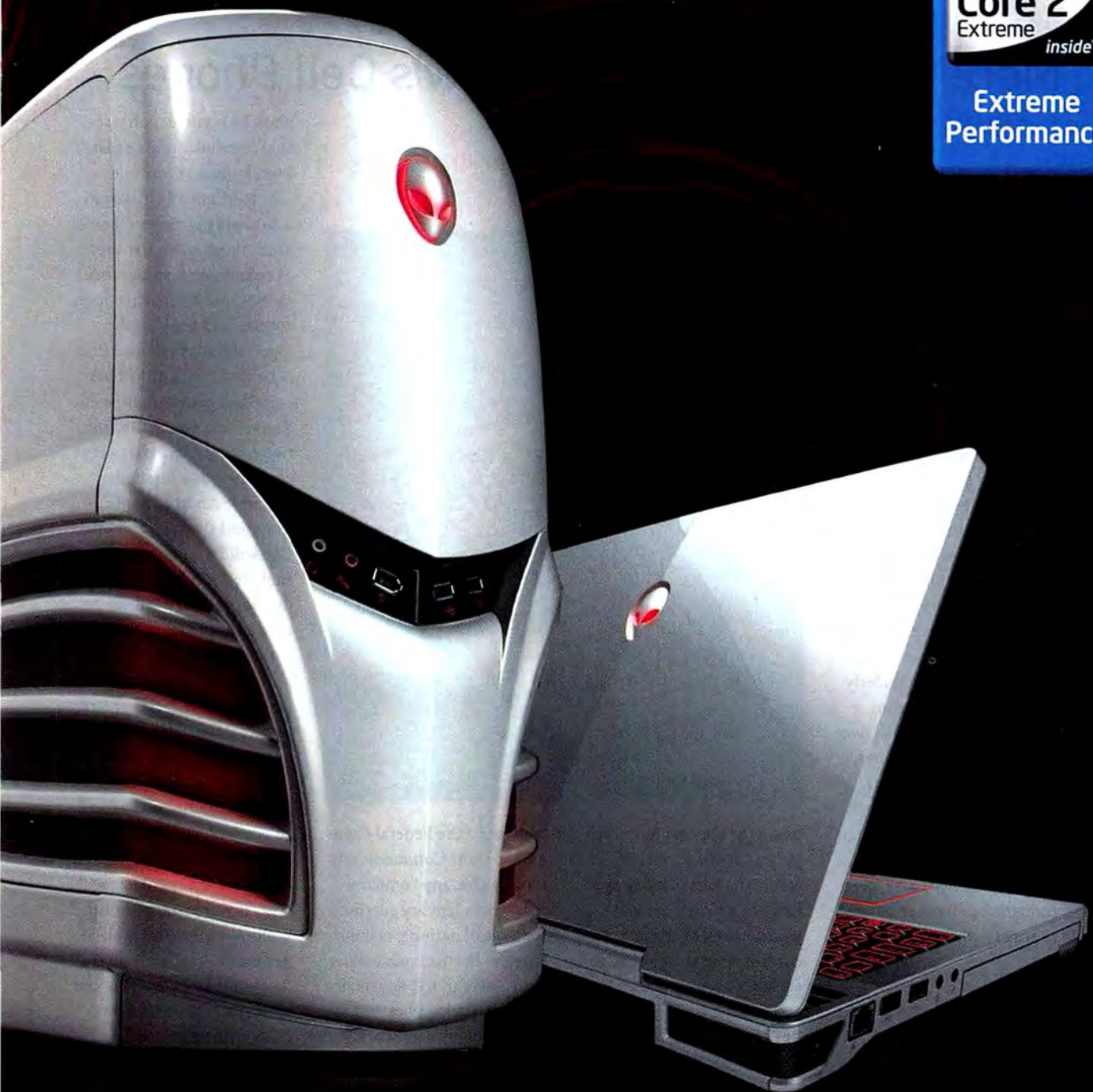

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Forward

More Options With Tomorrow's Cell Phones

BY GLENN FLEISHMAN

Install the software and services you want—plus, enjoy cameras, portable game consoles, and more with access to wireless networks.

IF YOU DON'T like the way the e-mail program on your PC works, you can replace it with one you like better. And when you need to add a new capability to Firefox, you can simply install an extension. But such flexibility doesn't apply to most cell phones, since cellular providers restrict how you use a device that's in your face—or pressed to your face—for sometimes hours a day.

That's about to change. In the coming year cell phones will start opening up, allowing users to customize their handsets' interfaces, run any program, and, most important, gain access to underlying hardware for finding directions, making calls over Wi-Fi, and taking pictures.

Eventually, experts say, you'll also see devices such as cameras, camcorders, and other gadgets gain access to cellular data networks, even though they'll never be used to make a phone call.

Google Leads the Way

Sparking the move toward cell phone openness is Google, flexing its billion-dollar muscles. Google's primary motivation, not surprisingly, appears to be putting more advertisements in front of more eyeballs. In a closed cellular world, wireless carriers can control what their subscribers see. Open up the system, and Google and other parties can dive in and begin to compete for your attention.

By mid-2007 Google and other Internet giants had convinced the Federal Communications Commission to require that any company that won a January auction for a set of national cellular wireless licenses must allow consumers to use any device and any legal application on that company's network. Furthermore, late in the year Google, along with three dozen partners, unveiled plans to construct an open-source cellular phone platform known as Android.

At least initially, Android is probably what you'll hear most about when the topic of cell-phone openness arises. Because Android is open source, and because the Open Handset Alliance that is behind the platform has agreed to permit remarkably deep access to the OS, any two Android-based devices could be quite dissimilar.

Simple Android applications and the standard interface will be common among such devices. But Android developers can produce unique approaches to navigating through menus and options, or they can allow you to choose from, or later install, dramatically different graphical user interfaces.

The approach is deeper than the "skins" often used to put a thin interface overlay over a piece of software. Instead, the experience will be as if you could boot up Windows Vista and replace Aero with an iPhone interface while still accessing the same programs and data.

Android will also allow application developers easy access to all of the hardware that may be installed on a

ILLUSTRATION: CHRISTOPH NEIMANN

25 YEARS OF PC WORLD: AUGUST 1991

'Uneven geographical coverage, crowded communications channels, and the low quality of most networks plague customers trying to make the cellular leap.' *—In August 1991, we point out the drawbacks of the still-new cellular phone; 17 years later, such kinks are long gone...or are they?*

phone, including GPS chips, Bluetooth, Wi-Fi, and cell radios, cameras, and other less common options.

Open to the Outside World

Another advantage of an open phone platform: It enables easier interaction with remote services that store or provide information. Consider a phone with a GPS chip, a camera, and a persistent cell or Wi-Fi network connection. Flickr, for example, could release a simple program that would stamp your photos with geographic coordinates stored in the picture's metadata, and automatically upload photos as they're taken. Certain cameras and hacks have similar functionality today, but no cell phone supports such a mashup out of the box.

But that sort of application won't come first. The initial wave of new software will likely tie together basic components—features like contacts, calendars, notes, to-do lists, alarms, ring tones, and other media. The Android software development kit (SDK), for instance, includes standard, accessible formats for basic contacts, calendar functions, and media. Contrast that to many current phones, in which the data sits in separate and often incompatible databases or proprietary formats.

Hate the programs that ship with your Android model? You can probably install new ones while making no other data changes.

The iPhone SDK may allow such access, given that the iPhone runs a version of Apple's Unix-based OS X operating system that's much like the desktop release, which lets program developers work with similar types of underlying user information, databases, and file storage.

As Charles Golvin, a wireless analyst with Forrester Research, observes, integrating tasks with today's phones is practically impossible. "You're listening to your voice mail, [and] you'd like to use the note-taking application on your phone to write notes to yourself, all in one standard workflow [as] if you were sitting at your desk," he says. "But nobody, bar none, has done an implementation of that workflow that an average person could figure out and use."

New Services

The next offerings will be new paid services. In most cases now, only your service provider—or its partners—can offer you paid cell phone services such as directions. An open platform allows any company to do so, which should lead to lower rates.

Location-based services, including navigation help, are controlled almost entirely by cell carriers. All cell phones are required to provide coordinates for E911 operators, but each carrier has chosen a different approach. Verizon built GPS chips into many of its handsets; however, only subscribers to its VZ Navigator service can access that data.

With an Android or other open phone running a GPS chip, cell-tower-based location mapping, or Wi-Fi, you could choose among several services that provide customized information. And Google, Yahoo, and other mapping and search sites will compete for your dollars.

THIS NAVIGATION APPLICATION was built with an early version of the Android mobile platform.

Having decent cameras on cell phones becomes possible, too. Carriers generally include only relatively low-resolution cameras, and then downgrade the quality of images sent over their data networks. To get a full-res image, you must connect the camera via USB to your PC or swap out a memory card.

With an open platform, handset makers will be motivated to include better »

PLUGGED IN EDWARD N. ALBRO

WARNER DUMPS HD DVD: Strike up the band and kiss a random stranger, because it looks like the High-Definition Format War is finally over.

WII DOESN'T MAKE YOU FIT: If playing Nintendo's console won't make me a champ, I'll just do it the old-fashioned way—with steroids and HGH.

NO LAPTOP BATTERIES IN LUGGAGE: As the new ban reveals, apparently it's not the terrorists we have to worry about, it's the workaholics.

AOL DROPS NETSCAPE SUPPORT: Damn corporate greed! Abandoning the browser a mere five years after it became utterly irrelevant!

CAN YOU SPELL 'LAWSUIT'? The makers of Scrabble force Facebook to drop its Scrabulous app, and word dorks are "apoplectic" (18 points).

U.S. TRAILS IN PRIVACY RANKINGS: But who's surprised? After all, Britney Spears and Lindsay Lohan are dragging down the scores for the rest of us.

cameras, and to allow the user to choose the image transfer method. It's slightly ridiculous that even a phone with Wi-Fi installed must use a USB connection to move a picture to a computer on a local network.

Finally, an open phone platform will give users access to such VoIP applications as Skype or The Gizmo Program operating natively and with few or no restrictions over either the Wi-Fi or cell data connection. Heavy callers could then avoid paying for expensive cell-calling minutes.

Many Wi-Fi-equipped phones, including a large number of Nokia models, can already make VoIP calls over Wi-Fi. Few, though, can yet use the cellular data network to make VoIP calls.

New Hardware Ahead

Such new software options sound great, but what about hardware? The "elevator pitch" on openness promises that any device will be able to access networks. That means you won't be stuck with your service provider's phones; if a phone doesn't harm a network, you can use it.

> It's slightly ridiculous that even a phone with Wi-Fi must use a USB connection to move a picture to a computer on a local network.

In the short term, handsets from outside the United States will likely see a growing presence on U.S. airwaves. The Nokia-dominated Symbian smart-phone platform, for example, owns the market worldwide but is installed on just a small percentage of U.S. cell phones.

Handsets won't be the only beneficiary. We will see gaming consoles, cameras, music players, and other consumer electronics being equipped with cell chips and cell access—even if they never make a phone call.

The Amazon Kindle is the first major example of such a device. The e-book reader includes a cell data modem that works only with Sprint's network, and its service bundles in the cost of network access as part of each item purchased.

"The folks from the consumer electronics side have been pretty vocal" about the benefits of such connectivity, says Forrester's Golvin.

Device manufacturers haven't bothered to integrate cell chips so far because if they did so they would have to work out complicated deals with a service provider and probably have to share their profits. But in an open-access world, Microsoft could build cell data access into a Zune, for instance, and simply prepay a carrier for airtime rather than make the carrier a full partner.

With the higher bandwidths to come from WiMax and the 700-MHz band, the inclusion of a cell radio in a camcorder or digital camera makes perfect sense. Instead of your having to offload pictures or video later, your files would transfer while or after you capture them.

"You'd never have to worry about the storage on your device," Golvin notes, and you could also become a live broadcaster "any time you felt like it."

Of course, if you have five or ten devices with cell phone chips, you won't want to pay $40 to $80 per month in access fees for every one of them. Network providers will have to be more flexible about the way they charge consumers.

The transition to a more open cell phone world will take a while—it'll be late 2008, even into 2010, before most of the benefits become fully available. Still, the device in your pocket certainly won't be like the average clamshell phone sold today. And if that phone doesn't do exactly what you want, you can change it. ●

HACKERS' DELIGHT

The iPhone's Not-So-Thrilling Jailbreak

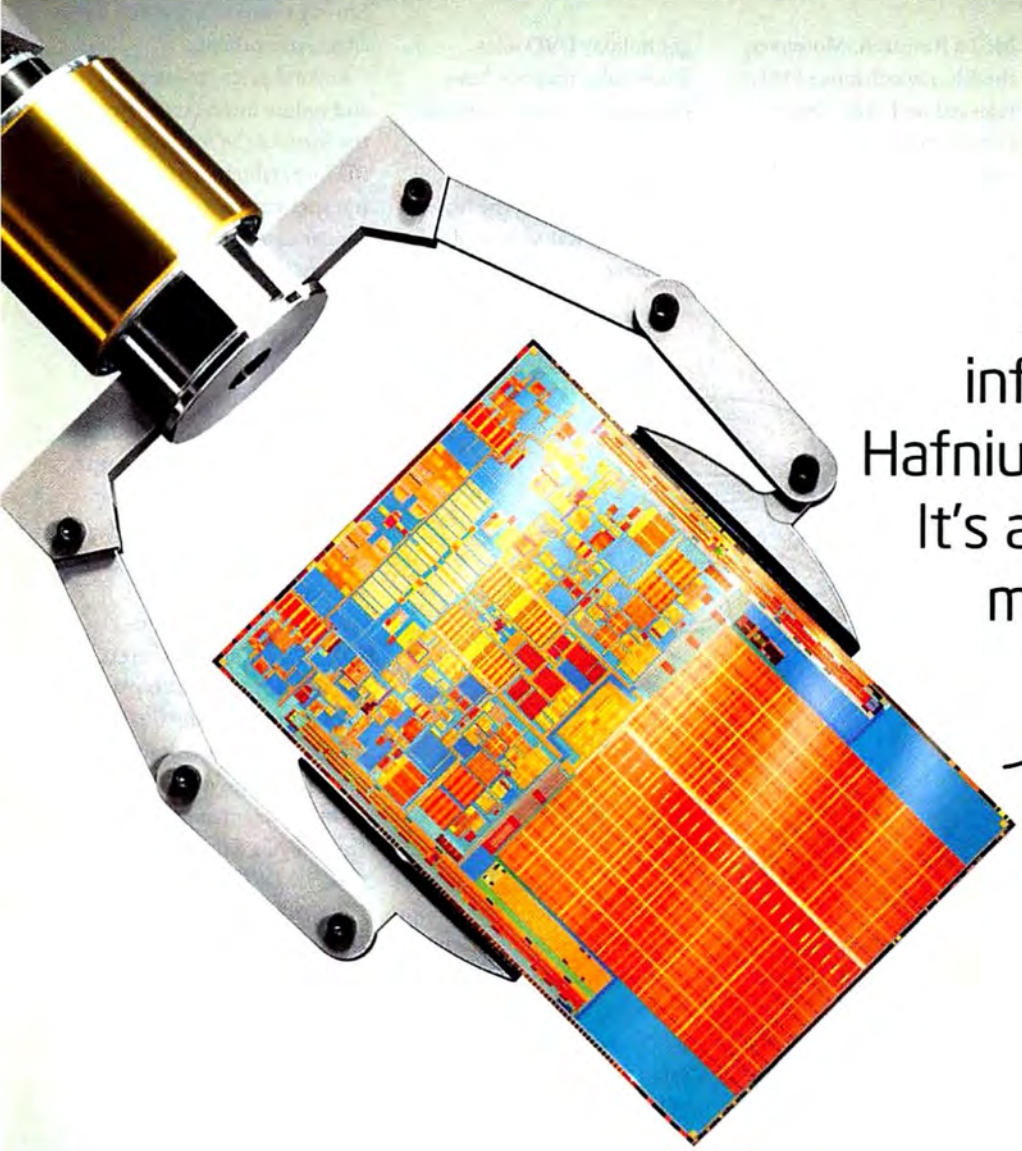
CURRENTLY THE IPHONE is the most famously locked cell platform, allowing no third-party programs to be installed. That should change by the time you read this, upon the release of Apple's iPhone software development kit (SDK).

Intrepid iPhone users are enjoying software released by crackers to "jailbreak" the phone—that is, install non-Apple-approved applications.

Most early jailbreak apps are free or fee-based and easy to install under Windows Mobile or on a BlackBerry. One more-sophisticated offering, the Navizon service, uses Wi-Fi access-point information and cell-tower information uploaded by users who carry GPS units to provide rough triangulation for others. It's closer to a next-gen, open phone app, since it uses a third-party application with access to location data both on the phone and from the Navizon servers.

What will become of jailbreaks once the SDK appears? Hard to tell. Apple hasn't detailed how it will allow programs to be installed, or to which features it will permit access.

INSTALL NAVIZON ON an iPhone through a jailbreak, and it'll tell you roughly where you are.



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The End of the High-Def DVD Format War?

With another huge movie studio throwing its support to Blu-ray, HD DVD may be dying.

THE ONGOING BATTLE to be the next-generation DVD format took a defining turn at the start of the year. On the eve of the annual Consumer Electronics Show, Warner Bros. announced that the studio, Hollywood's largest seller of DVDs (with 20 percent of the U.S. video market), would back Blu-ray Disc exclusively—meaning that 70 to 80 percent of Hollywood content will now be released in the Blu-ray format. The announcement may signal the beginning of the end for its rival, HD DVD.

Numerous consumer electronics companies, including Panasonic, Pioneer, and Sony, support Blu-ray; in addition, most of the movie studios are committed to releasing content in the new format, among them Disney, Lionsgate, MGM, Sony Pictures, and Twentieth Century Fox. Far fewer entities—primarily DreamWorks Animation SKG, Microsoft, Paramount Pictures, Toshiba, and Universal Studios—are currently loyal to HD DVD.

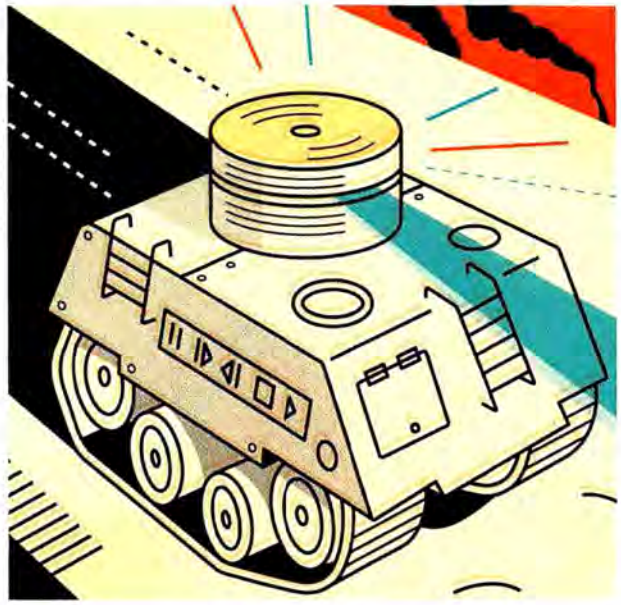
Until the announcement, Warner was the last studio releasing movies in both high-definition formats.

Behind Warner's Decision

Last fall, Warner said it was reassessing whether its dual-format strategy made sense. By the end of 2007, the sales numbers had spoken.

Movies on Blu-ray outsold those on HD DVD in the United States by nearly two to one last year, according to sales figures from Home Media Research. Moreover, the Blu-ray editions of titles released on both formats consistently, and often significantly, outsold their HD DVD counterparts.

But high-def disc sales don't tell the whole story.



Warner, like other studios, saw the writing on the wall for traditional DVD.

According to preliminary numbers from Home Media Research, last year's box-office receipts for the 20 top-grossing theatrical releases were up by 18 percent over 2006. By comparison, however, domestic DVD sales in the fourth quarter—when most of those movies came out on DVD—were down about 2 percent.

That drop may seem marginal, but given the increase in box-office revenue, Home Media Research and industry insiders expected stronger holiday DVD sales. Those sales may not have lived up to expectations because, at least in part, consumers were holding off buying discs until the high-def format war was resolved.

"[Warner] wants to make up for the declining market for DVD with high-def disc revenues, and that market wasn't materializing at the same rate as DVD [because of the two formats]," notes IDC research analyst Wolfgang Schlichting.

The End Game

Warner's announcement clearly deflated HD DVD supporters. Toshiba responded by slashing player prices; the cheapest one, the Toshiba HD-A3, now costs $150. While the cost of Blu-ray Disc players will continue to fall, it won't do so as precipitously as that of HD DVD players. Nonetheless, says Schlichting, Blu-ray needs to continue its aggressive pricing.

Beyond price, connectivity and online interactivity (in the form of the forthcoming BD Live, which provides Internet-connected features similar to what HD DVD already offers) will play a big role in Blu-ray's future.

With Warner joining its camp, Blu-ray clearly holds the content advantage. But that doesn't mean lights-out for HD DVD. The companies supporting HD DVD appear set to persist in the short term, and even Warner will continue to produce HD DVD discs through mid-2008. Player manufacturers LG and Samsung both plan to continue offering dual-format machines through the end of this year. And in addition to cutting prices, Toshiba has demonstrated new HD DVD features.

Regardless, notes analyst Thomas Coughlin of Coughlin Associates, Warner's move to support Blu-ray "may be the pivotal event that resolves the format war. It certainly changes the rules and the playing field."

IDC's Schlichting believes HD DVD has a future, albeit a murky one: "The logical way for HD DVD to survive is in dual-format products." But the price of those players, which sell from LG and Samsung for about $800, would have to fall quickly. "If price doesn't get there," he explains, "the future is bleak for HD DVD."

—Melissa J. Perenson

ILLUSTRATION: HARRY CAMPBELL

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Third Major Music Studio Set to Go DRM-Free

WARNER'S LARGE CATALOG, which includes such artists as Björk (on the Atlantic Records label), will now be sans DRM.

THREE DOWN AND one to go: Warner Music Group has joined EMI and Universal in agreeing to drop DRM (digital rights management) on the MP3 files it sells through Amazon.com. Sony BMG is still holding out for DRM, for now, but is expected to join its fellow Amazon participants sometime this year.

Industry executives hope that initiatives such as iTunes Plus and Amazon MP3—which omit the DRM locks placed on audio files by an earlier generation of music services—will encourage consumers to buy more music. Warner believes that giving consumers the assurance that the music they buy can play on any device will spur sales. It may also prompt buyers to look at other digital music player brands, ending Apple's dominance of that market segment.

Amazon launched its music download service last September, and now offers 2.9 million songs without copy protection from Warner, EMI, and Universal (as well as from 33,000 independent record labels).

By comparison, Apple has persuaded only EMI and a handful of independent music labels to let it offer their tracks in the DRM-free iTunes Plus format that it launched back in May of last year. The remainder of the songs available through iTunes come with various digital limitations.

Three formats—MP3 and AAC, which are both open formats, and WMA, a proprietary format owned by Microsoft—dominate the market for online music sales, leaving some consumers confused about what will play where. Now, with the locks off Warner's music, the MP3 format gets a boost—and music downloading moves one step closer to being entirely DRM-free.

—Peter Sayer

BETA WATCH EDWARD N. ALBRO

Fancast: Funky Video Stew

Comcast's free site is a strange but rewarding melange of all things video. It has streams of full episodes of current and old television shows from Bravo, CBS, Fox, NBC, and other networks. It has personalized TV listings based on your location and interests. It has blogs about TV, movies, and celebrities. And it has marketing for first-run movies, DVDs, and downloads. The stew is a bit confusing, but how can I complain about a site that streams *Arrested Development* and *The Bob Newhart Show*? fancast.com

WeGame: YouTube for Gamers

"I ain't sayin' she a gold farmer, but she ain't passin' on no blue armor," raps someone who's clearly not Kanye West in a witty mashup video produced in the World of Warcraft environment. That's probably the best thing so far in WeGame, which gives gamers the tools to create in-game videos and post them to the site for all to see. The early results are pretty uneven—lots of inside jokes funny only to veterans of those specific games. But, hey, the hit-and-miss nature of YouTube content hasn't exactly held that site back, and it's been around for three years. wegame.com

AOL Finance: In-Depth Company Intelligence

If you really want to dig into the finances and prospects of a company you're considering investing in (or applying for a job at), AOL's beta refresh of its finance site is a good place to start. AOL provides charts galore that allow you to look at different time frames and compare a firm with its rivals. The site also features news about the company you're researching from an impressive array of sources. And if you want advice from your peers, you can hit the site's message boards. beta.finance.aol.com

COMCAST'S NEW FANCAST site streams full episodes of dozens of new and old TV series, including the original *Star Trek*.

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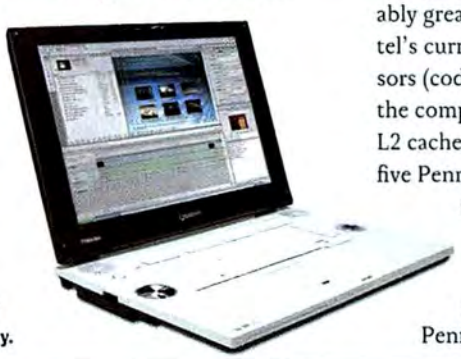
Intel: New Mobile Chips Run Faster and Longer

Refreshed Centrino laptop architecture aims to increase power and energy efficiency, and to speed up applications updated for the change.

EVERYONE WANTS a laptop that's faster *and* lasts longer on a charge, and Intel may have the chip that can drive it. The company's new line of mobile Penryn processors, a follow-up to last year's series of Penryn desktop processors, promises both increased speed and endurance, based on the improved efficiency of a new, thinner microprocessor architecture and a new instruction set for software.

The Penryn processors mark a refresh of the fourth-generation Centrino laptop platform (previously code-named Santa Rosa), which encompasses a laptop's processor, wireless components, and graphics subsystems. Intel will introduce hardware support for Windows Vista's DirectX 10 graphics late this quarter, and the fifth-generation Centrino platform (code-named Montevina) will come later this year.

The five new Penryn mobile processors—one released under the high-performance Core 2 Extreme brand and the other four as mainstream Core 2 Duos—use Intel's new 45-nanometer microprocessor architecture, which is more energy-efficient than the previous 65nm architecture. The increased density of transistors produced with the new process allows Intel to make either more per chip or smaller chips. These mobile processors offer clock speeds ranging from 2.1 GHz to 2.8 GHz; though the speeds aren't considerably greater than those of Intel's current laptop processors (code-named Merom), the company has raised the L2 cache size in three of its five Penryn processors to 6MB (up from 2MB and 4MB), which should help improve performance. Penryn's new SSE4



TOSHIBA'S Penryn-based G45-AV690 claims energy efficiency.

(Streaming Single Instruction, Multiple Data Extensions 4) instruction set can greatly boost some application tasks. Adobe, for example, is updating its Premiere Pro video editing application with SSE4 support. Only applications that are optimized for SSE4 will see big speed jumps, however. "If you look at raw power from Merom to Penryn, the performance gain isn't going to be huge," says Intel spokesperson Connie Brown. "If it's something that relies on the SSE4 instruction set, it's in the double digits."

In addition to speedier performance, the mobile Penryn chips also offer environmental benefits, such as more power-down states, including an energy-efficient "Deep Power Down" mode. Plus, the 45nm architecture uses no lead; Intel will also eliminate halogen from the process later this year.

Penryn Notebooks

Leading notebook manufacturers such as Fujitsu and Toshiba began releasing new mobile Penryn-based laptops in January.

Fujitsu's first three Penryn laptop models are the 15.4-inch A6120, the 15.4-inch E8410, and the 17-inch N6470. The all-purpose A6120, with a 2.1-GHz T8100 or 2.4-GHz T8300 processor, starts at $1249. The corporate E8410, carrying a 2.1-GHz T8100 or 2.5-GHz T9300 processor, starts at $1399. The entertainment-focused N6470 starts at $1499. Paul Moore, senior director of mobile product marketing for Fujitsu Computer Systems, says that Penryn's larger cache will result in faster performance.

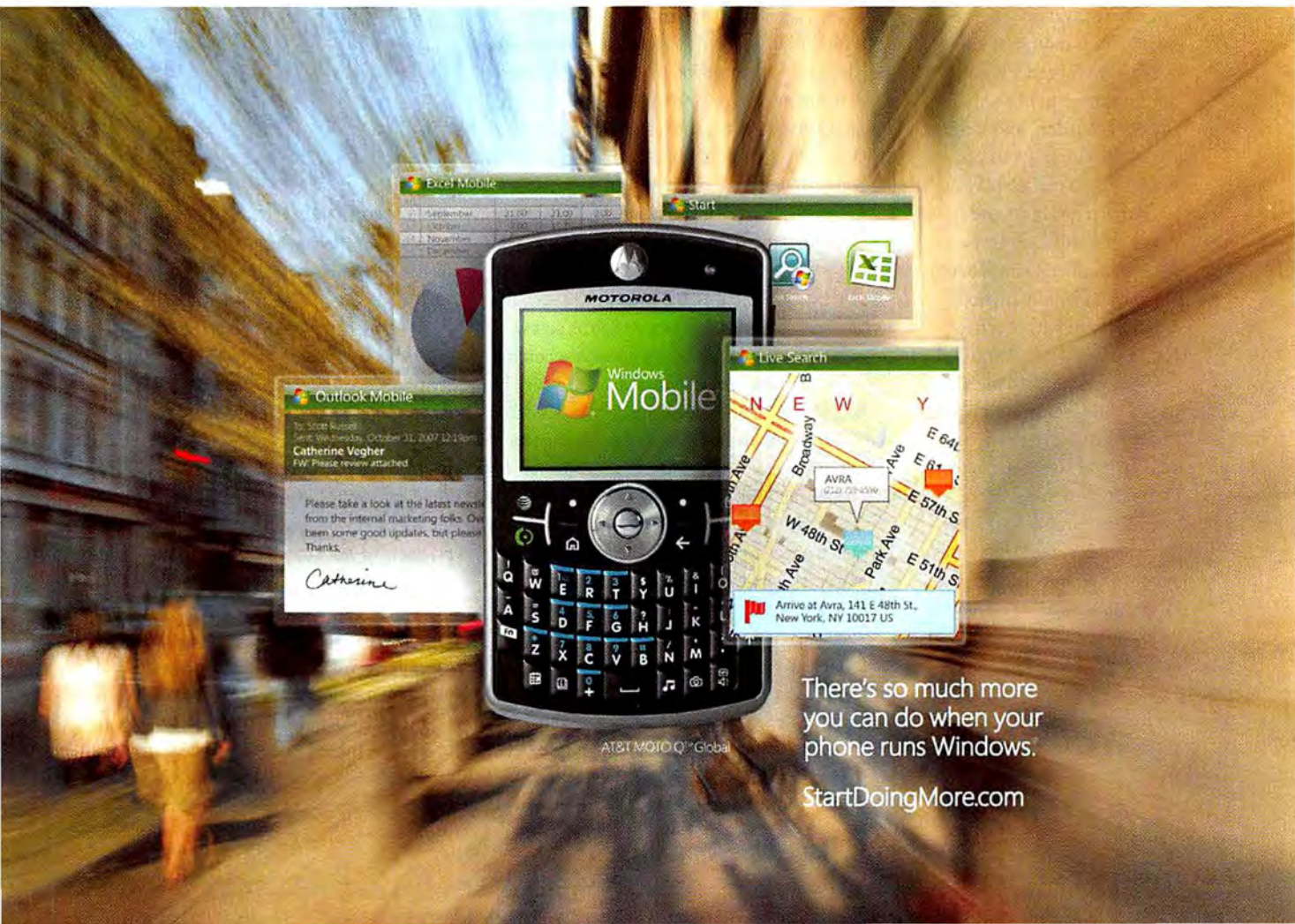
FUJITSU'S E8410 business laptop now offers Penryn.

Toshiba's Qosmio G45-AV690, the company's flagship entertainment laptop, includes a 2.5-GHz Core 2 Duo T9300 CPU. Whereas Fujitsu's Moore cites speed, Toshiba product marketing manager Mark Lackey says increased energy efficiency is Penryn's biggest boon.

Our review of a Penryn-based desktop PC (find.pcworld.com/59345; see also page 62) showed a performance boost over systems with Intel's previous high-end processor, but less than what Intel had claimed.

Penryn-based laptops were not available at press time for lab testing. Keep an eye on PCWorld.com for test results as we get them.

—Narasu Rebbapragada



Companies Collaborate for Cheaper, Better LCDs

WHEN TECHNOLOGY becomes too pricey to make, rivals team up. Witness events in the highly competitive flat-panel display industry.

Given that the market for LCD TVs grew from 161 million units in 2003 to an estimated 192 million in 2007—and given that a new LCD plant can cost upward of $1 billion—companies increasingly are collaborating. In recent months, five companies announced such plans, while a sixth announced a huge new investment.

Hitachi, Canon, and Panasonic have forged a wide-ranging agreement to share the cost, burden, and benefits of developing and producing flat-panel displays: This quarter, Canon and Panasonic will each buy a 24.9 percent stake in Hitachi Displays, a wholly owned subsidiary of Hitachi that already makes small and medium-size LCD panels. Meanwhile, starting in April, Sharp and Toshiba will buy screens and semiconductor chips from each other to keep their supplies steadier.

Only Samsung Electronics seems to be bucking the collaboration trend. The company plans to invest $2.2 billion in a new LCD production line at a factory it opened with Sony—but Sony will not be investing in the new line.

—Martyn Williams and Dan Nystedt

GEEKTECH TOM MAINELLI

Build a PC So Small It'll Fit in a Drive Bay

I'VE BUILT MY share of small-form-factor PCs over the years, but Via's new Artigo kit is by far the tiniest—and most interesting—I've laid hands on. The $300 bare-bones kit provides the starter hardware for a fully functional PC that's small enough to fit in a desktop PC's 5.25-inch drive bay, opening up a world of geeky possibilities.

Hands on with Via's new Artigo DIY PC kit, based on the credit-card-size Pico-ITX motherboard form factor.

The Artigo is based on Via's Pico-ITX motherboard form factor. Via has been pushing this mobo format—which is slightly larger than a credit card—as an alternative to bigger products that use AMD's and Intel's notably faster processors. The Epia PX–branded motherboard included here uses Via's VX700 chip set and UniChrome Pro II graphics chip. The Artigo kit also includes a preinstalled 1-GHz Via C7 NanoBGA2 processor and fan.

The Epia PX is a marvel of miniaturization. Within its 10cm-by-7.2cm confines Via manages to cram in everything from a SODIMM socket (underneath) to an ethernet controller with an RJ45 jack (in the back) and support for four USB ports (up front). Oh, and you also get PATA and SATA connectors, as well as audio jacks for speakers and a microphone.

For the Artigo kit, go to find.pcworld.com/59869.

Piecing It All Together

You don't so much build the Artigo as screw together its various lilliputian pieces according to the detailed instructions. You need a stick of 533-MHz SODIMM DDR2 memory (I bought a 1GB stick for about $25) and a 2.5-inch notebook hard drive (my 120GB, 5400-rpm unit was on sale for $99). The build wasn't effortless—my hands felt downright oversize as I struggled to piece together the parts and handle the extremely small screws—but in less than an hour I was plugging in the power brick and spinning up the unit for the first time.

Since the Artigo lacks an optical drive, you'll need to connect one through USB to install the OS. I loaded Windows XP without a hitch, and found the unit to be a reasonably capable performer for basic tasks such as Web surfing, e-mail, and word processing. Unfortunately, the graphics chip struggled to play browser-based Flash videos and limited my screen resolution to a paltry 1024 by 768. The chip also supports only DirectX 7, meaning—among other things—no Windows Vista (which needs at least DX9).

Other negatives include a too-loud CPU fan, a smudge-prone black case finish, and the integration of a VGA port instead of a DVI connection (the box includes a DVI accessory, but you can't use it with the Artigo chassis).

Overlooking the Artigo's limitations is relatively easy when you consider the possibilities. I could imagine using it as a secondary PC in the kitchen, attached to the underside of a cabinet (along with a small LCD monitor) and using a wireless keyboard and mouse. Or you could use it for software testing, pairing it with a KVM switch to effectively replace the virtual machines I've discussed in the past with real-life hardware. Or it could serve as the Linux desktop you've long thought about building.

VIA'S $300 ARTIGO: a small-form-factor, bare-bones computer kit.

The most intriguing use for me is the potential to pair the Artigo with Microsoft's excellent Windows Home Server OS. Alas, at press time Via was still working on a BIOS fix for the two products to work together. The Artigo would make a fantastic low-power server (as a desktop, it pulled fewer than 20 watts under normal usage during my tests). Plus, in that capacity its graphics weaknesses wouldn't be an issue, although I might need a larger hard drive.

It would be extremely cool—and practical—to have my home server living inside my desktop PC. And if it's on the inside, I'll avoid those fingerprints on the shiny black case.

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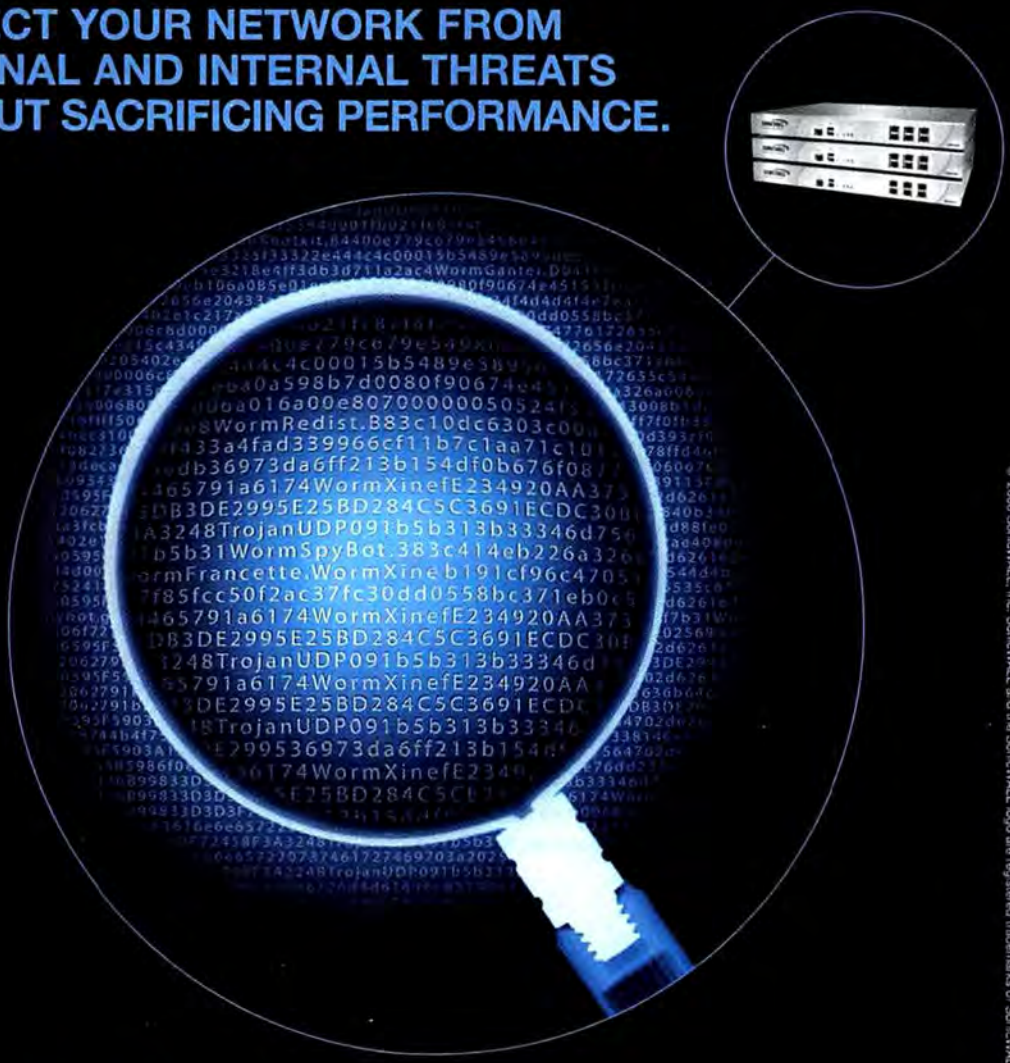

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Is Apple's Slim Laptop Too Light on Features?

WHEN STEVE JOBS introduced the MacBook Air at Macworld Expo in January, he said that manufacturers of other thin-and-light laptops compromised too much in making their machines sleek. But nobody else in the industry would dream of making the compromises that the Air does.

Some of the omissions on the $1799 Air, which should start shipping by the time you read this, are only mildly annoying: It has just one USB port and no optical drive, for example. But some of the other AWOL items could drive you nuts. The Air offers no ethernet port, the biggest hard drive available is only 80GB, and—potentially crippling for road warriors—you can't remove the battery.

Despite (or perhaps because of) what's missing, the Air feels and looks great. It wasn't immediately available when Jobs announced it, though; check PCWorld.com for our hands-on tests.

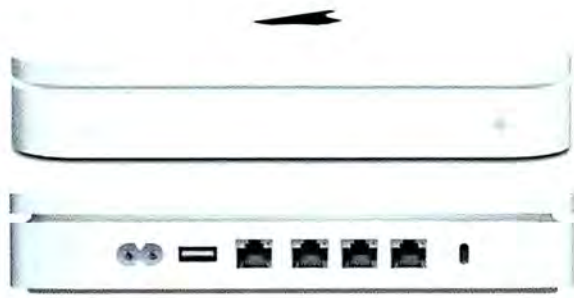
—Harry McCracken

THE MAGSAFE CORD is recessed into the underside, and the adapter snuggles up against the side.

Thickness: 0.16-0.76 inch
Width: 12.8 inches
Depth: 8.94 inches
Weight: 3 pounds

ON THE SIDE: a headphone jack, one USB 2.0 port, and a Micro-DVI port.

THE KEYBOARD IS full-size and backlit, with an ambient-light sensor that automatically adjusts the brightness of the keyboard and the screen. Since the trackpad supports multitouch gestures, you can scroll with two fingers, as well as pinch, rotate, swipe, tap, double-tap, and drag to your heart's content.



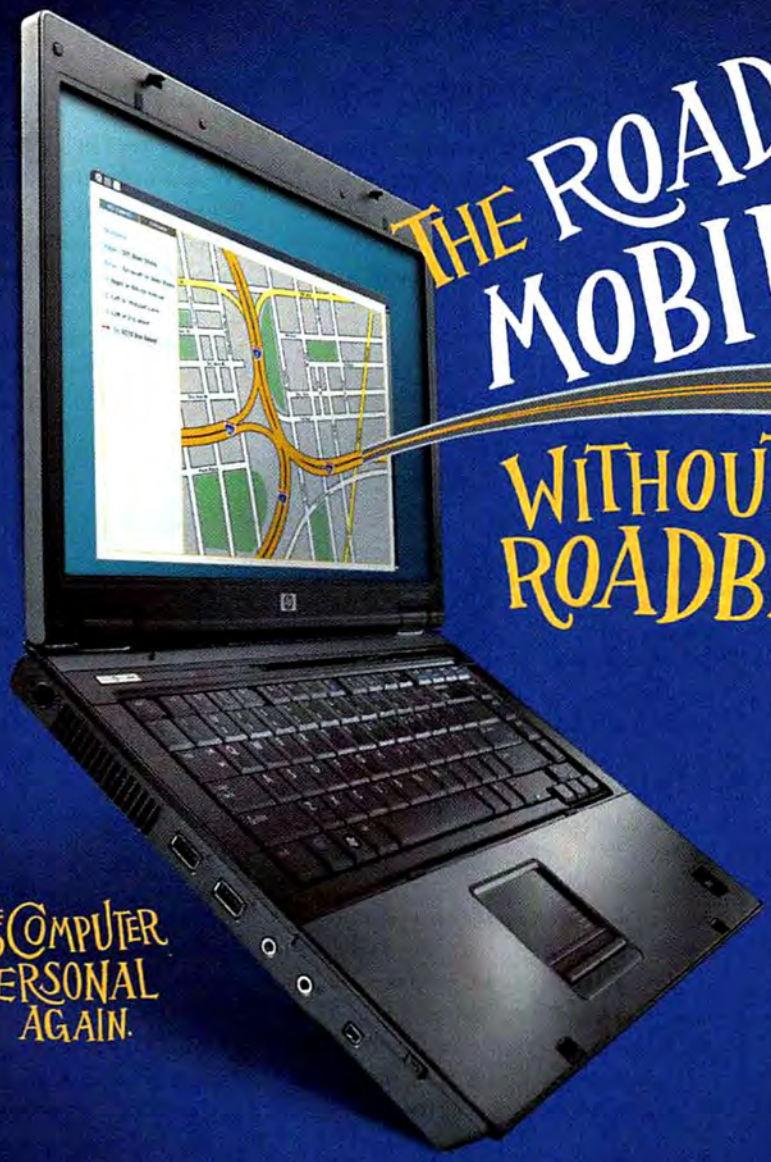
ANNOUNCED AT THE same time as the MacBook Air, Time Capsule is a backup drive designed to save your data wirelessly using the automated Time Machine feature in Mac OS 10.5 (Leopard). A 500GB version will sell for $299, while a 1TB model will be $499. Given the MacBook Air's smallish 80GB hard drive, you'll need it.

PHOTOGRAPHS: COURTESY OF APPLE

AMD

Turion 64 X2
MOBILE TECHNOLOGY

HP recommends Windows Vista® Business.



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Is Your TV Still Analog? No Fear, Help Is on the Way

DO YOU STILL get your TV reception via rabbit ears or a rooftop antenna? If so, you have a little over a year to procure a digital-to-analog converter box and prepare your television for the impending digital revolution. As mandated by federal law, on February 17, 2009, over-the-air television broadcasts will switch from analog to digital.

LG and Philips showed off some of the first converter boxes at this year's Consumer Electronics Show in January, and the devices will go on sale for $59 to $69 in the first quarter of the year. To help ease the transition, the federal government will issue a $40 coupon subsidy for the purchase of a box, upon your request (visit www.dtv2009.gov or call 888/DTV-2009).

If you've already upgraded to a high-def TV, you won't be affected. Nor will you feel an immediate impact if you are a cable or satellite TV subscriber: The FCC requires cable and satellite providers to continue sending an analog signal until 2012. Just don't let Grandma's TV go dark next year.

—Melissa J. Perenson

ZENITH'S DTT900, one of the first converter boxes to ship.

GADGET FREAK DAN TYNAN

Auto Technology: Same Gear, New Services

YOU MAY DRIVE a sporty new car with the latest in gizmotronics, but to your kids (and grandkids) it will look like a Stanley Steamer. At last November's Los Angeles Car Show, eight major carmakers rolled out their visions of how vehicles will look in 50 years. Trust me, these 2057 models really look nothing like your old '57 Chevy.

For example: The Nissan OneOne will pick up your dry cleaning or drop the children off at school—no driver required. GM-OnStar's ANT will feature an onboard quantum computer, use car-to-car communications to avoid traffic jams, and fold up like a piece of origami when parked.

> For this year's cars, personal navigation and search services will be in the driver's seat.

Even if none of those wild scenarios come to pass, our cars certainly will get smarter and better connected—they're already on their way. But the biggest changes to car tech for 2008 will be near your seat, with better Web connectivity and access to more data services.

GPS Plus

Instead of new auto gear, we'll see more services delivered to the gear we already have, says Eric Larsen, director of marketing for Mio Technology. For example, Mio's Digiwalker C720t GPS ($599, mio-tech.com) device can now deliver real-time traffic updates from Clear Channel. Ford's 2009 Lincoln MKS sedan will soon offer Sirius Travel Link, which serves up traffic, weather, fuel prices, and movie listings to the car's built-in navigation system.

Every GPS device I've ever tested has had the same flaw: Its database of local banks, restaurants, and gas stations is way out-of-date. Dash Navigation's Express GPS fixes that by maintaining a permanent Internet connection using either a cellular network or Wi-Fi access points. Tell the Express to find the nearest pizza joint, and it will run a Yahoo Local search, then display the freshest possible info. It can also pull weather, news, movie listings, and custom RSS feeds straight off the Net.

Even groovier, the Express turns your car into a sensor for real-time traffic data. So if you run into a slowdown on I-40, say, the Express transmits your sudden loss of velocity to the Dash servers, which alert other Dash drivers to prepare for delays or select alternate routes. If no other Dash users are on your stretch of highway, the device employs historical traffic patterns to predict delays, says Gina Bender, director of communications for Dash (dash.net). The Dash Express should be available by the time you read this for $600 plus a monthly service plan.

Deals on Wheels

That's only the beginning. Over the next few years, GPS services will evolve from providing simple location data to supplying personalized recommendations on things happening around town, says Mio's Larsen. Instead of merely finding the closest pizza place, you'll be alerted when your favorite band is playing nearby and have the chance to buy tickets en route.

Of course, all this stuff isn't free. Real-time traffic and news costs $5 to $15 a month now, depending on the service provider and your plan. Concierge services will likely cost more. IDC estimates that location-based services will generate more than $3 billion in revenues by 2010, and advertising is likely to account for a sizable chunk. For example, you might receive offers for a free latte when nearing a Starbucks, says Larsen. The only question is whether such services will drive you toward better decisions or merely drive you crazy.

ILLUSTRATION: EDWIN FOTHERINGHAM

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Acer recommends Windows Vista® Ultimate.

AMD Turion 64 X2 MOBILE TECHNOLOGY

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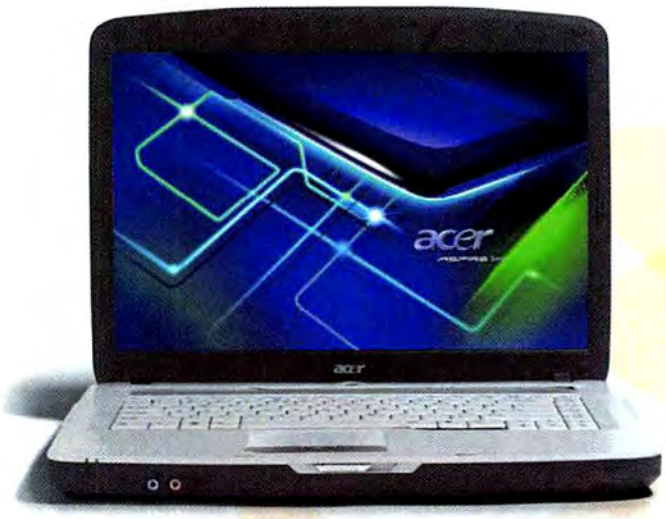

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- Genuine Windows Vista® Home Premium
- 1GB DDR2 667 SDRAM
- 120GB[1] hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display, Acer® CrystalBrite Technology
- NVIDIA® GeForce® 7000M graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- One-year limited warranty[2]

empowering technology

Acer Empowering Technology

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

Acer Aspire 5520-5908

$599

AMD Athlon™ 64 X2 Dual-Core Mobile Technology TK-55
Genuine Windows Vista® Home Premium
(LX.AJ70X.027)

Acer AL2616Wd

- 25.5" wide-screen TFT LCD
- 1920 x 1200 native resolution
- 800:1 contrast ratio
- 1600:1 dynamic contrast ratio
- 178° horizontal viewing angle
- 178° vertical viewing angle
- VGA, DVI (HDCP) signal connectors
- 500 cd/m² brightness
- 5ms gray-to-gray response time
- Internal power adapter

$599

(ET.G16WP.001)

Acer AL2416WBsd

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

$399

(ET.F16WP.B02)

Acer recommends Windows Vista® Home Premium.

Acer® Aspire® 7520

- AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-58
- Genuine Windows Vista® Home Premium
- 2GB DDR2 667 SDRAM
- 250GB[1] hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 17.0" WXGA+ (1440 x 900) TFT display, Acer® CrystalBrite Technology
- NVIDIA® GeForce® 8400M graphics
- 802.11b/g WLAN, Bluetooth®, gigabit LAN, V.92 modem, integrated webcam
- One-year limited warranty[2]

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

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

Acer CrystalEye
Enjoy all the potential of video conferencing with the integrated Acer CrystalEye, simple to use and compatible with internet-based video and voice communication services.

Acer Bio-Protection
Gain an extra layer of security while eliminating the need to remember passwords and PINs with the Acer Bio-Protection fingerprint reader.

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

Acer Aspire 7520-5823
$949
AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-58
Genuine Windows Vista® Home Premium
(LX.AN30X.090)

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

800-571-2237 - acer.com/us

Acer® LCDs

Acer AL2216Wbd

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

$239

(ET.2216B.0D0)

Acer AL2016WBbd

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

$219

(ET.D16WP.B04)

Acer AL1917W Abd

- 19" wide-screen TFT LCD
- 1440 x 900 native resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

$199

(ET.C17WP.A04)

Acer AL1917 Cbmd

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

$229

(ET.1917B.0DC)

Acer AL1916W Ab

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

$195

(ET.1916B.W08)

Acer AL1916 Cb

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

$219

(ET.1916B.00C)

Acer AL1717 Fbd

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

$189

(ET.B17RP.F04)

Acer recommends Windows Vista® Home Premium.

Acer® Aspire® 7520

- AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-52
- Genuine Windows Vista® Home Premium
- 2GB DDR2 667 SDRAM
- 160GB[1] hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 17.0" WXGA+ (1440 x 900) TFT display, Acer® CrystalBrite Technology
- NVIDIA® GeForce® 7000M graphics
- 802.11b/g WLAN, Bluetooth®, 10/100 LAN, V.92 modem, integrated webcam
- One-year limited warranty[2]

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

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

Acer CrystalBrite
A technology that delivers enhanced video performance for brilliant images, making it ideal for sophisticated applications such as HDTV and digital games.

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

Acer Aspire 7520-5115
$949
AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-52
Genuine Windows Vista® Home Premium
(LX.AN30X.010)

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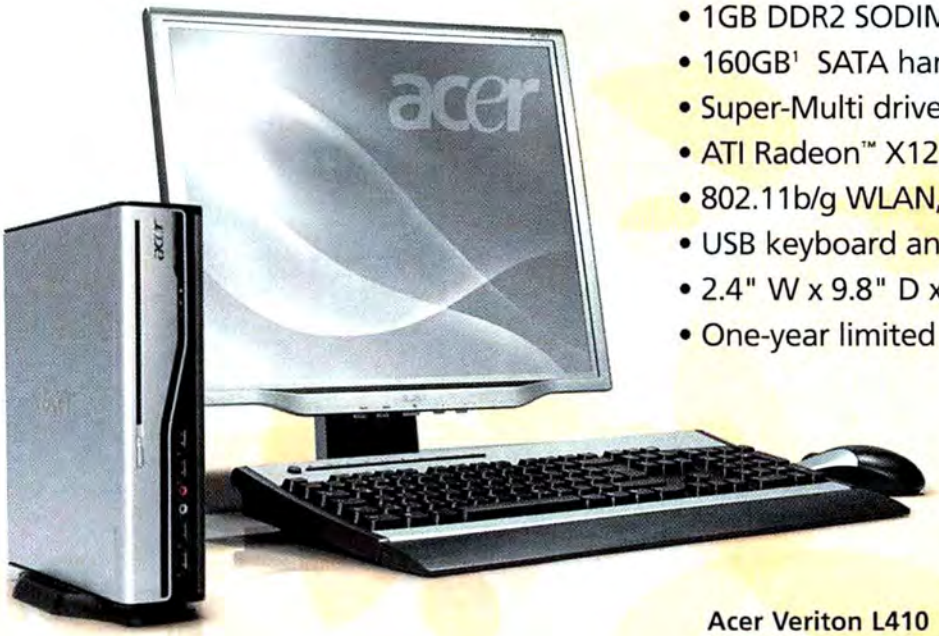
Acer® Veriton® L410

Display sold separately.



- AMD Athlon™ 64 X2 dual-core processor
- Genuine Windows Vista® Business or
  - Genuine Windows® XP Professional
- 1GB DDR2 SODIMM
- 160GB[1] SATA hard drive
- Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- ATI Radeon™ X1250 graphics solution
- 802.11b/g WLAN, gigabit LAN
- USB keyboard and mouse
- 2.4" W x 9.8" D x 7.9" H
- One-year limited warranty[2]

empowering technology

Acer Veriton L410

$499

AMD Athlon™ 64 X2 dual-core processor 4200+
Genuine Windows Vista® Business
(VL410-UD4201C)
Microsoft® Office Ready (60-day trial)[3] and
CD with Genuine Windows® XP Professional[4] or
Genuine Windows® XP Professional
(VL410-UD4201P)

Acer AL1716 Fb

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

$185

(ET.B16RP.F02)

Acer AL1516 Ab

- 15" TFT LCD
- 1024 x 768 native resolution
- 600:1 contrast ratio
- 130° horizontal viewing angle
- 100° vertical viewing angle
- VGA signal connector
- 250 cd/m² brightness
- 12ms response time
- Internal power adapter

$169

(ET.1516B.000)

Acer recommends Windows Vista® Business.

Acer® Veriton® M410

- AMD Phenom™ quad-core processor
- Genuine Windows® XP Professional
- DVD-Dual drive (DVD+/-RW)
- ATI Radeon™ X1200 graphics solution
- Gigabit LAN
- Keyboard and mouse
- One-year limited warranty[2]

Acer Veriton M410
$799

AMD Phenom™ quad-core processor 9600
Genuine Windows® XP Professional
(VM410-UF9600P)
3GB DDR SDRAM and 320GB[1] SATA hard drive

Acer Veriton M410
$699

AMD Phenom™ quad-core processor 9500
Genuine Windows® XP Professional
(VM410-UF9500P)
2GB DDR SDRAM and 250GB[1] SATA hard drive

Acer Empowering Technology

Acer eLock Management
Acer eLock Management locks and unlocks storage media with password protection for additional security.

Acer ePerformance Management
Acer ePerformance Management optimizes performance to make the most of your computer's power.

Acer eRecovery Management
Acer eRecovery Management is an easy-to-use utility to create backups or restore from your archives.

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

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

Display sold separately.

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

acer

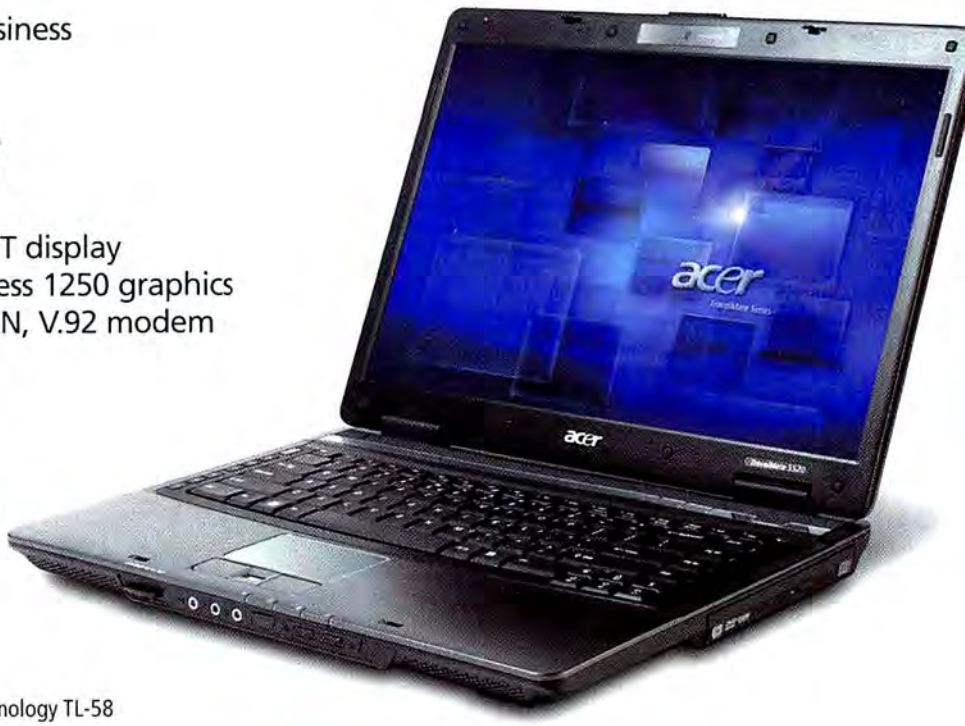
Acer recommends Windows Vista® Business.

ATI RADEON GRAPHICS

AMD Turion 64 X2 MOBILE TECHNOLOGY

Acer® TravelMate® 5520

- AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-58
- Genuine Windows Vista® Business
- 1GB DDR2 667 SDRAM
- 120GB[1] 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
- Integrated ATI Radeon™ Xpress 1250 graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- Fingerprint reader
- One-year limited warranty[2]



Acer TravelMate 5520-5678

$699

AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-58
Genuine Windows Vista® Business
(LX.TKU0Z.003)

empowering technology

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 Acer makes, and each comes with a one-year standard limited warranty.[2] It includes hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. Extra protection is available with one of these upgrades:

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

$99

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

It's a tough world out there, and accidents do happen—sticky spills, dangerous drops, nasty knocks—which is why you should consider the Total Protection Upgrade. It runs concurrently with the limited warranty[2] and limited warranty extension and covers the cost of a replacement unit if your covered notebook cannot be repaired.

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

$199

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

[1] When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.
[2] For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.
[3] The 60-day trial of Microsoft® Office Ready is available with Genuine Windows Vista® Business only, not with Genuine Windows® XP Professional.
[4] Genuine Windows® XP Professional can be installed in place of, not in addition to, Genuine Windows Vista® Business.

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acer

The 10 Most Annoying Types of Online Ads

BY TOM SPRING

TODAY'S ANNOYING WEB ads are a mix of Big Brother and Madison Avenue, and range from old-fashioned in-your-face marketing to tactics that are downright mean. Many of them probably have you longing for the days when the peskiest ads simply promoted an X-10 wireless camera. (But remember that, without advertising, we'd all have to pay a nickel every time we wanted to watch a YouTube video of people riding down escalators in shopping carts.)

1. Old-School Attention-Grabbing Ads: I recently had trouble focusing on a CNN.com story, and I realized that a LowerMyBills ad blinking, jiggling, and dancing beside the article was distracting me. Although experts say such obtrusive ads are giving way to subtler types tailored to the interests of individual Web users, CNN.com doesn't seem to be in on the trend.

2. Noisy Ads: *Obnoxious* isn't quite strong enough an adjective to describe ads that play audio on my PC without warning. Blame both the advertiser and the Web site (sites set policies for the types of ads they accept). Such ads may just *seem* to be ubiquitous: The online-advertising company EyeWonder says that about one out of ten video advertisements it creates will initiate audio when you roll your pointer over the ad.

3. Floating Ads: You sometimes need the dexterity of a video-game pro to chase down the Close button on ads as they float across your display. An advertising insider (who spoke on condition that he not be identified) confirmed what you probably already suspected: Advertisers deliberately make it difficult to close these Flash-based animated floating ads or "page takeovers" (including some that run on PCWorld.com). "These advertisers know they are getting away with something. And that 'something' is not about making your life easier."

4. Triple Threat—The Floating Video Sales Pitch: In one online Toyota ad, a pint-size pitchman waltzed out from the lower-left corner of my screen and started yakking. Talk about an annoying car salesperson.

They're well beyond bells and whistles: Ads now flash, slither, and sometimes deliver malware to get your attention.

5. Mouse-Over Land-Mine Ads: Sometimes mousing over the content on a Web page can be like a game of Minesweeper: One wrong move, and—*pow!*—ads start springing up out of nowhere. You can thank a company called Vibrant Media; its IntelliTXT contextual advertising technology lets sites display as many as eight keyword pop-overs linked to text content. And while you can kill traditional pop-up ads pretty easily by pressing <Alt>-<F4>, IntelliTXT ads always reside on the Web page, waiting to pounce—a nasty trick that can make reading the page's content difficult.

6. Viral Ads: Some viral ads can be fun. My favorite—"Will It Blend?"—pulverizes an iPhone and other objects in Blendtec blenders. The idea here is to make ads so compelling that a viewer wants to share them with friends. The only problem is that for every interesting viral ad at least a dozen others are annoying duds. Example: Sony hired a marketing firm, Zipatoni, to create a blog called "All I Want for Xmas Is a PSP"—full of tributes to the portable game console and links to YouTube videos—and pass it off as the creation of a fan named Charlie. The ploy backfired when word got out that the blog and Charlie were fakes. »

25 YEARS OF PC WORLD: APRIL 2002

"Maybe your browser should have a McDonald's-like sign that reads 'Over 24 Billion Served.' That's the number of ad impressions—ads loaded into Web browsers—generated in just one week."

—By 2002, we found Web ads annoying enough to run a how-to on nuking them—including those on our own site.

PHOTOGRAPH: ROBERT CARDIN, ILLUSTRATION: ZOHAR LAZAR

7. Expanding Ads: Another increasingly popular type of ad looks at first like a regular square or rectangle on the side or top of a Web page—but if you mouse over it, the ad expands, taking over the browser window until you move your mouse away, whereupon it slithers back to its original, unassuming format. I don't know about you, but I'm never happy when I accidentally roll my pointer over such a spot on a page and a Flash animation pretends to peel back the page to show me an ad. (*Nostra culpa:* PCWorld.com runs these too.)

8. Personal and Tailored Ads: Companies such as recent Google acquisition DoubleClick track your Web whereabouts and likely know more about your surfing habits than you do. Advertisers can use the digital dossiers these companies create to send users ads based on their online activities. To counter this trend, many privacy activists are urging the Federal Trade Commission to create a "Do Not Track" registry that would allow consumers to opt out of being tracked by online marketers.

9. Malware-Laced Ads: Typically, dangerous banner ads contain a Flash file that silently installs a Trojan horse or backdoor program on vulnerable Windows systems. These ads often appear on popular sites such as MySpace, which get them from third-party ad networks acting as middlemen between sites and advertisers. The ad networks may not even realize they are delivering bad-apple ads. The ads are particularly scary because, unless you have your security set to unusually high levels, they require no interaction from you.

10. Bait, Switch, and Infect Ads: A related type of online ad entices you to a booby-trapped Web site with offers of free software or the like. These too can appear on perfectly legitimate sites. Recently, for example, the *Arizona Daily Star* in Tucson reported that its site had run such a "maliciously coded online advertisement" that had been paid for with a fraudulent credit card.

The lesson: Check your security settings and handle your mouse with care.

SKEPTICAL SHOPPER YARDENA ARAR

Such a Deal: Sites for Bargain Hunters

Bargain-hunting sites cater to many preferences—and the best have reality checks in the form of user input.

FOR YEARS, I'VE used the Web to research prices. But I've learned to love sites that bring bargains to you.

Deal sites are great when you're not on a deadline—when you're willing to wait for the right price on a wish-list item, or a product you might not even have realized you wanted. I found my HDTV through a specialized deal site—a "Black Friday" site called BFAds (bfads.net) that sent subscribers e-mail about "Hotter than Black Friday" deals throughout the holidays.

But plenty of year-round sites track special sales, coupons, Sunday-circular ads, and the like. Some, including Dealcatcher and TechBargains, are huge, professional-looking operations that track lots of products, product categories, and retailers. Others, such as BFAds partner site Passwird.com, are more like blogs. Some are community-based, like Dealio, or search engines, such as Clipfire, which retrieves deals from other deal sites.

How do these sites learn about bargains? Are the deals really deals? After checking out a couple dozen sites, I found myself drawn to those with good notification and community features.

Deals in My Inbox

Notification is big for me because I'm too lazy to fire up my browser to keep tabs on much of anything on a day-in, day-out basis. I'd much rather peruse my inbox, or the headlines in my RSS reader.

Newsletters and RSS feeds are most useful on specialized sites. For instance, SpendFish, which has both a newsletter and an RSS feed, tracks only deals on Amazon. Plus, a couple of years ago, its operator posted a list of other deal sites (see find.pcworld.com/59793). While not complete, the list is still a good resource; be sure to look at the reader comments.

If you know what you're looking for or where you want to shop, you'll like sites that let you customize your notifications. On DealCatcher, for example, you can set up Deal Alerts based on keywords such as the name of a vendor, a product category, or a retailer. You can opt for alerts whenever a qualifying deal comes in, or one e-mail a day. TechBargains has a Deal Request form in which you can get as granular as you wish (but results aren't guaranteed). DealNews offers general daily newsletters, e-mail alerts, and preset or custom RSS feeds.

Rely on the Pack

Most deal sites' FAQs or "About Us" sections are short on details of how they find deals and whether they are paid to tout them. No matter: If the site has decent community features, you'll quickly get a sense of the real deals versus the duds.

Most of the sites have forums where users can compare notes. Fat Wallet, for one, appears to have an active community, and while it does allow advertisers to post, it labels ads as such. Other sites let users post comments on specific deals; from such postings on several sites, I learned that Amazon specials can be so fleeting that a browser refresh may be required to see them.

Dealio is a Digg-like site where registered users can post deals and rate the deals of others. Some "featured deals" look like ads, but I love that users can give negative ratings to prices that aren't so great. That's Web 2.0 at its best.

ILLUSTRATION: HARRY CAMPBELL

Toshiba recommends Windows Vista® Home Premium

lots of laptops. only one laptop expert.

With hundreds of laptops to choose from, we'll help find the one that's right for you. After all, we spend as much time figuring out how people use their laptops as we do building them. Take the Satellite® A205, for example. We equipped the screen with TruBrite® technology, so you get a sharp, crisp look from almost any angle. Plus it comes packed with an Intel® Centrino® Duo processor and genuine Windows Vista® Home Premium. But if that's not your cup of tea, let's find you one that is. www.toshiba.com/expert2

HD DVD ROM

TOSHIBA

Leading Innovation »»

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Consumer Watch

ON YOUR SIDE AMBER BOUMAN

WHEN MY 250GB Western Digital EIDE internal hard drive died on me while still under warranty, I applied for an RMA (return merchandise authorization) on the company's Web site in order to have it replaced. However, after I entered the drive's serial number and my country of residence (Canada), Western Digital said that the drive was "out of region" because I had purchased it while on vacation in Florida last winter. The company has refused to honor the warranty because of this circumstance, although I have written to Western Digital four or five times. I bought the drive in good faith—do you have any suggestions about what I can do to change this policy? *—Maurice Ledoux, St. Paul de Joliette, Quebec*

OYS Responds: Companies such as Western Digital that sell worldwide often strike deals to have third parties distribute and service their products in other countries, but those third parties are not responsible for servicing the same products bought elsewhere—"out of region."

When Ledoux entered a Canadian address along with the serial number of a drive that he had purchased in the United States, Western Digital's Web site essentially identified his drive as a so-called gray-market product—that is, a product purchased outside the country or market for which it was intended, usually at a discount (even though this was not true in Ledoux's case).

After we contacted Western Digital, the company sent Ledoux a refurbished drive as a replacement, with a new one-year warranty for Canada.

To avoid problems like Ledoux's, we strongly recommend buying products in the country where you'll be using them, as warranties for many tech products are good only in their intended market.

Yahoo's Catch-22

Reader Jim Nolt of Lancaster, Pennsylvania, wrote us saying that, in autumn last year, Yahoo had—without notice—deleted both the e-mail account he had used for six years and a Yahoo Groups message board he had maintained for four years that was devoted to the late actor George Reeves, star of the 1950s TV series *The Adventures of Superman*.

When Nolt asked Yahoo why he was cut off, the company told him only that he had violated the terms of service—but not exactly how he had done so. "I do not believe I violated any terms of service, but if I did, I should like to know which one," Nolt wrote.

After we contacted Yahoo, Nolt heard from a Yahoo customer service representative who offered to help restore the message board under a new user ID—but the rep could not shed any light on why his accounts had been deleted, or help him retrieve any of his e-mail messages. Nolt has since migrated to Gmail and Google Groups.

Meanwhile, Yahoo spokesperson Terrell Karlsten responded to our e-mail queries by saying that she could not discuss details of Nolt's case and adding only that Yahoo encourages its users to read its terms of service carefully, "so they fully understand what activity is and is not permitted."

Bottom line: If you trust your e-mail and message boards to Yahoo, and they suddenly disappear, there seems to be no guarantee the company will enlighten you (or anyone else) on what it is that you are supposed to have done wrong.

ILLUSTRATION: HARRY CAMPBELL

Extra Lithium Batteries: Carry, Don't Pack

IT'S NOW AGAINST federal regulations for passengers on U.S. flights to pack spare lithium batteries—for example, the lithium ion batteries that you might use with a notebook PC or a camera—in checked luggage. Under U.S. Department of Transportation Hazmat Safety Rules that took effect in January, you may pack such batteries only if they are installed in a device; otherwise, you must place them in a plastic bag and carry them aboard in your hand luggage.

The new regulations are intended to reduce the risk of aircraft fires. Officials say that loose batteries may have been responsible for several such fires, including one in February 2006 that occurred in the cargo hold of a United Parcel Service flight to Philadelphia.

For the batteries in most electronics, you can carry on as many spares as you wish. But you can take no more than two larger batteries that contain 8 to 25 grams of "equivalent lithium content," an energy measure that translates to 100 watt-hours for 8 grams and 300 watt-hours for 25 grams. A universal extended-life notebook battery, for instance, has 130 watt-hours.

Additional information is available on the Department of Transportation Web site, at find.pcworld.com/59791.

—James Niccolai

ILLUSTRATION: GORDON STUDER

Win a Dream PC From PC World

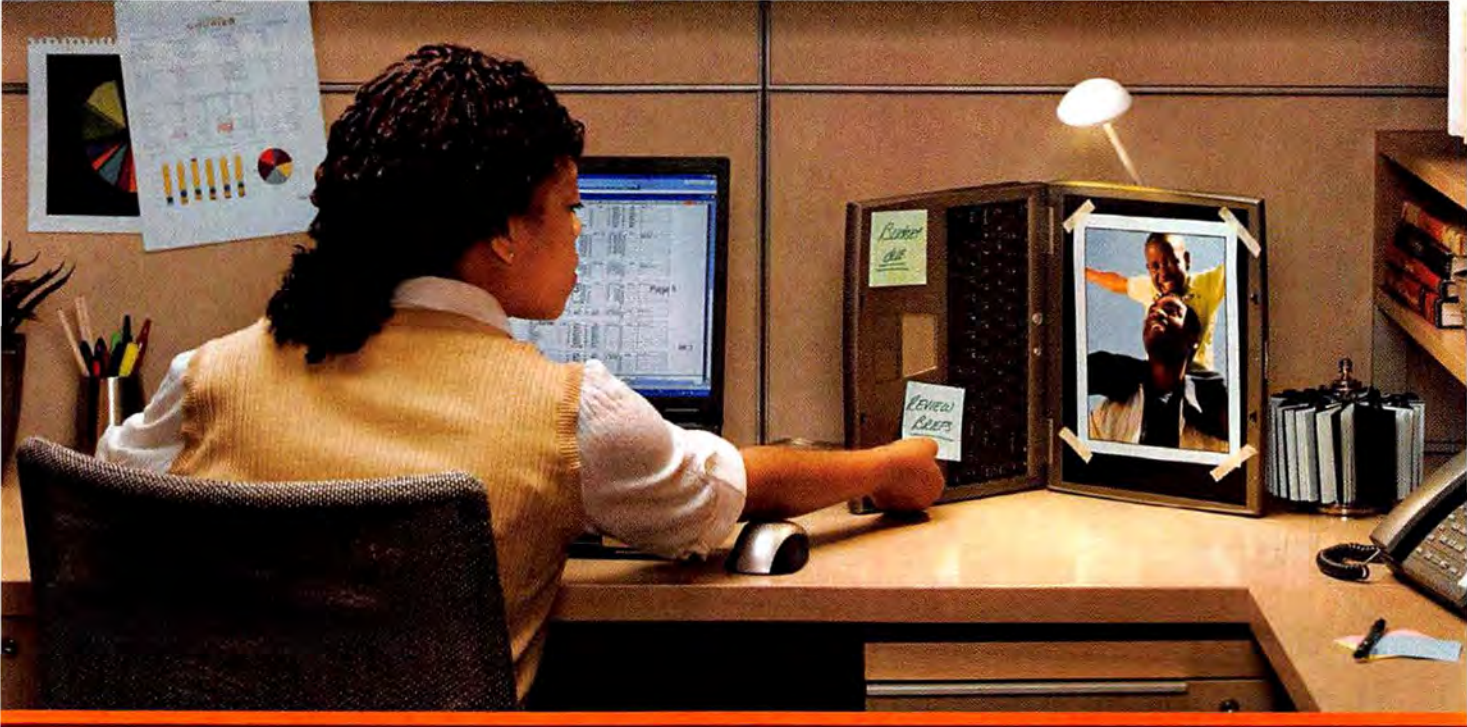
Ever dreamed of building your own PC from scratch? If money were no object, you'd probably build the biggest, baddest, best PC. Well, that's what we're doing—only we're giving it away when we're done!

PC World's editors are picking their favorite components to custom-build the ultimate desktop computer, and you could win it!

Become a registered PC World member today and enter to win the Dream PC (estimated value $16,000): Just sign up for PCWorld.com and click *My Account* then *Member Benefits* to enter.

PCWorld DREAM PC

No purchase necessary to enter or win. Void where prohibited. The Dream PC Giveaway is open to residents of the United States (excluding Puerto Rico) and Canada (excluding Quebec) who are at least 13 years of age and are registered members of PCWorld.com at time of entry. Giveaway begins 1/22/08 and ends 3/31/08. One entry per person. Giveaway is subject to the Official Rules. For the complete Official Rules, go to find.pcworld.com/59439.



Your old notebook can still be put to use. A new one from CDW can be put to work.

Sony® VAIO® SZ650 with Windows Vista™ Business Edition

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How to Play It Safe With Software Licenses

BY BECKY WARING

Software industry associations often focus antipiracy efforts on small businesses, but you can do a lot to protect yourself.

THE COME-ON is enticing: "Report Software Piracy Now, Up to $1 million Reward!" After clicking the button, an informant can fill out a confidential online report ratting out an employer or competitor, without fear of exposure. Though $1 million payouts are reserved for blockbuster cases, the Business Software Association (BSA) claims that a typical informant nets around $5000—not a bad payday.

If you're on the receiving end of the BSA's antipiracy campaign, however, the experience can be painful. The organization took in $13 million in piracy settlements last year, of which nearly 90 percent came from small businesses. In one instance, the BSA sent a letter demanding $67,000 from an architectural design firm that employed 10 people; the firm agreed to pay $40,000 rather than fight the association in court. Burt's Bees, a natural-products company, had to pony up $110,000 to settle out of court.

Their crime? Having too few licenses to cover all of the Microsoft, Adobe, and Apple software on their systems—an offense for which the maximum penalty under law is $150,000 per pirated copy.

Intent is irrelevant. Most small businesses in this situation got there through simple neglect. Even if employees install illicit software without the business's consent, the business is responsible for everything on the PCs it owns. Here are some software-license management tips for avoiding unwanted visits from the BSA and the Software & Information Industry Association (SIIA), and for digging your business out of any copyright holes it may already have fallen in.

Get Out of Trouble

Perform a software audit: The first thing you need to do is figure out where you stand. Jenny Blank, senior director of legal services for the BSA, recommends inventorying all applications installed on company computers, including laptops in the field. Be sure to itemize version numbers and serial numbers. Compare this list to your purchase receipts to determine where any shortfalls lie.

Get legal without going broke: If the gap between software copies that your business is entitled to use and unauthorized software copies isn't *too* wide, you can get up to date simply by purchasing the additional licenses you need and removing any duplicate or illicit copies from the workplace. If the gap exceeds your budget, reconsider who in your company needs any version of the software, and who needs the latest versions. You can save a lot of money by skipping a version or two, and by upgrading only when a new feature or hardware change clearly requires it.

Consider alternative software: Another possibility is to work with open-source software like OpenOffice (www.openoffice.org), which can convert documents to and from Microsoft Office formats. Also, many software vendors offer volume discounts and site licenses, as well as perks such as special support lines that aren't available to retail buyers.

Stay Out of Trouble

After cleaning up your act, you need to stay legal. Many small businesses lack the dedicated IT staff and centralized monitoring that larger companies enjoy, but they can keep on top of software licenses by taking four key steps. »

PHOTOGRAPH: ROBERT CARDIN. ILLUSTRATION: JON KRAUSE

25 YEARS OF PC WORLD: JANUARY 1995

"Copy protection approaches include encryption schemes that render a program unusable until the owner registers, and formatting techniques that make it difficult to copy the original floppies."

—In 1995 we reported on the tactics some software vendors had adopted to stop piracy, like shipping self-destructing disks.

Install software monitoring tools: Even non-IT people can use Spiceworks (www.spiceworks.com) to monitor a network for new software installs. This free program creates lists of all PCs and software on your network, and tracks licenses, warranties, and serial numbers. You can manually add laptops and other remote assets, and determine whether systems need patches. Apps like Tivoli, Unicenter, and Total Network Inventory work similarly, but they aren't free (find.pcworld.com/59778).

Post an employee software policy: To discourage employees from installing illegal software, post a policy that explicitly prohibits installing non-management-approved software and spells out how to request and acquire legal software. The BSA displays a sample policy and a number of other helpful resources on its site (find.pcworld.com/59777).

Don't buy software from questionable sources: Carefully vet eBay and other online sellers to make sure you buy from authorized dealers. The software may have been registered previously; it may be a non-U.S. or nonretail version, an academic version, or an outright fake.

Keep bulletproof records: Be prepared to prove your software's legality. If the BSA challenges you, you'll need sales receipts, with dates and serial numbers.

Balance the Playing Field

If the BSA comes after you despite your best efforts, hire a lawyer who has dealt with the group and understands its tactics. When the BSA suspects a company of software piracy, it may ask the business to perform an internal audit and inform the BSA of the results—but this is tantamount to self-conviction. An experienced lawyer can help you respond without abandoning your legal rights, and, if need be, can negotiate a settlement on better terms than the BSA might offer otherwise. Scott & Scott, a Dallas law firm that specializes in this area of copyright and intellectual property law, has some excellent information and advice on the subject at its Web site (find.pcworld.com/59785).

NET WORK RICHARD MOROCHOVE

Put Pay-per-Click Yahoo Ads in Your PDFs

A new Web-based service from Adobe and Yahoo could help you make money from content you publish in PDF form.

ADOBE'S PDF (Portable Document Format) lets people distribute printed information electronically. But until now, content owners haven't had an easy way to earn money from their PDF materials. A new Web-based service, Ads for Adobe PDF, powered by Yahoo (find.pcworld.com/59853), attaches pay-per-click (PPC) ads to your PDFs; you earn money whenever readers click on an ad.

The free service augments Yahoo's online PPC ad program, in which Yahoo-provided code places ads on Web sites. Google's AdSense PPC network (find.pcworld.com/59723) is similar.

After you sign up with Ads for Adobe PDF and submit a PDF file for processing, the service puts up to five ads (all of them supplied by Yahoo) on a panel to the right of your document; the ads do not obscure the content of the PDF in any respect.

Using Ads for Adobe PDF

Yahoo has said that it will restrict the number of U.S. PDF publishers in its beta program. To apply, you have to provide a fair amount of information in an online application, including some details about the number of PDF files you'd like to submit to the program and the type of content you intend to publish.

I found the service a breeze to use. I logged in to Adobe's site, clicked the Register PDF button, and uploaded a PDF from my PC. After just a few minutes, I received the PDF, modified to accept ads from Yahoo, as an e-mail attachment.

The service determines how many ads to display based on the level of advertiser demand. Four or five text ads appeared in my test PDFs about business software. Initially, none of the ads were particularly relevant—for example, the PDFs all ran the same ad for natural cosmetics. Within an hour, however, Yahoo had replaced the first set of ads with more-relevant ones.

Each PDF file that you register with the service will continue to receive ads for 180 days (the service notifies you via e-mail when a PDF's registration is about to expire), after which you may re-register your file. You can cancel your registration and get rid of the ads at any time. You can access reports on the performance of your PDFs at the Yahoo Publisher Network site.

The service won't accept files that exceed 5 megabytes or that contain controversial content such as references to drugs or adult material. You can't change the ad layout or panel format, nor do you have any say over the keywords Adobe uses to place ads.

When a reader who isn't online opens an ad-enabled PDF file, a pop-up asks to connect to Adobe's Web site to display sponsored content. If the reader doesn't approve the request, ads won't display.

Adobe intends to integrate the ad-insertion technology into some content-creation software—InDesign or Acrobat, perhaps—so publishers won't have to use the online portal to ad-enable PDFs.

Adobe, Yahoo, and the publisher (you) split the earnings from the ads. You don't get paid until your ad earnings reach $100—unless you opt to be paid via PayPal, which drops the minimum to $50.

Ads for Adobe powered by Yahoo is an easy-to-use service that may help people who publish a lot of PDFs recoup some of their production costs. If nothing else, it offers clear evidence that Google isn't the only innovator in online advertising.

ILLUSTRATION: HARRY CAMPBELL

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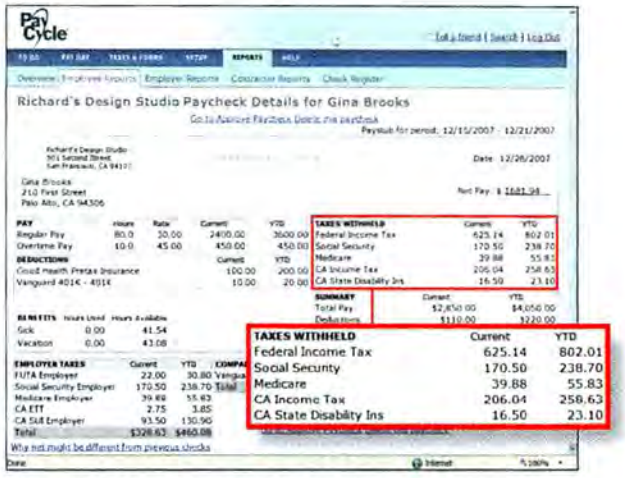
Web Services Make Quick Work of Payroll

EVER-CHANGING TAXES AND other deductions make payroll preparation a headache for many employers. But two new Web-based payroll preparation services—Intuit's Online Payroll and PayCycle's PayCycle Payroll Plus—offer relief. All you need is a Web browser and a broadband Internet connection.

Both services allow you to print paper paychecks and pay stubs and to deposit net pay electronically into employees' bank accounts. They also maintain current tax tables, calculate gross pay and deductions, and help you prepare payroll tax forms at filing time.



PAYCYCLE MAINTAINS CURRENT tax tables for calculating and deducting federal and state taxes from employee checks.

78 GOOD

Intuit Online Payroll | Intuit
Stand-alone online payroll service is a good value. $30/month
find.pcworld.com/59509

79 GOOD

PayCycle Payroll Plus
PayCycle
Premium price is worth it if you seek integration with accounting apps. $43/month (up to five employees)
find.pcworld.com/59510

Intuit Online Payroll

Intuit's relatively inexpensive ($30 per month) payroll service is aimed at businesses that don't use its popular QuickBooks application. To set it up, you fill out a questionnaire and take a tour of the service to learn how to pay employees, pay taxes, and file tax forms.

Online Payroll offers tax forms for just 19 states, however; if your state isn't among them, you'll have to complete the state tax forms manually. Also, Intuit Online Payroll doesn't integrate with QuickBooks or any other small-business accounting software—so if you use such a program, you'll have to enter your payroll and deductions manually.

PayCycle Payroll Plus

At $43 per month (for five or fewer employees) PayCycle Payroll Plus is pricier than Intuit's offering, but it does a little more, too. Because of its integration with many accounting and personal finance programs—including MS Money, NetBooks, Peachtree, QuickBooks, and Quicken—PayCycle can export data directly to your accounting app, saving time and improving the accuracy of your records. The service also provides tax forms for all 50 states and lets you file forms and payments electronically in some states.

Despite its drawbacks, Intuit Online Payroll is cost-effective and easy to use. But PayCycle may be worth its higher price if you need its extra features.

—Richard Morochove

Mini Print Servers Wring Extra Life From Old Printers

MAKING OLD, network-unready printers accessible to your team over the network is as easy as plugging in a little plastic box. Mini print servers—so called for their small size and limited features—such as Netgear's PS121 ($60) act as a bridge between your routers and old printers that you otherwise wouldn't be able to network.

Mini print servers connect to printers via a USB cable, and to the network's router across an ethernet cable. Most mini print servers have a browser interface that permits you to customize settings over the network at any time. Once the server is up and running, you can use it to print from any PC—wired or wireless—anywhere on the network.

NETGEAR'S $70 PS101 mini print server keeps even old parallel printers connected.

For ancient printers, Netgear's PS101 ($70) has a parallel connector to accommodate old printer cables. Like its USB counterpart, it lets you extend the life of your aging hardware, thereby reducing your electronics recycling costs.

Thanks to their easy setup and strong reliability, the Netgear print servers discussed above have won my trust, but they aren't the only distribution points in Dodge. Other good options include the parallel D-Link DP-301P+ and the Linksys PSUS4, both priced below $70.

Mini print servers do have several drawbacks, however, including limited memory and scaled-down functionality. As a result, only a couple of users can connect to them at once, and the servers usually have no policy management features. They're ideal for a home office or a very small workgroup, but not for groups of more than five or six users.

—Robert Strohmeyer

PHOTOGRAPH: MARC SIMON

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When Searches Attack: Hackers Rig Google

BY ERIK LARKIN

IF LAST NOVEMBER you googled one of thousands of innocuous and common search terms, such as "Microsoft excel to access" or "how to teach your dogs to fetch," you were in line for an Internet attack that infects PCs with spam senders, password stealers, and other kinds of nasty malware.

Beginning on November 24 and continuing for less than a week, bad guys loaded up more than 40,000 Web pages with malicious software and thousands of common search terms. They then employed an automated network of malware-infected computers—known as a botnet—to link to those sites in blog-comment spam and other places. The mentions elevated the position of the poisoned sites in search results, often to the first page.

> The latest malware trend should prompt you to think twice about the links you click next time you search.

Click Here for Free Attack

The malicious sites had no useful information. Instead, a simple click on a link to such a site in the search results was enough to launch attacks against your PC. If the attack found any of a number of vulnerabilities in a range of programs, it would load.

"This was a massive wave," says Alex Eckelberry, president and CEO of security firm Sunbelt Software.

The attack marks a new level of sophistication, using multiple techniques to raise site visibility in search results and deliver malware to a mass audience.

Sunbelt researcher Adam Thomas happened upon the attack when he ran a search of "netgear ProSafe DD-WRT" for router firmware. His trained eye saw a suspicious-looking result on the first page. More research and digging on other phrases turned up the vast array of attack sites (find.pcworld.com/59511).

None of the sites from this wave, or a smaller follow-up group, appear now on Google, and Eckelberry and other experts believe the search giant has blocked those specific domains. But Google isn't saying what it did to stop this attack, or whether measures are in place to halt a recurrence.

Game On: Google Bombed

This massive attack had three notable features that point to the sophistication and planning behind it. The first is the culprits' use of botnets to push a dark form of SEO (search-engine optimization), called a "Google bomb," to boost their sites' Google rankings.

"They did an extraordinary job optimizing the search results using the bots," Eckelberry says.

Second, the poisoned sites carried JavaScript code on their pages designed to stop visitors coming via other search engines from being attacked—only visitors who came through a Google search were hit.

"[This trick was a] way of flipping the finger at Google," says Eckelberry. Experts don't know the motive behind directing the attacks at Google users, but online crooks have targeted specific sites and companies in the past when they felt threatened (find.pcworld.com/59512). Google recently launched an online form (find.pcworld.com/59513) for reporting a site that Web users believe might contain malware.

Third, the manipulated pages carried code that kept the attack sites from appearing in results if the entered search term included certain expressions that security researchers commonly use. For example, Eckelberry had recently written about using "inurl" and "site," two of the singled-out terms.

Despite Google's steps to eliminate the impact of comment spam on its search result rankings, the use of SEO tech- »

ILLUSTRATION: TOMER HANUKA; PHOTOGRAPH: ROBERT CARDIN

25 YEARS OF PC WORLD: DECEMBER 1995

"Viruses do exist. There were more than 6900 at last count, and experts say that three to five new ones are created every day."

—A December 1995 antivirus software review had to make the case that viruses are a genuine problem. In 2007, more than 5.5 million malware samples, including variants, were in the wild. (Source: Secure Computing)

niques is growing in the online criminal underground. And bad guys don't employ the trick just to infect people's PCs. WhiteHat Security chief Jeremiah Grossman says that whoever hacked Al Gore's Web site recently (find.pcworld.com/59515) added a link that could be seen only in the site's source code.

The link, which pointed to an online pharmacy site, was designed to give the drug site more relevance. Grossman says that, according to underground contacts, the top result for "buy Viagra online" is worth about $50,000 a month.

How to Search Safely

Though this attack was crafty and effective, security experts say there's no need to stop using Google, as long as you take some precautions. Most important: Keep your software patched and up-to-date. The attack sites used a programming kit called the "404 exploit framework," which hits known software vulnerabilities, says Roger Thompson, president of security software maker Exploit Prevention Labs. You can close most of the targeted holes by enabling the automatic-update features for Microsoft Windows, Mozilla Firefox, Apple QuickTime, and other critical software, but you should also update to the latest version of WinZip, a targeted program that doesn't have an auto-update feature.

Keep a close eye on what you click on, too, and you'll keep search paranoia at bay, as Eckelberry has. "I'm a Google fanatic," he says. "I haven't stopped using Google because of this."

THE CAREFUL EYE of Sunbelt researcher Adam Thomas spotted the attack, which targeted common search terms (as highlighted).

BUGS & FIXES

STUART J. JOHNSTON

Hackers Set Their Sights on Windows Vista

Plus: Get Office 2007 SP1, avoid an HP laptop disaster, and upgrade Flash.

WITH MORE PEOPLE finally switching to Windows Vista, the operating system is fast becoming a target for security researchers and—surprise!—hackers.

Though Vista is generally more secure than earlier versions of Windows, hackers are increasingly finding ways through, or around, its defenses. Indeed, this is the first time since the operating system debuted last year that virtually every hole discussed in this column affects Vista in one way or another.

Exhibit A: Microsoft released three "critical" patches in December to fix security holes that affect earlier versions of Windows, including XP Service Pack 2, but they can also bite if you're running Vista.

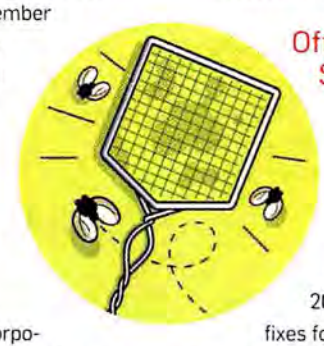
One patch addresses four holes in Internet Explorer 6 and 7. (This "cumulative update" incorporates all previous patches, just in case you've slipped behind in your patching duties.) One of the flaws, in the way IE handles Dynamic HTML, was under attack when Microsoft shipped the patch.

The other two patches correct problems in Windows' processing of certain multimedia files. One fixes a vulnerability in DirectX, while the other closes a hole that the operating system has in its treatment of some audio and video files.

Whenever Microsoft labels a bug "critical," the vulnerability has the potential to leave you at criminals' mercy. If, like me, you choose to forgo automatic updates, browse to find.pcworld.com/59502 to download the patches.

HP 'Quick Launch' Threat

More than 80 models of HP laptops have a security glitch in the included HP software for letting you configure quick-launch buttons. The flaw could allow an attacker to take complete control of your PC, if you are tricked into visiting the bad guy's Web site first. With proof-of-concept code out on the Web, HP released an update that disables the quick-launch software, called Info Center. Until the company issues a more complete fix, you can't use the buttons, but at least you'll be protected. You must manually download and install the update; if your laptop has HP Info Center, go to find.pcworld.com/59506 for the download.



Office 2007 Service Pack

The first service pack for Office 2007 is out, and it includes previous security patches, performance updates, and most hotfixes for Office 2007, as well as specific fixes for other annoyances. For instance, SP1 includes a patch meant to improve the performance of Outlook when you're working with large message folders. You should see fewer unexplained crashes as well. Grab Office 2007 SP1 at find.pcworld.com/59507.

Adobe Patches Flash

Adobe patched a passel of holes in its Flash Player. All of the player's supported platforms—Mac, Linux, Windows (yes, Vista too)—are vulnerable. Getting stung is as easy as visiting a site with a booby-trapped banner ad or clicking on an SWF (Shockwave Flash) file. Adobe is urging upgrades to the newest (patched) version, 9.0.115.0. Visit find.pcworld.com/59699.

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ILLUSTRATION: HARRY CAMPBELL

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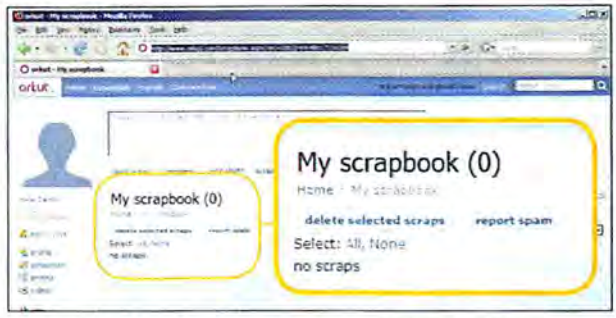
ThreatSense NOD32

Orkut Worm a Harbinger of Trouble for OpenSocial?

A WORM THAT hit Google's Orkut social networking site in December was deemed relatively harmless, but still served to highlight Web apps' vulnerability.

At one point, the worm, which arrived in an e-mail telling users that they had been sent a message on their profile from another Orkut user, automatically added new members to the creator's Orkut community at a rate of 100 per minute and reached a few hundred thousand people, wrote blogger Kee Hinckley (find.pcworld.com/59705), who first reported the attack. Those users who received the message had only to view their Orkut profile to be added.



ORKUT'S SCRAPBOOK IS where the worm surfaced, as an invite.

The name of the community, in Portuguese, roughly translates to "infected by the Orkut virus." Orkut is popular in Brazil, but not in the United States.

The community's description reveals the worm's motive: "This just to show how orkut may be dangerous, you came up here without clicking absolutely no link malicious, everything was done reading scraps."

Hinckley wrote: "Presumably there's a bug somewhere in the HTML filter, which is allowing malicious Javascript to get through." He noted later, however, that disabling Flash stops the worm.

With Google developing its OpenSocial platform, should this attack ring alarm bells? OpenSocial gives "developers more control and should make attacks harder...but we are working to help mitigate security issues," a Google representative says. *—Jeremy Kirk*

PRIVACY WATCH ERIK LARKIN

Ask.com Rises to the Top of the Pack in Search Privacy

HATS OFF TO Ask.com for its new hands-off—or eyes-off—search option. The AskEraser feature will prevent the search company from saving your data in its logs.

Turning it on is just a click away. Select *AskEraser* at the top-right of any Ask.com page, and you're prompted to enable the feature, which deletes within hours all of your search data activity, including your search terms, your IP address, and any session identifier. Ask.com cookies disappear from your browser as well, save one that reminds the site that you're using AskEraser.

"It is certainly a large leap in the right direction," says Ari Schwartz, deputy director of the Center for Democracy and Technology, a consumer advocacy nonprofit in Washington, D.C.

The AskEraser cookie sticks around for two years, after which you will need to turn on AskEraser again. The option also works if you use Ask via the search box in Firefox or Internet Explorer 7.

It's a good move, and one I'd like to see more companies follow, but it doesn't afford complete privacy protection. Ask.com sends your search data to some other companies for services (such as Google for text ads on results pages), and privacy experts say that those other companies can save your data according to their own privacy policies. (Ask didn't respond to my queries about the topic.)

> AskEraser puts you in control of your search data, giving Ask.com a leg up on rivals.

The other major search engines are taking positive steps. Last summer, Google, Microsoft, and Yahoo all announced that they would anonymize their saved search data after a period of time so that those searches couldn't be tied to a particular person.

Starting in January, Google will anonymize search logs after 18 months by pulling out the cookie-based unique IDs and clearing the final part of stored IP addresses. The action still allows for divining your general location but breaks the specific link between you and your searches. Beginning in the first half of 2008, Microsoft will wipe the entire IP address after 18 months. And, come summer, Yahoo will clear the full address after 13 months.

But AskEraser puts Ask.com on top when it comes to search engine privacy—and even if you don't enable AskEraser, Ask.com says that it will delete all search-activity log data after 18 months. Of course, the most important thing about a search engine is whether it finds what you're looking for. When we put the engines through their paces last April (find.pcworld.com/59499), we found that Ask.com was decent, but overall it didn't do as well as Microsoft, Google, or Yahoo. Nevertheless, AskEraser makes it worth your while to see if Ask.com delivers the results you need. ●

ILLUSTRATION: HARRY CAMPBELL

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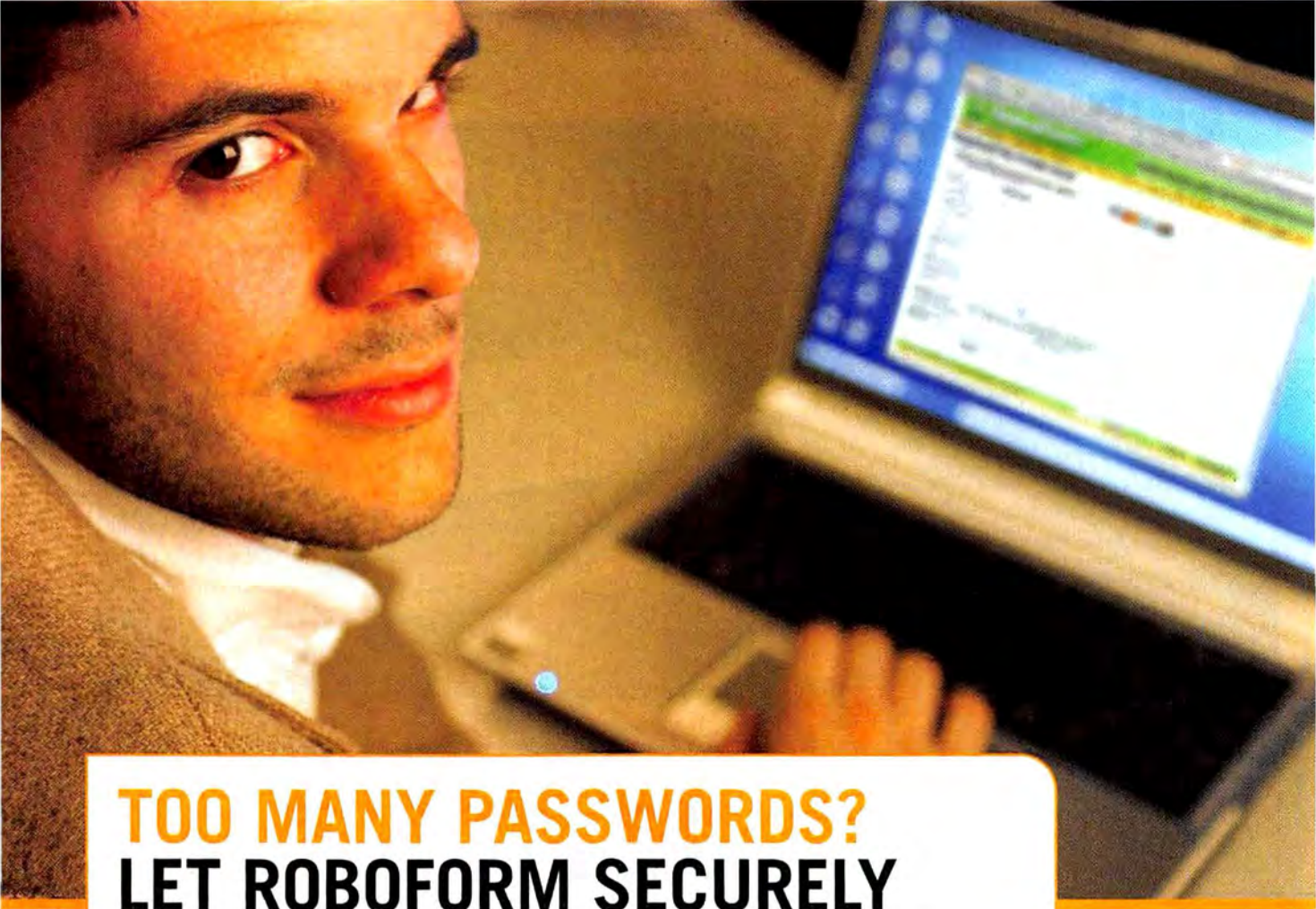

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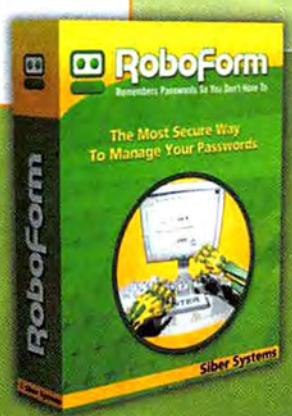

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Reviews & Rankings

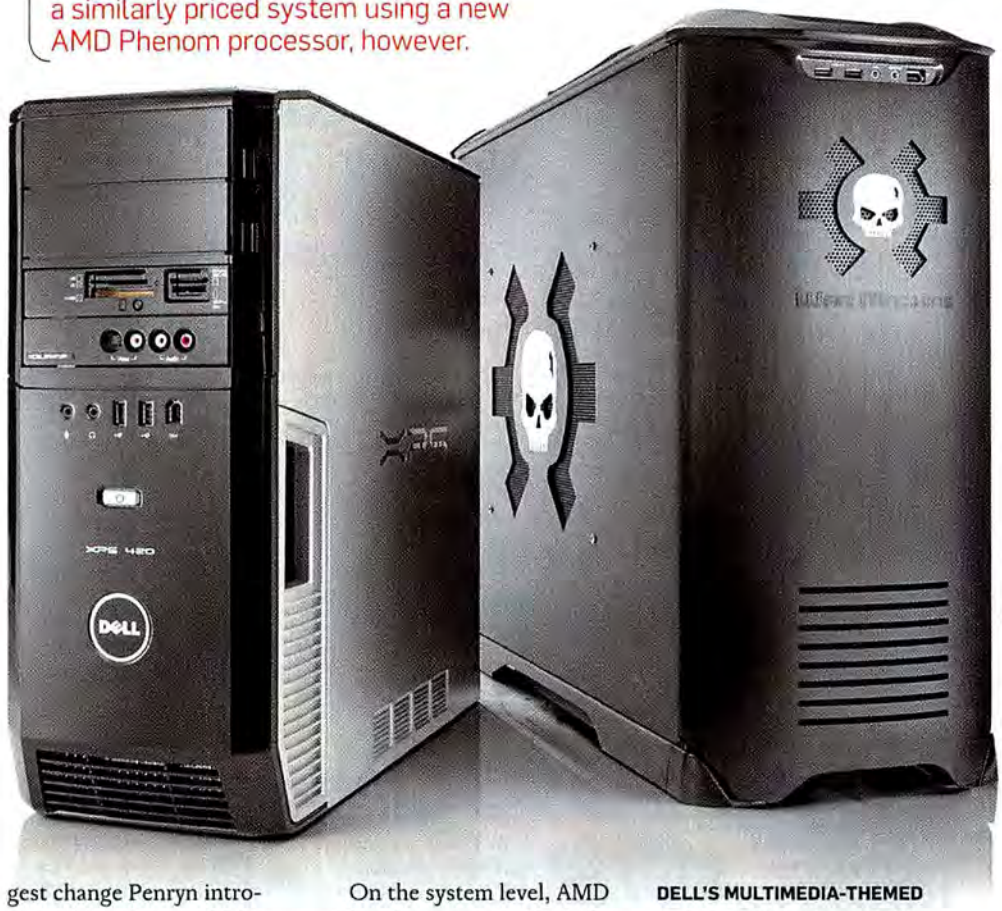
Penryn, Phenom PCs: Fast, Not Phenomenal

The first high-end systems with Intel's new CPU prove markedly faster than a similarly priced system using a new AMD Phenom processor, however.

PCW Test Center

MAINSTREAM AND boutique PC vendors are having a field day releasing new systems with next-generation Intel Penryn and AMD Phenom processors. We found Intel Penryn-based desktops to be substantially faster than the one similarly priced AMD Phenom system we tested, but in general not much faster than systems configured with Intel's previous-generation processors.

Penryn and Phenom are designed differently. Whereas Phenom chips use four distinct cores, quad-core Penryns consist of two dual-core processors sharing the same piece of silicon and a bus interface. The Phenom approach may eventually lead to better multitasking performance. On the other hand, Penryn CPUs are manufactured using a 45-nanometer process that fits more transistors into less space, allowing manufacturers to produce more chips from the same amount of material while consuming less power than is required for the 65-nm last-generation dual/quad-core Intel CPUs and the AMD Phenoms. Aside from the die-shrink, the biggest change Penryn introduces is Intel's new SSE4 instruction set, which can speed up applications written to work with it. For example, Adobe is updating the next version of its Premiere Pro video editing application with SSE4 support.



DELL'S MULTIMEDIA-THEMED XPS 420 midsize tower (left), and War Machine's impressively powerful M1 Elite system.

PHOTOGRAPHS: MARC SIMON

On the system level, AMD takes the concept of linked graphics cards (an idea that it calls 'CrossFire' and that nVidia refers to as 'SLi') up a notch, offering the ability to use four cards in a single PC. We plan to test such systems as they become available.

We looked at three new PCs configured with Intel's top-of-the-line Penryn chip, the 3-GHz QX9650 Core 2

INSIDE

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72 INGRID HOME KIT

Extreme: Dell's XPS 420, Puget Systems' Puget Gaming Computer, and War Machine's M1 Elite. We also took a sneak peek at a not-yet-available Dell XPS 420 system carrying Intel's mainstream Penryn processor, the Q9550. Dell says it plans to release PCs with this CPU in the first quarter of 2008.

On the AMD side, the system we looked at (Polywell's $2999 Poly 790FX) carried AMD's 2.2-GHz 9500 Phenom CPU and its equally new 790FX chip set.

Dell's XPS 420 Shines

Loaded with 3GB of memory, the Q9550-equipped Dell XPS 420 earned a score of 122 in our WorldBench 6 Beta 2 benchmark. That's just shy of the 126 posted by its pricier QX9650-based (but otherwise identically configured) XPS 420 sibling. Meanwhile, the QX9650-equipped War Machine M1 Elite scorched its way to a WordBench 6 Beta 2 result of 131. It performed strongly in every facet of the test suite, and put up excellent gaming numbers as well.

Puget Systems' Gaming Computer, which was configured almost identically to the War Machine, scored 124. On many components of our WorldBench 6 Beta 2 test suite, the Puget ran neck and neck with the War Machine, but it fell behind in large-file-intensive tests such as creating disc im- »

PC WORLD TOP 5 INTEL PENRYN OR AMD PHENOM DESKTOP PCs

MODEL	PCW Rating	Performance	Features
1 BEST BUY CyberPower Power Infinity Pro $4299 find.pcworld.com/59163	84 VERY GOOD	• WorldBench 6 score: 120 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 3-GHz Core 2 Extreme QX9650 • 1.8TB (RAID) drive capacity • 22-inch Sylvania SK2201W-B LCD • 768MB EVGA 8800 GTX
BOTTOM LINE: This Penryn-based PC packs a big punch in gaming performance, but it'll also wallop your wallet.			
2 Dell XPS 420 $2729 NEW find.pcworld.com/59482	83 VERY GOOD	• WorldBench 6 score: 122 • WorldBench 6 rating: Superior • Overall design: Good • Graphics: Very Good	• 2.83-GHz Core 2 Quad Q9550 • 640GB (RAID) drive capacity • 22-inch Dell SP2208WFP LCD • 512MB nVidia GeForce 8800 GT
BOTTOM LINE: Solid performer costs considerably less than Dell's QX9650-based XPS 420 configuration.			
3 Dell XPS 420 $3729 NEW find.pcworld.com/59481	81 VERY GOOD	• WorldBench 6 score: 126 • WorldBench 6 rating: Superior • Overall design: Good • Graphics: Superior	• 3-GHz Core 2 Extreme QX9650 • 640GB (RAID) drive capacity • 22-inch Dell SP2208WFP LCD • 512MB nVidia GeForce 8800 GT
BOTTOM LINE: Handsome PC delivers strong performance but lacks the expandability of other high-end power desktops.			
4 War Machine M1 Elite $4485 NEW find.pcworld.com/59479	80 VERY GOOD	• WorldBench 6 score: 131 • WorldBench 6 rating: Superior • Overall design: Good • Graphics: Superior	• 3-GHz Core 2 Extreme QX9650 • 1.05TB (RAID) drive capacity • 22-inch Samsung 226BW LCD • 756MB EVGA e-GeForce 8800 Ultra
BOTTOM LINE: This exceptional performer's expandability will appeal to power users with serious storage requirements.			
5 Polywell Poly 790FX $2999 NEW find.pcworld.com/59477	77 GOOD	• WorldBench 6 score: 95 • WorldBench 6 rating: Good • Overall design: Good • Graphics: Good	• 2.2-GHz Phenom 9500 • 650GB (RAID) drive capacity • 22-inch Samsung 226BW LCD • 512MB ATI HD 3850
BOTTOM LINE: Phenom-based PC has the latest AMD CPU and ATI graphics, but is too expensive for the performance it delivers.			

CHART NOTE: Prices and ratings are as of 1/3/08; WorldBench 6 Beta 2 benchmark used for all testing.

25 YEARS OF PC WORLD: MARCH 1991

"These five screamers are among the fastest—and the costliest—systems you can buy. We pick the best of the lot and answer the obvious question: Who needs this much power?" —*We reviewed four blazing 486 PCs in the March 1991 issue, starting at $8300, and decided that they were simply too fast for most people.*

ages in Nero 7 Ultra edition, most likely because it was one of the few systems competing for a spot on our chart of top Penryn and Phenom PCs that didn't employ two hard disks in a striped array.

In our tests, despite the War Machine's blazing performance, Penryn 3-GHz QX9650 Core 2 Extreme–based machines in general didn't significantly outperform PCs based on Intel's older 65-nm processors. This is evident from the WorldBench 6 Beta 2 scores posted by the CyberPower Infinity Pro (124) and the E6850-based Xi MTower PCIe—two systems equipped with Intel's previous high-end CPU, the 3-GHz Core 2 Extreme QX6850; both achieved high rankings on our online Power Desktops chart (find.pcworld.com/59191). But since none of the applications in the WorldBench 6 Beta 2 test suite are optimized for the four cores offered by the Intel Q and QX chips or their Phenom competition, we're essentially comparing just the first two cores on all these processors.

Polywell's Phenom PC

The 2.2-GHz Polywell Poly 790FX costs $270 more than the 2.83-GHz Q9550 Dell XPS 420 that outscored it on WorldBench 6 Beta 2, 122 to 95. The Poly 790FX had only one graphics board (a 512MB ATI HD 3850), installed in one of four PCIe x16 slots; but it had a 1000-watt power supply, simplifying the task of upgrading to four graphic boards if you wanted to in the future.

MORE ONLINE

You can find in-depth reviews, specifications and test scores for all the systems we test at our Desktop PCs Info Center (find.pcworld.com/59846).

Well-Built Specimens

Not surprisingly, each of these high-end systems had a handsome case design. Like the first War Machine M1 Elite we tested, the new QX9650-equipped M1 Elite we looked at comes packaged in an impressive, all-black case with lots of free bays and blue bling lighting. Puget Systems' Puget Gaming Computer is a pricey newcomer ($5765 list), but it turned in very good performance and has one of the best-laid-out interior designs we've ever seen, starting with an Antec P182 case. Assembled with virtually no obstructing cables and tons of easily accessible drive bays, it's a thing of beauty.

Meanwhile, the two Dell XPS 420 models we tested have great-looking glossy black finishes. Each model came configured with a Blu-ray drive (read-only), front-mounted S-video and RCA ports (which include a hardware video transcoding option dubbed the 'Xcelerator'), a top-mounted 2-inch LCD that employs Microsoft's Sideshow secondary display technology, and integrated Bluetooth to handle the bundled wireless keyboard and mouse. The 'X' in the 3-GHz QX9650's CPU name stands for Xtreme, and normally it indicates that you can overclock PCs with the chip. However, though Dell supports Extreme processors for the XPS 420, it does not provide utilities or BIOS support for overclocking. The QX9650 XPS 420 also costs $1000 more than its sibling equipped with the 2.83-GHz Q9550 chip.

POLYWELL'S POLY 790FX boasts AMD's new 2.2-GHz Phenom 9500 CPU, its 790FX chip set, and ATI's 512MB HD 3850 graphics board.

Phenom Problems?

If you're thinking about buying a Phenom-based system, you should be aware of a bug known as the TLB erratum. This flaw can cause a Phenom computer to lock up on extremely rare occasions—namely, when all four cores are working full bore. Right now, the only software known to trigger the freeze is VMware. In our testing, we didn't encounter a Phenom freeze; and most motherboard BIOSs have been patched to avoid it. AMD admits, however, that the BIOS workaround imposes a substantial performance hit on the PC, so we recommend that you not apply the patch unless your machine actually locks up. Since the BIOS for Polywell's Poly 790FX's Gigabyte GA-MA790FX-DQ6 motherboard hadn't implemented the patch, the scores it earned represent the chip's full performance potential at this time. AMD has promised to release a version of its software overclocking utility that will permit you to toggle the BIOS workaround on and off. That way you'll be able to choose between top performance and guaranteed stability.

—Jon L. Jacobi

PHOTOGRAPH: MARC SIMON

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DisplayPort Monitor: High Price, Average Images

PCW Test Center

THE 30-INCH DELL UltraSharp 3008WFP, priced at $1999, is the first monitor to have the new DisplayPort connection. But its graphics performance, while respectable, trails that of competitors.

As of this writing, no graphics cards yet have a DisplayPort. (New boards are expected to be available from nVidia and AMD later this year.) Still, in our tests conducted with a dual-link DVI connection, the monitor earned a Very Good rating for text; Excel spreadsheets and fonts in general looked extremely sharp. Our graphics tests yielded mixed results. Though the 3008WFP handled Web pages with aplomb, it was an average performer on colorful pictures, such as a photo of fruit slices. As a result, it received a Good rating.

Dell touts DisplayPort as a future-proof digital connection. Like HDMI (which this model also has), it can handle high data rates of video and audio with one cable.

The 3008WFP comes with a bounty of other analog and digital connections, including component, composite, and S-Video for devices such as DVD players and cable boxes.

The monitor's design is attractive and subtly understated thanks to its brushed gray aluminum bezel. It features a forward-looking industrial design with a glass and metal base.

The 3008WFP offers a desirable collection of features, though it ranks last in a group of high performers. To date, it's also the most expensive 30-inch unit. Its DisplayPort connection offers a glimpse of what monitor ports we may be using in the future. But for the present—which DVI- and VGA-enabled PCs still dominate—other monitors, such as Samsung's 30-inch 305T ($1179), offer better performance and value.

—Roy Santos

THE DIGITAL DISPLAYPORT connector is similar in size and shape to an HDMI port.

81
VERY GOOD

UltraSharp 3008WFP | Dell
Other 30-inch models beat the first DisplayPort-enabled monitor.
List: $1999
find.pcworld.com/59709

Media Player Looks Better Than It Sounds

PCW Test Center

THE COWON Q5W is a portable media player with a stunning 5-inch touch-screen display and built-in Wi-Fi capabilities. I tested a model with an internal 40GB hard drive that sells for a hefty $550.

The screen fills nearly the entire front of the handheld device, which is merely 0.8 inch thick and measures 5.5 inches wide by 3.5 inches tall. It feels surprisingly heavy, but it's easy to tote in a pocket. Its only physical controls are the on/off switch and volume buttons. By using the touch-screen interface, however, you can make light work of everyday tasks, such as listening to music, tuning the FM radio, and watching video.

THE TOUCH-SCREEN interface is easy to navigate.

For more detailed operations, you exit Cowon's user-interface shell and employ the player's outdated Windows CE 5.0 operating system (Windows CE 6.0 has been out for more than a year). Unfortunately, this includes tasks you'll want to do often, such as surfing the Web, setting up Wi-Fi, and copying files to/from USB devices. Here you will need the included stylus for working in tiny dialog boxes and typing on the virtual keyboard.

Video looked impressively sharp and colorful on the 800-by-400-pixel display, especially when I played wide-screen-format DivX-encoded movies. Motion was very smooth, and the picture was visible from a wide angle. The device scored poorly in our lab tests of its audio quality, though, and the included earbuds are basic at best.

The Cowon Q5W works well for listening to music and watching video, but it feels less refined than the cheaper Archos 605 WiFi.

—Paul Jasper

73
GOOD

Q5W | Cowon
Some of the sophisticated features can be tricky to use.
List: $550
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New Sony Laptop Is Sleek, Inexpensive, but Slow

PCW Test Center

THE SUB-$1000 LAPTOP category gets a prettier—but not faster—alternative in a new model from Sony.

The sixth-ranked VAIO VGN-NR160E/T has the distinction of being the cheapest and slowest model on this month's all-purpose laptops chart. It's nearly 40 percent slower than the fastest model, the MPC E-295C. If comfort and style are more important to you than speed, however, the VAIO's wide keyboard keys and the subtle shimmer on its chocolate-brown case might win you over. The $830 price tag also includes an ample 160GB hard drive, and you can reprogram the mute and A/V buttons above the keyboard to launch your choice of applications. But be warned: Out of the box, this portable's Windows Vista desktop heavily advertises software trials.

—Carla Thornton

SONY'S chocolatey and cheap VAIO VGN-NR160E/T.

MORE ONLINE

For more information about laptops, including details on how we test, see find.pcworld.com/55176.

PC WORLD TOP 10 ALL-PURPOSE LAPTOPS

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY HP Pavilion dv6500t $1079 find.pcworld.com/57131	83 VERY GOOD	• WorldBench 6 Beta 2 score: 75 Very Good • Overall design: Very Good • Tested battery life: 3:57	• 2-GHz Core 2 Duo T7300 • 15.4-inch wide screen • 6.2 pounds • DVD+R DL/DVD±RW
	BOTTOM LINE: Affordable multimedia notebook has a head-turning designer case that incorporates a subtle swirl pattern.			
2	Lenovo ThinkPad R61 $1395 find.pcworld.com/57905	82 VERY GOOD	• WorldBench 6 Beta 2 score: 80 Superior • Overall design: Very Good • Tested battery life: 3:19	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 5.8 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: The R61's slim size, light weight, and keyboard illumination make it ideal for taking along on the road.			
3	HP Pavilion dv2500t $1344 find.pcworld.com/58446	81 VERY GOOD	• WorldBench 6 Beta 2 score: 79 Superior • Overall design: Very Good • Tested battery life: 2:34	• 2-GHz Core 2 Duo T7300 • 14.1-inch wide screen • 5.5 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: This sibling of the dv6500t has a gorgeous imprinted case, too, but battery life is on the short side.			
4	Lenovo 3000 N200 $1299 find.pcworld.com/59032	80 VERY GOOD	• WorldBench 6 Beta 2 score: 80 Superior • Overall design: Good • Tested battery life: 2:33	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 5.3 pounds • DVD±RW/-RAM
	BOTTOM LINE: The Lenovo 3000 N200 is no multimedia machine, but it has a nice keyboard and is designed for comfortable use.			
5	Dell Inspiron 1420 $1789 find.pcworld.com/59033	80 VERY GOOD	• WorldBench 6 Beta 2 score: 83 Superior • Overall design: Very Good • Tested battery life: 4:49	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 6.0 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: Midsize consumer notebook has a high-quality design, good performance, and stand-alone media buttons.			
6	Sony VAIO VGN-NR160E/T $830 NEW find.pcworld.com/59730	79 GOOD	• WorldBench 6 Beta 2 score: 52 Fair • Overall design: Good • Tested battery life: 3:21	• 1.5-GHz Core 2 Duo T5250 • 15.4-inch wide screen • 6.2 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: Tepid performance and a somewhat dull screen are the flies in the ointment for this inexpensive unit.			
7	Gateway T-6815 $900 find.pcworld.com/59031	79 GOOD	• WorldBench 6 Beta 2 score: 56 Fair • Overall design: Good • Tested battery life: 3:03	• 1.5-GHz Core 2 Duo T5250 • 14.1-inch wide screen • 5.5 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: This low-cost portable offers a convenient volume swipe but also has slow performance and a dim screen.			
8	MPC E-295C $1628 find.pcworld.com/59035	78 GOOD	• WorldBench 6 Beta 2 score: 85 Superior • Overall design: Good • Tested battery life: 4:39	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 7.0 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: Formerly sold by Gateway, this fast convertible has a huge screen for a tablet—but can be heavy to hold.			
9	Sony VAIO VGN-FZ180E/B $1850 find.pcworld.com/57907	73 GOOD	• WorldBench 6 Beta 2 score: 75 Very Good • Overall design: Good • Tested battery life: 4:28	• 2-GHz Core 2 Duo T7300 • 15.4-inch wide screen • 5.7 pounds • BD-R/RE/DVD±R DL/DVD±RW
	BOTTOM LINE: Midsize notebook with a nice screen and Blu-ray Disc drive offers great performance and long battery life.			
10	Toshiba Tecra M9-S5514 $1800 find.pcworld.com/58349	71 GOOD	• WorldBench 6 Beta 2 score: 73 Very Good • Overall design: Good • Tested battery life: 2:48	• 2.2-GHz Core 2 Duo T7500 • 14.1-inch wide screen • 5.4 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: Laptop meets EPEAT Gold environmental standard but delivers merely average speed and battery life.			

CHART NOTES: Prices and ratings are as of 1/11/08. Weight does not include AC adapter, power cord, docking station, or extra batteries.

PHOTOGRAPH: MARC SIMON

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PC Tools Spyware Doctor 5.0, October 2007

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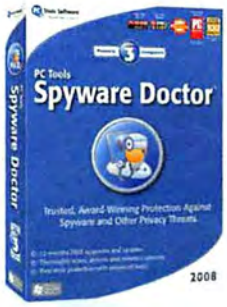

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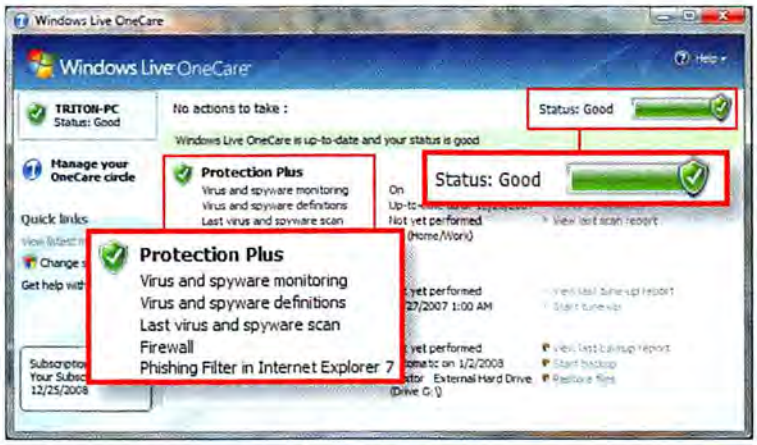
Microsoft's PC Security and Utility Suite Improves

THE SECURITY protection of Microsoft's Windows Live OneCare 2.0 suite is much better than that of the debut version we reviewed more than a year and a half ago (find.pcworld.com/59763). Add to that a low price, and you have a solid, easy-to-use product for computer users who don't want to mess around too much with their software settings.



THE SOFTWARE IS simple to use, largely because it has few settings to configure.

OneCare combines the virus, adware/spyware, and two-way firewall protection of a security suite with the backup and defragging tools of a utility suite. I downloaded and installed OneCare quickly (I had to create a Windows Live ID to do so, however). One $50 license lets you use the software on three PCs, and you can use the program to back up to one or more CD/DVDs, external hard drives, and (new since the first version) networked drive volumes. You can create backups on demand or on a schedule.

The software ran smoothly on two test PCs, one running Windows XP and the other using Vista Home Premium.

Put to the Test

In performance tests by German security research company AV-Test.org, OneCare was reasonably good at detecting known malware samples. It recognized on average 95 percent of the backdoor programs, bots, Trojan horses, and worms in AV-Test.org's collection of 674,589 threats. In our recent roundup of security suites (find.pcworld.com/59765), detection percentages in this test ranged from 69 to 98 percent; though we can't compare exact test results between stories due to differences in sample sets, we can still reasonably conclude that OneCare did fairly well. OneCare also detected a pretty good 88 percent of adware and spyware, and 83 percent of rootkits. OneCare's heuristic ability to detect unknown threats based on their similarity to previously recognized samples was very good too.

On the downside, OneCare has been tardy in responding to new outbreaks. During a six-month period in 2007, Microsoft on average took 24 to 26 hours to release a threat definition update. That reaction time is appallingly slow, especially given that BitDefender and Kaspersky needed on average no more than 2 hours to update their suites.

OneCare has gotten much better at minimizing unnecessary pop-up alerts. The only blatant annoyance I encountered was that it required me to approve Google Desktop as a legitimate program. OneCare didn't drag down my system, either, although in AV-Test.org's tests, the suite's 5-megabytes-per-second scan rate was below average.

Holdouts for best-of-breed protection will still scoff at OneCare, but other users who don't want to think very hard about security should consider it.

—Narasu Rebbapragada

83
VERY GOOD

Windows Live OneCare
Microsoft
Solid, easy-to-use security and utility package.
List: $50 for three PCs
find.pcworld.com/59731

ASK OUR EXPERTS

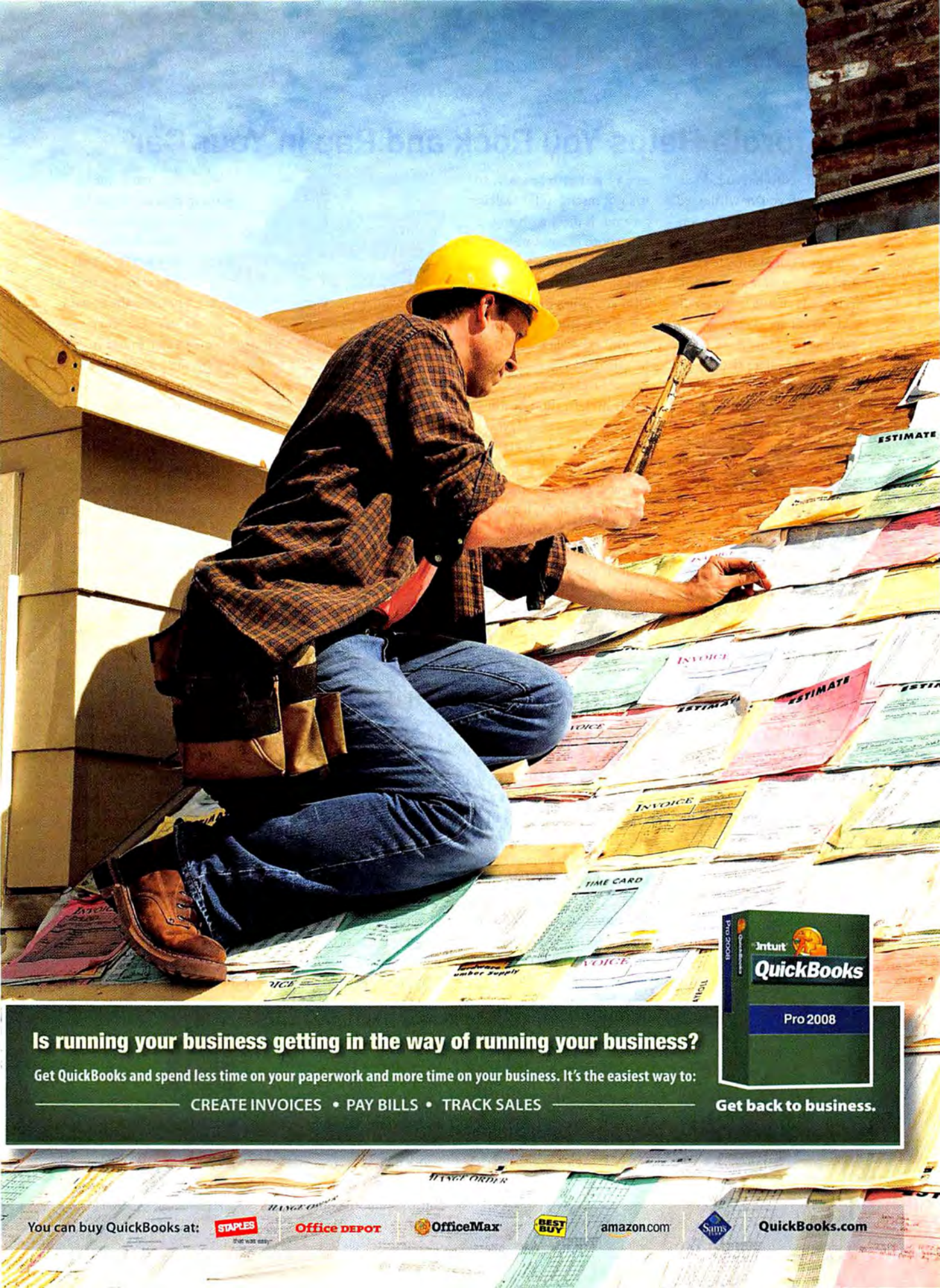
Best Portable Hard Drive?

I AM HAVING difficulty in choosing a portable hard drive. I want it to have a fast data transfer rate, as I need to transfer large files between different computers. I would be carrying it in my backpack, so I'd prefer it to be lightweight and durable.

Kaavya, Manchester, United Kingdom

Senior Products Editor Melissa J. Perenson responds: Look for a product with a 7200-rpm drive inside. Such models may require AC power—some USB ports don't supply enough power, and some FireWire ports don't supply bus power—but they are far faster than the typical 5400-rpm drive in copying data. As for durability, evaluating drives' shock-protection rating is difficult, since no measurement standard exists. If the drive will be knocking around in a backpack, look for a product that claims at least some sort of shock protection. See find.pcworld.com/59707 for a visual tour of portable drives from 12 manufacturers.

E-mail your question to askourexperts@pcworld.com or post it online at forums.pcworld.com.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Motorola Helps You Rock and Rap in Your Car

EVEN IF YOU haven't done it yourself, you've witnessed other drivers doing it: reaching across the front seat to answer a cell phone. It's a bad habit, and one that you can easily rectify using a reliable in-car speakerphone such as the MotoRokr T505.

Slightly bulkier than a garage-door opener, the T505 features a giant clip that attaches to your car's visor. It's a speakerphone, not a Bluetooth headset, so it's not intended for walking around. It pairs with any Bluetooth cell phone.

When someone rings you up, a cool-sounding British female voice announces Caller ID information. To answer, you press the big call button on the front left; though you must reach overhead, you can easily do it by feel. To initiate a call, you can redial the last number by pressing and holding the call button, or if your phone supports it, you can dial with voice commands. I tried the device with an iPhone and a Razr2; in my tests, voices came through loud and clear, with just a hint of fuzziness.

THE T505 ATTACHES to your visor; you must reach overhead to press the device's buttons.

And you're not limited to using the T505 for phone calls: If your phone (or MP3 player) supports stereo Bluetooth, you can also stream music to the device or to your car's stereo via the built-in FM transmitter.

While streaming music, you can control tracks by using the play/pause button on the front right of the T505. You can also stream phone calls to your car's stereo; when you receive a call, music from the phone pauses so you can have a coherent conversation. Calls sounded great over my car's upgraded stereo system, but the quality will depend on your system.

At $140, the T505 is expensive, and its utility is limited if your mobile phone lacks stereo Bluetooth. In that case, this product is probably more speakerphone than you need right now.

—Cathy Lu

85
VERY GOOD

MotoRokr T505 | **Motorola**
Works well, but has features some drivers can't use. List: $140
find.pcworld.com/59725

Broadband Security System Puts You in Control

A NEW BREED of broadband-dependent digital home security systems is making its way to consumers. I tested one such offering, the InGrid Home Kit, and while getting it up and running can take a little work, the control it gives you is certainly worth the effort.

The $300 InGrid kit is a system of devices and sensors that you set up to form a wireless web of protection in your home. The four main parts are the console, which you place by your front door to control the system; the handset, which operates as a mobile console; the base, which charges the handset; and the grid extender, which increases the reach of your system. You also get a series of wireless door-and-window and motion sensors to place wherever you want.

THE CONSOLE (RIGHT) controls the system from a spot on your wall; the handset goes mobile.

Setting up the hardware was easy. Unfortunately, though, I had trouble when I tried to connect my system to the Web-based control center at MyInGrid.com. I eventually had to make a formal introduction between InGrid and my Belkin router.

The InGrid system, once installed, is user-friendly, but the remote-control capability is what really pushes it ahead of conventional, analog home-security products. From your Web-based control panel, you can see every sensor in the house, view a log of events, and arm or disarm the system.

Its setup may be somewhat involved, but in the end the control that InGrid gives you over the security of your home makes it a good deal.

—Mark Sullivan

88
VERY GOOD

InGrid Home Kit | **InGrid**
Worth the time and effort it takes to install. List: $300 plus one-year service contract ($30 per month)
find.pcworld.com/59799

PHOTOGRAPHS: MARC SIMON

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Old BlackJack Whacks New BlackJack II

PCW Test Center

WHEN manufacturers issue new versions of phones, the revamped devices usually rank higher than their predecessors. However, Samsung's BlackJack II sports only minor improvements, such as the addition of alphanumeric keys, and as a result its less-expensive predecessor outranks it in our chart.

Palm's latest PDA phone, the Centro, combines great design with EvDO support.

BLACKJACK II: Samsung made a good PDA phone slightly better.

It's also reasonably priced at $100—but keep an extra battery handy, because the handset ran out of juice after just 4 hours in *PC World* lab tests.

The T-Mobile Sidekick LX received a redesign. We found, though, that it works better as a messaging device than as a mobile phone.

—Greg Adler

MORE ONLINE

For extended test reports and reviews of these cell phones and other models, see find.pcworld.com/59805.

PC WORLD TOP 10 PDA PHONES

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY RIM BlackBerry Curve 8320 $300 find.pcworld.com/58957	88 VERY GOOD	• Battery life (hours:minutes): 10:00 • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 3.9 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: The Curve 8320's voice-over-Wi-Fi feature makes an excellent PDA phone even better.			
2	T-Mobile Wing $350 find.pcworld.com/57415	85 VERY GOOD	• Battery life (hours:minutes): 10:00 • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Slide • Weight: 6.0 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: Offers clear calls and long battery life, but some of the buttons are difficult to press.			
3	T-Mobile Dash (Windows Mobile 6) $350 find.pcworld.com/57387	82 VERY GOOD	• Battery life (hours:minutes): 8:40 • Battery life score: Very Good • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.2 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: The upgrade to Windows Mobile 6 adds support for Microsoft's productivity applications.			
4	Samsung BlackJack $175 find.pcworld.com/56259	82 VERY GOOD	• Battery life (hours:minutes): 6:21 • Battery life score: Good • Overall design: Very Good	• Carrier: Cingular • Form factor: Candy bar • Weight: 3.5 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: This lightweight phone features a slick design and excels at streaming via Cingular's high-speed 3G network.			
5	Palm Centro $100 find.pcworld.com/59131	82 VERY GOOD	• Battery life (hours:minutes): 4:19 • Battery life score: Poor • Overall design: Very Good	• Carrier: Sprint • Form factor: Candy bar • Weight: 4.2 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: A sporty counterpart to the aging Treo gives you EvDO and retains the Palm OS, too.			
6	Motorola Q Global $349 NEW find.pcworld.com/59745	81 VERY GOOD	• Battery life (hours:minutes): 4:37 • Battery life score: Poor • Overall design: Very Good	• Carrier: AT&T • Form factor: Candy bar • Weight: 4.7 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: The Q Global offers solid features for U.S. business travelers, but GPS and broadband fall short overseas.			
7	T-Mobile Sidekick LX $350 NEW find.pcworld.com/59485	80 VERY GOOD	• Battery life (hours:minutes): 10:00 • Battery life score: Superior • Overall design: Good	• Carrier: T-Mobile • Form factor: Swivel • Weight: 5.7 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: This stylish PDA phone works wonders for messaging but can be awkward for phone calls.			
8	Samsung BlackJack II $249 NEW find.pcworld.com/59743	80 VERY GOOD	• Battery life (hours:minutes): 7:11 • Battery life score: Good • Overall design: Very Good	• Carrier: AT&T • Form factor: Candy bar • Weight: 3.5 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: This slim, good-performing smart phone can handle your calling, messaging, and mobile-entertainment needs.			
9	Helio Ocean $249 find.pcworld.com/58953	79 GOOD	• Battery life (hours:minutes): 5:05 • Battery life score: Fair • Overall design: Very Good	• Carrier: Sprint • Form factor: Slide • Weight: 5.6 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: With an innovative design and great features, the Ocean would be a favorite if it had better call quality.			
10	RIM BlackBerry 8700g $150 find.pcworld.com/54240	79 GOOD	• Battery life (hours:minutes): 9:35 • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.7 ounces • Camera resolution: n/a
	BOTTOM LINE: The 8700g is more consumer-friendly than other BlackBerry devices, but it still lacks a camera.			

CHART NOTES: Prices and ratings are as of 1/11/08. Prices are for phones purchased with a two-year service agreement, before any rebates.

PHOTOGRAPH: MARC SIMON

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YX510-PCS-CEL*	✓	✓	✓	✓	✓	✓	up to 2500 sq ft	$399
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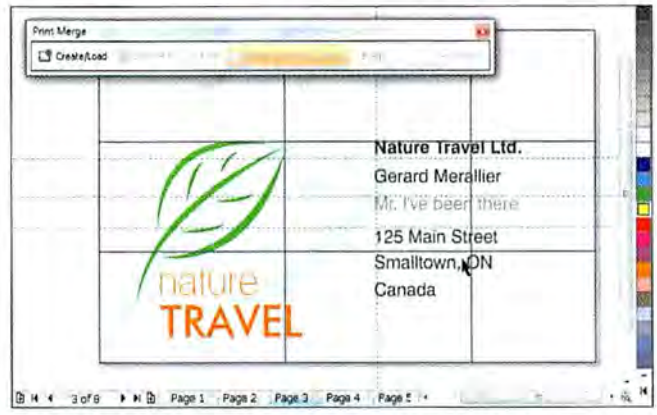
CorelDraw X4: A Pro Alternative to Illustrator

AS THE CENTERPIECE of Corel's Graphics Suite X4, CorelDraw X4 ships with significant new features that, while not flashy, are practical, and substantial enough for professionals to find the upgrade worthwhile. Even the interface has been redesigned to present a clean, intuitive workspace.

CorelDraw is the well-established "other" vector drawing program, covering the same ground as Adobe Illustrator does. You can use it to create illustrations for signs, logos, and technical and industrial designs, and for specialized printing like engraving. Draw also works for designing multipage publications. The growing ranks of people who double as the designated designer in multitasking work environments will appreciate the extensive set of easy-to-modify templates and the intuitive help screens. Draw X4 ships with a substantial library of royalty-free artwork, including 1000 high-resolution photos suitable for commercial projects. And Draw X4 meshes smoothly with Windows Vista Instant Search to sort quickly through images on your computer or network from within Draw's Open Drawing dialog box.

More Improvements

Among the more substantial enhancements is a connection to the WhatTheFont Web site (whatthefont.com): Within the app, you can paste in bitmap captures of type to identify fonts—helpful, for example, for a designer who is asked to duplicate a print brochure's unidentified fonts. Also, you can now preview type flow around images instantly. Publishers who generate data-driven output can use the print/merge features to generate customized publications—so a product press kit, say, could have customized fields that generate a personalized kit for each reviewer.



DESIGNERS WHO GENERATE data-driven graphical output can use the enhanced print/merge features to create custom publications.

Draw has always had an advantage over products in Adobe's design suite in that it is both a full-fledged vector drawing program (like Illustrator) and a solid desktop publishing package (like InDesign). Desktop publishing features in X4 now let you create and edit independent layers on each page of multipage documents, as well as implement master layers throughout a publication for repeating elements (such as page numbers or headers). Illustrators who convert bitmap files to Draw's vector format will spot changes in the bitmap trace feature that allow, for example, combining of colors to simplify trace results. Users who found the trace feature in CorelDraw X3 unpredictable will notice improvements here.

The other significant application in Corel's Graphics Suite X4 is Photo-Paint. Almost abandoned in version X3 of the suite, this bitmap-editing application has some new features, including support for the RAW camera format and interactive histograms for previewing image adjustments. But while CorelDraw is a professional alternative to Adobe Illustrator, Photo-Paint is not a professional photo editing app.

Illustrators and designers who don't use Adobe products (a niche community) will find the improvements in CorelDraw Graphics Suite X4 worth the upgrade.

—David Karlins

83
VERY GOOD

CorelDraw Graphics Suite X4
Corel
Significant upgrade covers ground equivalent to Adobe's pricier apps.
List: $429
find.pcworld.com/59808

TECH TREND

Monitor Sizes: Murky Matters

TO ONE-UP THE competition, manufacturers are releasing off-size monitors (22.1 inches instead of plain old 22 inches, for example). Some makers and retailers are also rounding up the viewable image sizes (calling a 25.5-inch monitor a model in the "26-inch class"). Most have been careful not to misreport their screens' true sizes—but you should read specs carefully.

This is different from the way CRT monitor sizes used to be misrepresented. Some vendors would advertise a display as being 15 inches, for instance, but that was the uncovered tube's diagonal size; the actual image size—the part of the screen not under the bezel—would typically be an inch or so smaller. This practice stopped after the settlement of a U.S. class action lawsuit in the late 1990s (see find.pcworld.com/59443). The moral is simple: Be sure you know exactly what you're buying.

—Danny Allen

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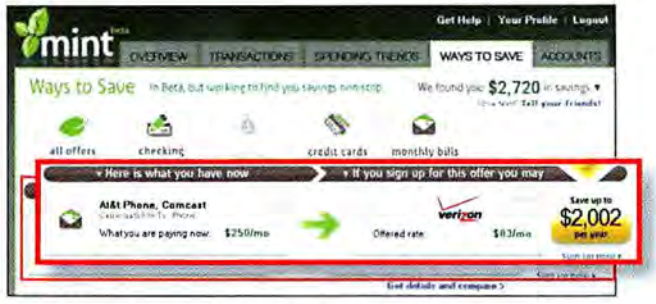
Online Finance Services Show Where It All Goes

IF YOU NEED some help in tracking your income and expenses, you might find a simple, Web-based approach attractive—especially if you monitor multiple bank and credit card accounts online. I saw a lot to like in three such services: Intuit's just-launched Quicken Online, the six-month-old Mint.com, and Mvelopes Personal, to which we gave a World Class Award two years ago.

Mint.com, which opened as a public beta in September, is a great way to dip your toe into managing your personal finances, mainly because it's free. During sign-up, you provide user ID and password info for your existing online accounts; Mint then grabs all the transaction information available, assigns items categories, and gives you graphical snapshots of your income and spending habits based on those categories. Mint's categorizing is often wide of the mark, but you can easily override its choices with another of the service's 80-odd preset categories.

Ways to Save

Mint makes money by presenting you with offers based on the categories you use and your transactions; for example, it showed me several offers that supposedly would save me money on my current phone and cable TV services. You have to read the fine print carefully on such deals to determine if they really would save you any cash. But if you are diligent about properly categorizing transactions, Mint is an attractive and easy-to-use tool that helps you to see where your money is going.



MINT MAKES MONEY by presenting you with offers that are designed to save you money—but make sure you read the fine print carefully.

Intuit's Quicken Online is handsome and easy to navigate. Like Mint, Quicken Online aggregates all your online account transactions, assigns them categories, and uses the categories (which you can override) to make charts illustrating income and expenses—but Quicken Online allows you to add, delete, or edit its categories. Like Mint, Quicken Online will send e-mail or SMS reminders of upcoming bills.

Quicken Online also helps you get a handle on your finances by letting you enter transactions that haven't shown up in your online accounts—a just-mailed check, say. But the service has no connection to the Quicken desktop application: You can't import data from one to the other.

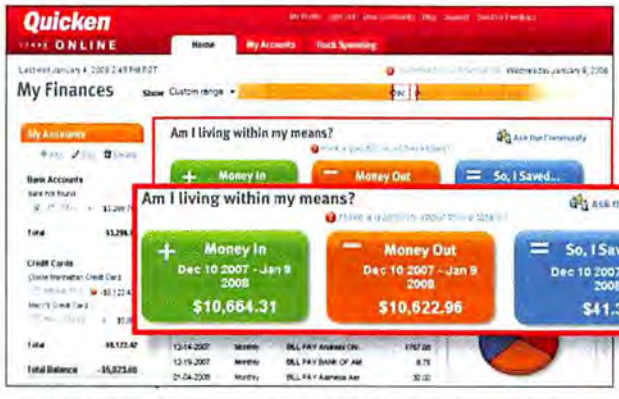
Intuit charges $3 a month for Quicken Online; I saw no ads, and the customization capability is a real plus.

In2M's Mvelopes Personal is more expensive at $8 a month for a two-year prepaid subscription. But it's also more robust, as it includes both electronic bill payments (up to 15 a month) and a system to help you create and stick to a budget.

You develop a budget by creating virtual envelopes for all anticipated expenses (for large once-a-year items such as vacations, Mvelopes calculates how much you'll need to save each month); you then allocate income to the envelopes, prioritizing those for required expenses (such as the mortgage and groceries). The service compares those numbers with your actual outlays based on transactions it retrieves from 14,000-plus institutions.

Choose Mvelopes if you can make use of its bill-pay service; try Mint.com if you just want a better handle on your finances and are willing to look at offers from services that compete with ones you use now. As for Quicken Online, its customization features are a nice touch, but $3 per month seems pricey, especially when Mint offers similar features for free.

—Yardena Arar



LIKE MINT, QUICKEN Online is a service that allows you to see how much money comes in, and where it goes on its way out.

87
VERY GOOD

Mint.com | Mint Software
A good way to get a better handle on your finances. Free
www.mint.com

85
VERY GOOD

Mvelopes Personal | In2M
A robust, capable service that includes budgeting and bill-pay.
List: $8 to $14 a month
www.mvelopes.com

84
VERY GOOD

Quicken Online | Intuit
Most users will be just as happy with the free Mint.com service.
List: $3 a month
www.quickenonline.com

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New Color Inkjet MFP Features DVD Burner

PCW Test Center

MORE IS BETTER in the world of color inkjet multifunction printers. Since all can print, copy, and scan (many can fax, too), adding more paper handling or wireless networking capabilities—as in the Dell 948 All-in-One or the Lexmark X6570, both new—can distinguish an otherwise ordinary unit. A few, like HP's second-ranked Photosmart C5280, can print onto specially coated CD or DVD media.

HP's new Photosmart C8180 All-in-One has a rewritable DVD drive that can etch a label or design on one side of LightScribe-compatible media, and then burn data on the other side.

DVD BURNING BOOSTS the Photosmart C8180's price.

The new Best Buy, Canon's Pixma MX700, lacks such special features but costs half as much. HP's C8180 and Lexmark's X6570 come with control panels and software that are especially easy to use.

—Melissa Riofrio

MORE ONLINE

For more information about color inkjet MFPs and for details on how we test them, go to find.pcworld.com/59827.

PC WORLD TOP 10 COLOR INKJET MFPs

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY Canon Pixma MX700 $200 NEW find.pcworld.com/59701	84 VERY GOOD	• Text quality: Very Good • Graphics quality: Very Good • Tested speed (ppm): 9.1 text / 3.2 graphics	• 30 ppm text • 20 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: A few image-quality and design quirks aside, this MFP offers a capable mix of features for a fair price.			
2	HP Photosmart C5280 $150 find.pcworld.com/58163	82 VERY GOOD	• Text quality: Good • Graphics quality: Very Good • Tested speed (ppm): 7.3 text / 2.4 graphics	• 32 ppm text • 24 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: Versatile MFP handles photo and CD/DVD printing as easily as everyday copies or scans.			
3	Canon Pixma MP470 $100 find.pcworld.com/58433	82 VERY GOOD	• Text quality: Good • Graphics quality: Very Good • Tested speed (ppm): 8.7 text / 2.1 graphics	• 22 ppm text • 17 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: This capable unit offers full photo capabilities and a 1.8-inch LCD for a surprisingly low price.			
4	Canon Pixma MP530 $180 find.pcworld.com/57390	80 VERY GOOD	• Text quality: Good • Graphics quality: Good • Tested speed (ppm): 8.9 text / 3.2 graphics	• 29 ppm text • 19 ppm graphics • 9600-by-2400-dpi maximum true color resolution
	BOTTOM LINE: This is a well-equipped MFP for the home office, but it prints digital photos only from your PC.			
5	HP Photosmart C8180 All-in-One $400 NEW find.pcworld.com/59702	79 GOOD	• Text quality: Good • Graphics quality: Good • Tested speed (ppm): 7.0 text / 2.7 graphics	• 34 ppm text • 33 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: With a rewritable DVD drive, unit offers do-it-all digital photo processing—but office features are sparse.			
6	Canon Pixma MP210 $80 find.pcworld.com/58439	78 GOOD	• Text quality: Good • Graphics quality: Very Good • Tested speed (ppm): 8.6 text / 2.1 graphics	• 22 ppm text • 17 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: Jump at the low price only if you can tolerate a confusing control panel and sparse copy capabilities.			
7	HP OfficeJet Pro L7680 $400 find.pcworld.com/57391	78 GOOD	• Text quality: Fair • Graphics quality: Fair • Tested speed (ppm): 13.1 text / 4.2 graphics	• 35 ppm text • 34 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: Gives you the higher-end office features you'd expect from a color laser MFP, but for much less money.			
8	Lexmark X6570 $150 NEW find.pcworld.com/59703	77 GOOD	• Text quality: Good • Graphics quality: Good • Tested speed (ppm): 7.2 text / 1.7 graphics	• 28 ppm text • 24 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: High-end features, namely automatic duplexing and Wi-Fi, help the X6570 stand out in its price range.			
9	Dell 948 All-in-One $149 NEW find.pcworld.com/59704	77 GOOD	• Text quality: Good • Graphics quality: Good • Tested speed (ppm): 7.6 text / 1.7 graphics	• 28 ppm text • 25 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: Otherwise average MFP gets a lift from its standard automatic duplexing and automatic document feeder.			
10	HP Photosmart C5180 $200 find.pcworld.com/55966	76 GOOD	• Text quality: Fair • Graphics quality: Fair • Tested speed (ppm): 7.3 text / 2.8 graphics	• 32 ppm text • 31 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: Nice photos and networking come at a good price, but this model's plain-paper printing looks mediocre.			

CHART NOTE: Prices and ratings are as of 1/3/08. Speeds are in pages per minute (ppm); resolutions are in dots per inch (dpi).

PHOTOGRAPH: MARC SIMON

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T071112-01

Sonos Music System Gets Cheaper

THE SONOS DIGITAL Music System, introduced in 2004, is a well-designed, generally reliable way to stream music from PCs and hard drives on your home network to multiple rooms in your house. It is also expensive—at least $1000 for a basic system. But the new ZoneBridge 100 connector might make a Sonos system cheaper for you.

75
GOOD

ZoneBridge 100 | Sonos
Affordable device lowers the total cost of a very good music system.
List: $99
www.sonos.com

Previously a Sonos system consisted of ZonePlayers—networking devices that output music to your receiver or to a set of speakers—and the Controller, a remote with a 3-inch LCD. You control your music either through the Controller or via the Sonos software you install on your PC.

The system isn't completely wireless: You have to make a wired connection between your router and at least one ZonePlayer (the other hardware can operate wirelessly). But the cheapest ZonePlayer is $350, a lot of money if you merely wish to listen to music in a room other than where your router resides. In that instance, the new ZoneBridge is a better choice. It doesn't output music, but serves as the wired connection to your router and costs only $99.

THE $99 ZONEBRIDGE makes a wired connection to your router.

PHOTOGRAPH: MARC SIMON

My experience with a Sonos system that included a ZoneBridge was a little spotty. Occasionally during my two weeks of testing, the bridge lost its connection to the ZonePlayer I was using in my dining room (about 50 feet away), and I then had to reestablish the connection to the player. That took only a minute or two, but was still a hassle. Also, a number of times the music cut out for 30 seconds or so, and then came back on its own.

I'd still recommend a ZoneBridge if you're going to spring for a Sonos system and your router is in an area where you don't plan on listening to your tunes.

—Edward N. Albro

Special Advertising Supplement

Business continuity solutions made easy

R-Studio and other PC utilities from R-Tools get new features and functions

With newly added storage support, **R-Studio**, the Vista-ready business continuity solution, is better than ever.

R-Studio now features support for non-typical RAID configurations and can explicitly specify parameters like block size and order, offsets, and even the number of stripe blocks.

Recently **R-Studio** was also enhanced to include HFS and HFS+ file systems support, UFS/BigEndian support, GPT partition layout schema support and Apple partition map support. These and other features make **R-Studio** the most comprehensive solution available for IT specialists and advanced users who need to recover or undelete lost data on a local or remote computer or server.

PCWorld Advantage Marketing

Other business continuity solutions in the R-Tools lineup include improved **R-Drive Image**, which enables users to quickly, confidently and totally restore their systems after a major crash, attack or hardware failure. A new implemented technology gives users gains of up to 300% in speed for image creation and disc copy operations.

Continuing to make improvements across key products, R-Tools has also buffed up **R-Wipe & Clean**, which automatically keeps applications free and clear of harmful clutter. **R-Wipe & Clean** now supports all recent versions of Internet Explorer, Mozilla/Mozilla Firefox, Opera, NETSCAPE, AOL, MSN, and BT Yahoo browsers as well as Google and MSN toolbars, while removing traces from more than 200 third-party applications, including Microsoft Office 2007.

Other superb utilities and solutions from R-Tools include:

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

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

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R-Tools Technology Inc.
www.r-tt.com

Price Is Too High for LG's Set-Top HD Player

LG ELECTRONICS MADE a splash earlier this year with the first set-top high-def video player that could play both Blu-ray and HD DVD movies; however, critical missing features kept that model from being a home run. The new $850 Super Blu BH200 rights its predecessor's wrongs by fully implementing the HD DVD spec—which means that now you can properly view the fancy menus and extra content on an HD DVD disc. The player also adds support both for audio CD playback and for upscaling standard-definition DVDs to 1080p.

THE BH200 SPORTS a sleek and stylish design, with a black finish.

The more I used the BH200, the more I liked its design. It's sleek and stylish, with soft-touch buttons on the front. A clean, easy-to-follow on-screen interface makes using the player simple.

My one noteworthy complaint: The BH200 is poky with some discs—at startup, when identifying whether you've inserted a Blu-ray or an HD DVD disc, or when you're changing chapters or navigating disc menus. Some discs have more pauses during navigation than others, but some have no issues at all. Load times for Blu-ray and HD DVD versions of the same movie appeared comparable on the titles I timed.

We have not yet lab-tested the player's image quality; look for results and our PCW Rating on our Web site.

Although the BH200 breaks down the barriers between Blu-ray and HD DVD, I think the price is just too high, especially when you can buy a Blu-ray Disc player and an HD DVD player together for less.

—Melissa J. Perenson

Super Blu BH200
LG Electronics
PCW Rating: Pending
The convenience of both formats isn't worth the cost. List: $850
find.pcworld.com/59837

PHOTOGRAPH: MARC SIMON

Your Virtual Voice Coach

I HAVE TO give SoundTech credit: The company's Vocal Trainer Kit has taken my singing to an entirely new level. The package—the Vocal Trainer software, a microphone, and a cable to connect the mic to your PC—is designed to improve the abilities of singers of all levels. It does a good job.

After connecting the mic and firing up the software, you sing a sample scale of notes so it can analyze your vocal range. From there, you can select any of 20 tutorials that are designed to help you develop good tone, sing a range of pitches, and read music. You also can skip ahead and begin singing actual songs, karaoke style. At the end of each song, you receive a rating of 1 to 100, based mainly on the accuracy of your pitch throughout.

My first attempt at "America the Beautiful" earned a mark of 34; by the third try I was up to a 69. *Do Re Mi.*

—Michael S. Lasky

THE MICROPHONE ALONE nearly justifies the $90 price tag.

90
SUPERIOR

SoundTech Vocal Trainer Kit
SoundTech
Well-priced package will unleash your inner Pavarotti. List: $90
find.pcworld.com/59781

DOWNLOAD THIS

LAURA BLACKWELL

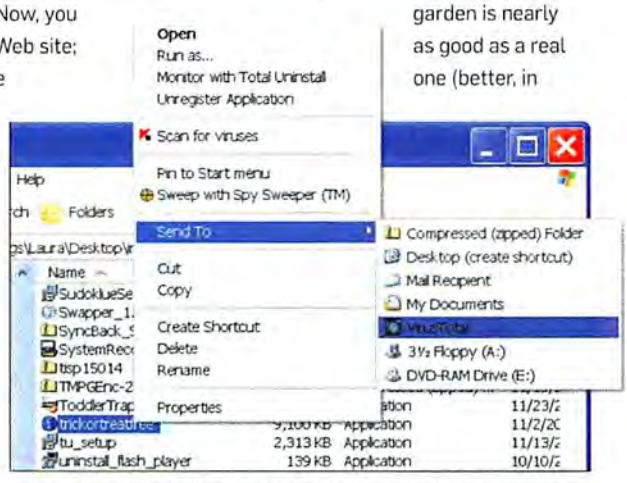
Malware Scanner, Web-Use Aid, Fun Garden

WHEN IT COMES to computer security—and job security—why take risks? This month, I have a thorough but easy-to-use virus scanner, a Firefox productivity booster, and an engaging simulation game. The two freebies and the free trial also pose little peril to your pocketbook.

A Second (or Up to 32nd) Opinion

We gave a 2007 World Class award to the free online virus detection service VirusTotal.com, which scans files via dozens of third-party security programs (32 at last count, including big names such as McAfee and Panda). Now, you can skip surfing to VirusTotal.com's Web site; instead, run the service's equally free VirusTotal Uploader program, which is even easier to use than VirusTotal.com. Right-click the questionable file, select *Send To*, and choose *VirusTotal* from the send-to options. If no browser window is open, VirusTotal will open your default browser to show you the scan results.

Hispasec Sistemas's VirusTotal Uploader gives no guarantees, but if your file receives a clean bill of health from the likes of Avast, AVG, Kaspersky, McAfee, and Panda, you may not feel a need for opinion number 33. Free, find.pcworld.com/59795.



VIRUSTOTAL UPLOADER SHOWS scan results in your browser.

Manage Your Surfing

It's difficult to resist YouTube, online games, personality quizzes, and the other Web time-wasters. When you're at work, though, resist you must. LeechBlock, a free Firefox extension by James Anderson, helps you protect your focus and productivity—on your own terms.

LeechBlock does so by using the blacklists and rules you define. In its tabbed window, you create up to six renameable "block sets" (one for video sites, say, one for games, and so on). You can assign each block set its own blocking rules. For example, you can specify days of the week and times of the day when sites should be blocked, and you can set the number of minutes you can spend at a frivolous site (during breaks) before LeechBlock kicks in. By default, it shows you its own page when it's blocking, but you can choose a different redirect.

This customizability makes LeechBlock a great tool for folks who need a little help keeping their Web use under control. You might occasionally feel stifled, but it's better than having your boss catch you filling in check boxes to reveal which *Harry Potter* character you're most like. Free, find.pcworld.com/59796.

A Bumper Crop of Fun

We all need an escape at times, and a virtual garden is nearly as good as a real one (better, in some seasons). The demo version of Alice Greenfingers—a simulation game from Arcade Lab—lets you transform a plain backyard into your own pastoral paradise.

Game play is simple, requiring just a few pop-up hints to get started. You dig in the dirt, sow seeds, and nurture your plants until they bear fruit (or flowers, or vegetables) to sell at the farmer's market. Alice really means business; the game tells you the current demand for crops, so you can tweak the prices of your wares and rake in the dough.

The Alice Greenfingers demo works for just 1 hour. For more fun on the farm, you'll have to pony up $20. As the paid version progresses, the pace of harvesting and selling gets quite frantic. If you buy the license, don't be surprised if you find yourself still playing when the rooster crows. One-hour free demo, $20 to play further, find.pcworld.com/59797. ●

PHOTOGRAPH: MARC SIMON

PICTURE THIS!

With FineReader® 9.0 from ABBYY, users capture document images with a digital camera and convert them to editable files

JUST ABOUT EVERYONE has felt the frustration of trying in vain to convert paper documents or photographed documents into cleanly formatted, editable and searchable files. Doing so has usually meant hours of costly, painstaking retyping and reformatting.

Now, by harnessing a major breakthrough in OCR technology, ABBYY is offering FineReader 9.0, delivering startling capabilities to convert paper and photographed documents into highly formatted, highly accurate Microsoft Word files. As a result, users can reap dramatic increases in productivity from the 99.7% text recognition and text conversion accuracy the solution delivers.

With a digital camera acting as a portable scanning device, users just snap digital photos of the documents and transfer them to a PC. All camera OCR features are automatic, requiring no manual settings. With the images on the PC, the FineReader 9.0 software automatically converts images to editable Microsoft Word, Excel or even searchable PDF files–with one click of the mouse.

And FineReader 9.0 goes way beyond simply converting the images. It automatically detects and adjusts for resolution quality and accurately distinguishes images from text. FineReader 9.0 also self-corrects image distortions, such as open-book curves, while offering split-page viewing as well.

FineReader 9.0 comes with powerful capabilities to recognize the logical structure of a document as it progresses from page to page, intelligently knowing how various document elements should be treated when exporting them to the different Microsoft application formats. Thus, discrete elements such as headers, footers, page numbering, fonts, signatures, and so on are all retained, but in a completely searchable and editable format.

For more information on this exciting alternative to costly retyping, and to download a free trial of FineReader 9.0, go to www.TryFineReader.com.

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Our CameraOCR® lets you convert documents into searchable PDFs.

If you need to convert paper documents into electronic files, then you should know that your digital camera – partnered with FineReader® 9.0 – will let you do that and a lot more. FineReader 9.0 allows you to convert those documents into editable and searchable Word, Excel or PDF files. And with a 99.7% accuracy rate, costly retyping is virtually eliminated, increasing both productivity and efficiency. So the next time you need to convert paper files, get ABBYY FineReader® 9.0 – picture-perfect documents every time.

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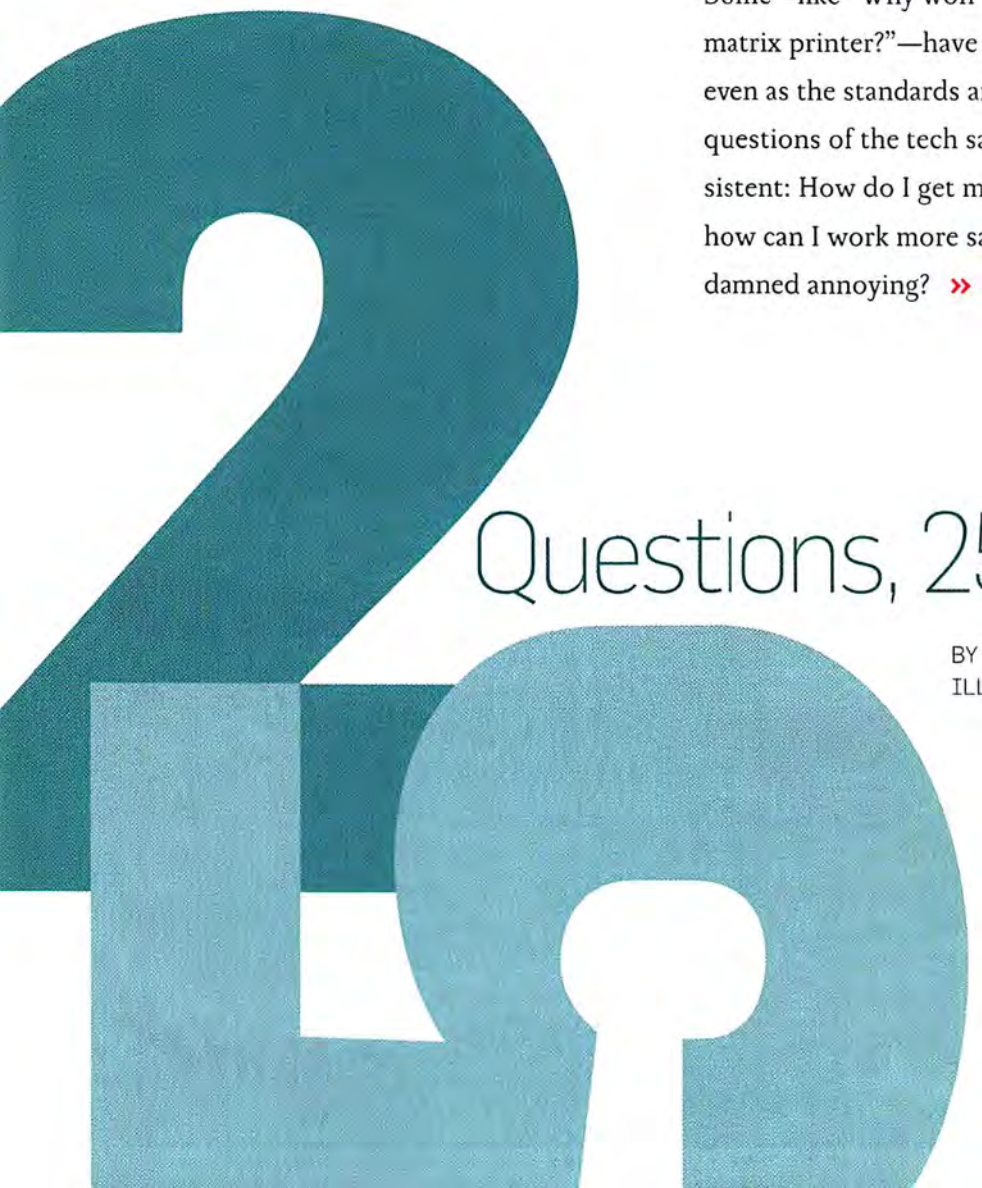
How can you make Vista less annoying? Or back up your data easily? Or preserve your pricey new HDTV's picture? We've got solutions for these and 22 other common tech conundrums.

OVER THE PAST 25 YEARS, readers have asked *PC World* thousands of questions about technology. Some—like "Why won't DOS recognize my dot-matrix printer?"—have lost a bit of their urgency. But even as the standards and specs change, the central questions of the tech savvy remain remarkably consistent: How do I get my devices to work together, how can I work more safely, and why is Windows so damned annoying? »



Questions, 25 Answers

BY LINCOLN SPECTOR
ILLUSTRATIONS BY BARRY BLITT

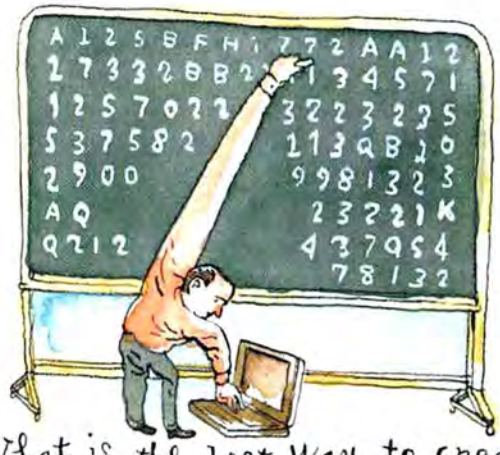
Inquiring Minds

Why should I buy a desktop instead of a laptop?

Why can't my XP PC see my Vista PC on the network?

Why is my e-mail landing in friends' spam boxes?

What is the best way to create strong passwords?



How can I get my Wi-Fi signal to the far end of my house?

Should I turn off my PC at night?

How we come up with the answers, though, is changing. In the past, responses appeared in the form of personal messages from editors or in my column, *Answer Line*. But the Web lets us invite you into the conversation. We've put all 25 of these questions, with my answers, into PC World.com's community wiki. I've already received some great feedback from our community members. Want to join the discussion? Head to forums.pcworld.com. You'll find documents dedicated to each question.

25 YEARS OF PC WORLD: MAY 1992

> "Not a month goes by that we don't get letters asking whether to leave PCs on all the time or turn them off at night...if there were a definitive answer one way or the other, we're convinced we would have uncovered it by now."
>
> *–The Help Screen Q&A column, May 1992, avoiding taking a stance on a dilemma that comes up again in this very article (see page 92).*

Is There a Downside to Using Free Security Programs?

Yes, but not so problematic a downside as to make free security programs unacceptable. You lose the convenience of a one-program-does-all security suite. And companies that don't charge you seldom offer great tech support. (Then again, neither do some companies that do charge you. In fact, some of the biggest hassles readers report about security programs involve billing snafus.) Also, the last time PC World looked at spyware fighters (to see the full report, visit find.pcworld.com/59713), the free programs performed relatively poorly.

Yet if you know what you're doing, a software combination like Comodo's firewall (find.pcworld.com/59714), AVG's free antivirus (find.pcworld.com/59715), and Spyware Blaster (find.pcworld.com/59716) will probably keep you safe.

Not all free security programs can be trusted. Some are scams and amount to malware themselves. So don't use one unless you've heard good things about it from a reliable source.

For just such a source, consult Preston Gralla's "15 Great, Free Security Programs" (find.pcworld.com/59717).

How Can I Make Vista's UAC Less Annoying?

Many Vista users hate User Account Control, the security system that pops up a warning every time they try to do something as serious as installing software or as innocuous as changing the system's clock. Luckily, a free program called TweakUAC can turn UAC off for Administrator accounts but leave it on for everyone else. Just run the program (which you can download from find.pcworld.com/59829), select *Switch UAC to the quiet mode*, and click *OK*.

But this expedient has its risks. Vista deems this setting a problem and so notifies you. Sure, you can turn off the warnings or learn to ignore them—but either way, you risk missing other, more important warnings.

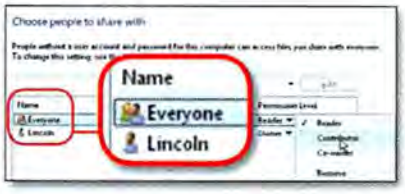
Another option: If you use Vista Pro or Ultra, you can fine-tune your system's UAC settings. Select *Start*, type **secpol.msc**, and press **<Enter>**. Navigate the left pane to *Local Security Settings•Local Policies•Security Options*, and scroll to the bottom of the right-hand pane for several User Account Control options. Experiment with them until you find something to your liking.

PHOTOGRAPH: ROBERT CARDIN

Why Can't My XP PC See My Vista PC on the Network?

Microsoft designed Vista's networking to be both secure and simple. So much for what they intended. Some networking headaches are specific to Vista, and others existed before Vista and continue to exist. To eliminate problems of the latter type, read, "What to Do When Network PCs Don't See Eye to Eye" (find.pcworld.com/59718).

If that article doesn't solve your PC's problem, the issue may hinge on how you share the computer's folders. Vista's default setting lets you share folders only with yourself.



SHARE YOUR VISTA folders with 'Everyone', and they'll be visible on your network.

Right-click a folder you want to share, and select *Share*. If Vista responds with the message "This folder is already shared," click *Change sharing permissions*.

In the resulting File Sharing dialog box, type **everyone** into the unnamed field next to the Add button, and press **<Enter>**. The word "Everyone" will appear in the list of people with whom you can share the folder. On the right side of the dialog box, select the permission level you want to assign to people sharing the data. Click *Share* to close the dialog box (which may take some time to process your request).

Is TV Burn-In a Real Problem?

Yes, it is—especially for plasma and CRT sets. A static image that remains on screen too long can burn into the screen's phosphors and remain there, possibly permanently. And if a portion of the screen goes unused for extended periods of time—for instance, if you watch a lot of TV programs in "normal" (that is, 4:3 aspect ratio) mode—the outline of the black bars that your set uses to frame the image could become a permanent part of your television.

If you have a plasma TV, you may want to restrict the amount of time you spend watching stations with permanent logos or ticker tapes, or watching in 4-by-3 mode—or you may want to switch from black bars to the TV's gray bar option. This is especially true during the first few months you own the set; the older a TV gets, the less likely it is to suffer from burn-in. If you like older TV shows or movies made before the mid-1950s, and you prefer to watch programs as they were meant to be seen, you should probably not buy a plasma set. For more information on handling aspect ratios and avoiding burn-in, read Becky Waring's article, "How to Get the Most Out of Your HDTV" (find.pcworld.com/59830).

LCDs aren't as susceptible to retaining images as plasmas are, but it can happen. I know of one instance where a new LCD television was permanently damaged by very heavy 4-by-3 viewing (about 6 hours a day). Of course, since they lack phosphors, LCD screens can't suffer from true burn-in. Call it "image retention" instead, but for all practical purposes it's the same thing.

With any of these technologies, lowering the set's brightness and contrast improves your odds of avoiding damage.

As far as I know, DLP sets don't suffer from image retention problems.

Can Failing to Drain Batteries Completely Before Recharging Them Still Cause Problems?

No. Only nickel cadmium batteries exhibited the notorious "memory effect." In fact, today's lithium ion batteries have the opposite problem: Draining the battery can shorten its life. So avoid letting the charge drop below 10 percent.

Heat affects lithium ion batteries, too. A laptop battery will last longer if you remove it before running the notebook for lengthy periods on AC power.

But anything you do merely delays the inevitable. These batteries start wearing out on the factory floor, and eventually they'll go bad even if they never see an electric current. Remember that before you buy a spare battery as protection against the day your current one dies.

JUST WONDERING...

When Will Moore's Law Run Out?

TRANSISTORS can get only so small. As Gordon Moore himself said in a 2005 Techworld interview (find.pcworld.com/59857), "It can't continue forever...We have another 10 to 20 years before we reach a fundamental limit."

But Ray Kurzweil, author of *The Age of Intelligent Machines*, is more optimistic. "Moore's Law is a law of human ingenuity, not of nature," he told me in an e-mail exchange. He agrees that, taken literally, Moore's Law (which asserts that the number of transistors packed into a given area increases exponentially) "will probably come to an end prior to 2020..." But he believes that, before that happens, researchers will find another paradigm for shrinking code and information.

How much longer can this go on? "Beyond four hundred years," Kurzweil says, "the laws of physics will have to be substantially altered for Moore's Law to continue."

That's a long way off. In the meantime, you can expect exponential improvements to continue "well into the 21st century," according to Kurzweil, "far past the point when computing technology can match and exceed the human brain."

What's the Easiest Way to Back Up Data?

Over the Internet—since that approach gives you both a constant, background backup and physical separation.

The easiest Internet backup service I know of is MozyHome (mozy.com/home). Once you set it up, it quietly backs up your files in the background as you work. The first, full backup can take days (you didn't ask me for the fastest way to »

back up data, did you?), but you'll barely notice it after that. Unlimited backup (for one PC) costs just $5 a month.

Should I Scan From a Print or From the Negative?

In theory, you should use the negative. It's the best version of the picture.

In reality, however, not all scanners support transparencies (negatives and slides). And some that do—my Epson 2480, for instance—don't produce a satisfactory image that way.

Also, if you're scanning only a few shots, rather than an entire roll, you'll find it easier to identify the ones you want from prints than from negatives.

If you do scan from negatives, use a resolution of 2000 dots per inch or greater. A negative contains more information than a print does, but packs the information into a much smaller space.

What Is the Best Way to Create Strong Passwords?

No encryption is secure if the password you use is easy to guess, and these days any word in the dictionary falls into that category—as do your kids' names.

So use a long string of seemingly random letters and numbers. Make up an easy-to-remember but impossible-to-figure-out formula using family names, birthdays, and memorable words. For instance, you might use your kids' name spelled backward, with every third letter capitalized, followed by your birthday squared—except that a formula printed in *PC World* might not be safe either. Come up with your own formula.

For more on the subject, read our forum topic, "How to Create a Strong Password" (find.pcworld.com/59719).

You shouldn't depend on a single password everywhere you go. Use different ones for various Web sites and bank accounts. Write the passwords—or better yet, the formulas for coding them—on a business card, and carry it in your wallet in case you forget.

Or download Password Safe, a free, open-source password manager, from find.pcworld.com/59831. Then you'll need to remember only the password for Password Safe itself.

How Can I Get My Wi-Fi Signal to the Far End of My House?

I have plenty of potential solutions to this problem, but no guarantees.

First, try moving the router. The higher you put it, the better. Keep it away from wireless phones, microwave ovens, washers, dryers, and large CD collections.

If that approach doesn't help, consider buying one of the following items:

END DEAD SPOTS with an 802.11n router, such as the Trendnet TEW-631BRP (top), or a range extender, such as the Linksys WRE54G.

A large external antenna. These are very easy to set up and put to work.

A range booster. These tend to be a pain to set up. You have to plug them directly into a PC so you can optimize all of those pesky Wi-Fi settings, and then you have to find a good location for them on the outskirts of your router's range and near an AC outlet.

An 802.11n router. Installing one solved my range problem—and without a single 802.11n-equipped PC in the house.

Do I Need a 64-Bit PC—And If So, Why?

No, you don't. Not yet, anyway. And probably not for a long time.

A 64-bit CPU has two strengths: It can run 64-bit apps, and it can handle more than 4GB of RAM. Of course, a 64-bit system won't run unless you have a 64-bit operating system (like Vista 64-bit).

In the indefinite future 64-bit applications will probably run faster than their 32-bit counterparts, at least for CPU-heavy jobs like video editing. But as yet

JUST WONDERING...

Does Vista Have Any DOS 1.0 Code?

TIM PATERSON WROTE QDOS, the basis for MS-DOS 1.0, before it was sold to Microsoft. A Microsoft programmer told him in the mid-1990s that "we still have some of your code in there."

Today, a Microsoft spokesperson says DOS 1.0 content has gone the way of the giant ground sloth: "There hasn't been DOS code in Windows since before XP."

Then 'splain this: If you load Vista's Command Line environment and type the MEM command, the program reports "655360 bytes available to MS-DOS."

And it still runs such old DOS programs as the early spreadsheet Visicalc, a major application in pre-DOS days and one of the first ported to DOS. If you don't believe me, download the DOS version of Visicalc from find.pcworld.com/59722 and see for yourself.

PHOTOGRAPH: ROBERT CARDIN

almost no 64-bit Windows apps exist. Luckily, the 64-bit versions of XP and Vista support 32-bit programs, too.

More RAM improves performance, but we're not yet at a point where we need more than 4GB. Undoubtedly, you will eventually need more, but you'll want a whole new computer by then.

Finally, Vista 64-bit has even more compatibility problems than Vista 32-bit has, starting with the fact that it won't run 16-bit Windows or DOS programs. And since it comes with a 64-bit version of Windows Explorer, standard Explorer extensions won't work.

Wait a few years. Eventually, 64-bit will become an intelligent choice.

Why Should I Buy a Desktop Instead of Laptop?

If you don't need a laptop's portability, a number of factors favor a desktop.

Better price-to-power ratio: You can buy a cheap laptop, and you can buy a cheap desktop, but a cheap desktop has the power of an expensive laptop.

Cheaper ownership costs: Because they are made from off-the-shelf components, desktops are cheaper to upgrade and to repair. They're less likely to *need* repairs, too. No one ever drove away after putting a desktop PC on the roof of their car and forgetting it was there.

Less likely to be stolen: Desktops don't disappear during a bathroom break in a café or a nap at the airport.

Ergonomically friendlier: You can't have good posture if your keyboard and your monitor are just inches apart, although you can get around this problem by plugging a full keyboard and a mouse into your laptop whenever practical.

On the other hand, laptops use less electricity, and you can take them places.

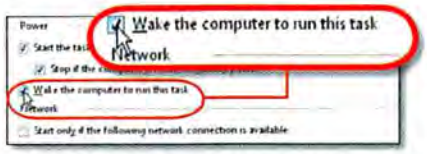
How Can I Get My PC to Boot at a Scheduled Time?

If you can arrange for your computer to boot at a scheduled time, you can shut it down at the end of the workday and then come back to a freshly booted PC the next morning—or even to a freshly booted PC that has just completed a virus scan.

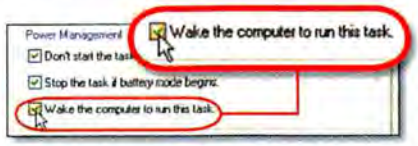
Your PC's setup program may let you schedule a boot. To find out, start your computer and watch the screen. Before Windows loads, a message will tell you which key to press to enter Setup. Once the program has loaded, search its menus for an appropriately named option.

If the option isn't there, consider using Windows' Scheduled Tasks tool to establish a regular wake-up call for your system. This call will rouse your PC from hibernation or standby mode (called *sleep* in Vista), but not if the machine is fully shut down.

You'll find the Task Scheduler inside the Start menu's System Tools submenu; to get there, select *All Programs•Accessories•System Tools*. Creating a new task is easy and obvious. To make any task a wake-up task, check the *Wake the computer to run this task* option. In XP, that option resides in the Settings tab of the task's Properties dialog box. In Vista, it's on the Conditions tab. Scheduled Tasks won't work in XP unless you have a log-on password.



VISTA ALLOWS YOU to wake a PC from hibernation or standby to perform a task.



XP'S TASK SCHEDULER will do the same, so you can defrag your hard drive at 3 a.m.

What Features Are Most Important in a Digital Camera?

Assuming that you aren't a professional photographer, consider these essentials:

Resolution: More is better, but don't get hung up on it. A 4-megapixel picture makes great prints, though it doesn't leave much flexibility for producing outstanding prints after cropping.

Optical zoom: *Digital zoom* is essentially a fancy term for "no zoom."

Short lag time: You see the perfect shot and press the button; 2 seconds later, your subject has left the frame and your camera clicks. The shorter the lag time, the less often this will happen.

SD Card slot: Since they're the industry standard, SD Cards are inexpensive and widely available, and you won't have trouble finding readers for them. »

JUST WONDERING...

Why Is Internet Access Slower in the U.S. Than in Other Developed Nations?

ACTUALLY, THAT CLAIM is a bit of an exaggeration. A 2007 study by the Information Technology and Innovation Foundation rated the United States 16th out of 30 developed nations in throughput, with an average speed of 4.8 megabits per second (it finished 12th in an overall ranking that included penetration and price). Japan came in first at 61 mbps; the average speed for all 30 nations considered was 9 mbps.

Why the difference? According to ITIF president Robert D. Atkinson, "we've been going down in ranking since 2001...We've increased, but not as fast as other countries."

One disadvantage: The U.S. population isn't as concentrated as that of Japan or South Korea (number two in the rankings). "In Seoul," Atkinson says, "an awful lot of people live in multiunit high-rise buildings."

There are policy differences, too. "Other governments have had more-proactive broadband policies," Atkinson says. "Korea and Japan used fairly aggressive subsidies for fiber and broadband." And Canada (in 10th place) has made an effort to connect rural communities, experimenting with WiMAX and satellite.

Right size: Does it fit comfortably in your hand and in your pocket? Are the dials large enough that you can set them easily? Is the LCD large enough?

Why Is My E-Mail Landing in Friends' Spam Boxes?

Maybe because you misspelled *Viagra*.

Seriously, some spelling checkers get suspicious when they see "cute" spellings or unusual characters inserted into words, so it's best to avoid these.

When possible, use your domain's outgoing mail server. An outgoing server whose name doesn't match your domain name raises a red flag, unless it's a well-known one, like Gmail or Yahoo.

Also, avoid links to graphics on the Web. And visit Robtex (www.robtex.com) to see if your IP address or host name is blacklisted. It happens, even to the innocent.

Is It Safe to Overclock My CPU?

Unless you know what you're doing, no. A CPU is rated at a certain speed for a reason. The excess heat generated by an overclocked CPU can reduce your PC's stability, shorten the CPU's lifespan, damage other components, and introduce data errors. You can counter heat problems with more and better fans and larger heat sinks—but again, you need to know what you're doing.

If you want to take the risk anyway, first read Kirk Steers's article, "The Cheapskate's Guide to Supercharging Your PC" (find.pcworld.com/59720).

Should I Turn Off My PC at Night?

Leaving your PC on permits your system to scan for viruses and to back up data while you sleep, and it lets you avoid the hassle of booting in the morning. But shutting down saves power. What's more, Windows tends to build up garbage and problems as it runs, and a fresh boot a day keeps the errors away.

You should be aware that compromises are possible. One option is to hibernate the PC, which won't get rid of the garbage but will save as much power as shutting down the PC. Alternatively, you can put the PC into sleep mode (also known as Standby), which saves some power (though not as much as hibernation does) and allows your PC to wake up very quickly.

If you use the sleep or hibernate option, you can run maintenance programs in the middle of the night. For details, see "How Can I Get My PC to Boot at a Scheduled Time?" on page 91.

Can I Boot From a USB Drive?

USB flash drives make good emergency and alternative boot devices—unlike CDs and DVDs, they're writable. Put Linux on a flash drive, and you don't have to fool with hard-drive dual-boot options.

And you can probably do it. Most modern PCs can boot from a USB device if you set them up to do so.

You'll need to go into your hardware setup screen to find out whether your system will let you boot from a USB device. When you boot up, watch for a message about entering the setup program. Once in Setup, look for a Boot menu and then for USB options on that menu. You may need to enable booting from a USB drive and place it ahead of the hard drive in the boot order.

What can you boot from a USB drive? Not Windows XP or Vista, which only work from an internal drive. But DOS, Windows PE, programs that are built around Windows PE, and many flavors of Linux will boot from USB devices.

JUST WONDERING...

What's Vista Doing With All That RAM?

VISTA APPEARS TO use almost all of your RAM, even when no programs are running. But that's good, not bad.

I checked for free RAM on an XP machine carrying 1GB of memory, with no programs running. The result: 811MB of free RAM. On a Vista machine in the same situation, the figure for free RAM was a big goose egg.

So why is that good? Vista puts all of its unused RAM into a cache called SuperFetch. That's a better way to store the RAM than letting it sit idle, and should improve performance.

When a program needs more RAM, Vista takes it out of the cache and gives it to the program.

What Are the Best Sites for DRM-Free Music?

I've taken the pledge! I will no longer buy music in any form that limits the devices I can play it on once it's mine. For that matter, I won't buy music from online stores that insist on installing software on my PC, either.

And upholding that pledge is easier than ever, thanks to sites like Amazon, Audio Lunchbox, and eClassical.

Amazon.com: The big retailer gets the big labels with the big artists. As I write this, Sony BMG is the lone music studio still fighting the DRM-free movement. »

We tilted a screen and turned an industry on its head.

PC World 25 MOST INNOVATIVE PRODUCTS

AT&T Tilt™

Winner of the 2008 PC World 25 Most Innovative Products Award.

When you build a smart phone this robust, you're bound to receive a little attention. After all, the vivid, tilting touch screen lets you view and edit documents on the fly. It's also great for watching videos with Cellular Video, playing games, or receiving turn-by-turn driving directions thanks to the integrated TeleNav® GPS*. And with high-speed 3G global connectivity, Wi-Fi®, and Bluetooth® 2.0, you can enjoy these features everywhere you go. Compact, powerful, and capable, the AT&T Tilt by HTC is the new standard in smart mobility. **www.att.com/atttilt**

htc smart mobility

Windows Mobile

at&t

Your world. Delivered.

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DOWNLOADS FROM Deutsche Grammophon aren't cheap, but they sound great and they're blessedly DRM-free.

Amazon offers plenty of artists, both well-known and obscure. Amazon wants you to install its download manager, but it doesn't insist that you do so. Annoyance: Each selection is handled as a separate purchase—so if you buy ten individual tracks, you have to plod through the purchasing forms ten times.

Audio Lunchbox (audiolunchbox.com): The selection leans heavily toward little-known independents, many of whom deserve a larger audience. The familiar names tend to be well-aged, including greats like Louis Armstrong, Frank Sinatra, and Jimi Hendrix. Prices for single tracks and albums are a bit higher here than at Amazon, but subscription services can save you a bundle if you buy a lot. Annoyance: You can't get a single track without being told how much better off you'd be with a subscription.

Classical options: If you're part of the "Don't applaud between movements" crowd, you have two excellent specialty sites. eClassical (eclassical.com) offers a huge collection of respected and eccentric recordings at bargain prices—the complete Brandenburg Concertos for $6, for example. But even better for aficionados, the venerable Deutsche Grammophon label (deutschegrammophon.com) now sells its magnificent recordings online in full-throttle 320-mbps MP3 transfers. Selections aren't cheap—tracks can cost more than $2 each—but hey, its Deutsche Grammophon. (Full disclosure: I'm married to a professional classical musician, and some of the opinions expressed here are hers.)

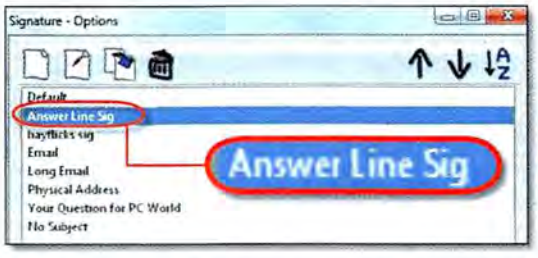
How Do I Automate Boilerplate Text in My E-Mail?

You can transform anything that you type regularly—such as multiple signatures or your street address—into boilerplate text so that you can insert it anywhere without retyping. Here's how to set up boilerplate text in Outlook, Outlook Express, Windows Mail, or any Web-based e-mail system.

Outlook, Outlook Express, and Windows Mail support multiple "signatures" that you can insert into any message at will. To set up one of these automated text blocks in Outlook 2003 or 2007, assuming that you aren't using Word for e-mail, select *Tools•Options•Mail Format*, and then click the *Signatures* button. (If you are using Word, you can enlist that program's AutoCorrect tool to perform boilerplate work.) In Outlook Express or Windows Mail, simply select *Tools•Options•Signatures*.

To insert boilerplate text into a message while using any of these programs, all you have to do is select *Insert•Signature* and then choose the right signature.

THE SIGNATURE add-on for Firefox introduces boilerplate text to Web e-mail messages.



If you do your Web surfing with the Firefox browser, you can use the free Signature add-on (available for downloading at find.pcworld.com/59721) to add boilerplate to Gmail or any other Web-based e-mail program.

JUST WONDERING...

What's the Oldest Computer That Still Works?

THERE'S NO WAY to know for sure, but I've found two likely candidates, both of which were built in 1959.

I suspect that the FACOM 128B at the Ikeda Memorial Hall in Fujitsu's Numazu factory is the oldest. The 128B line was developed in 1958, and the surviving computer was built in 1959. The 128B occupies 700 square feet of floor space, was used to design Japan's first passenger airplane, and probably has less computing power than a good modern calculator. The company's goal is to keep it working until 2016, when it will have completed 60 years of operation.

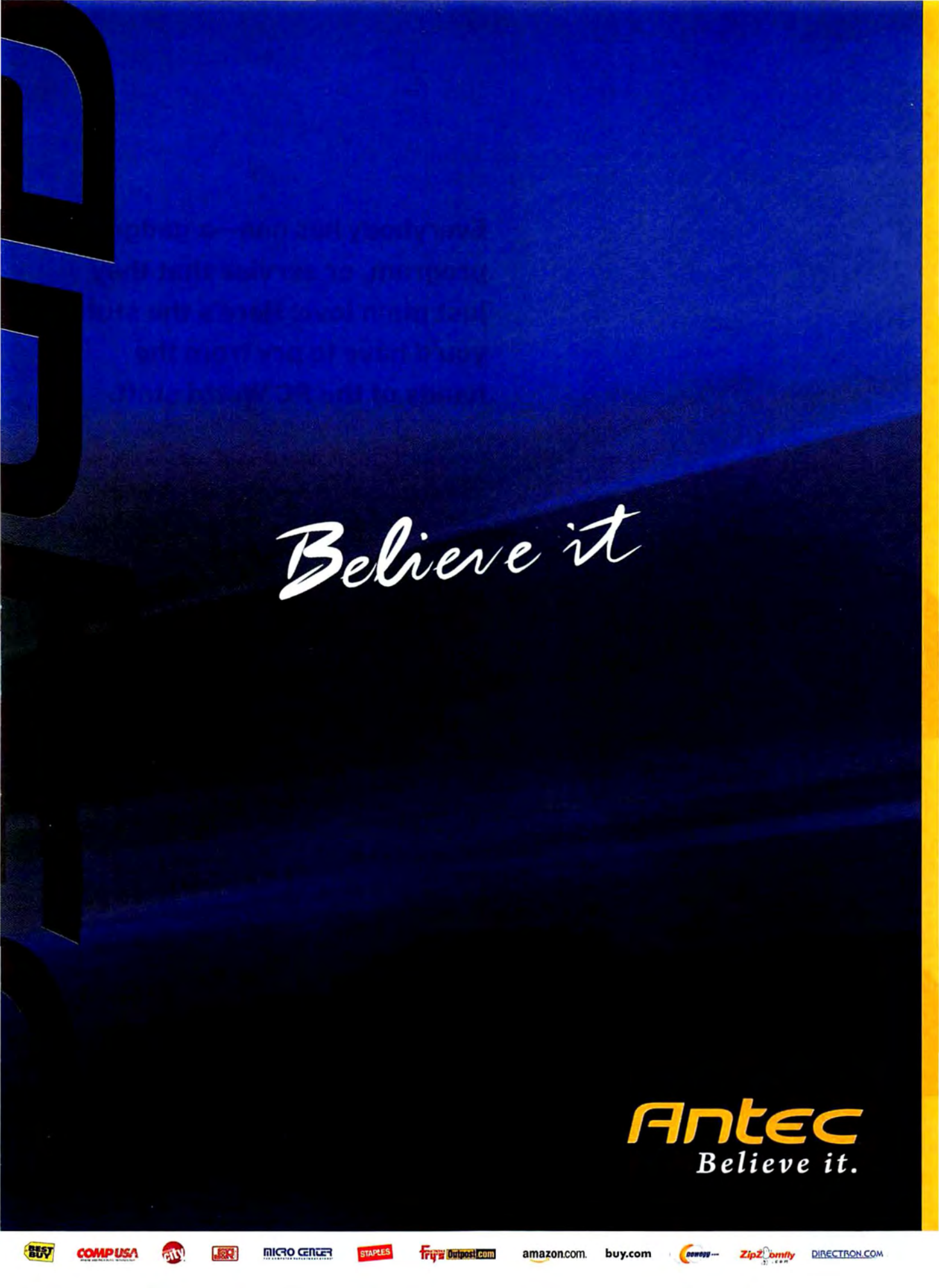
The other candidate is the London Science Museum's Ferranti Pegasus computer. It went on line in 1960, so it probably ranks as second oldest. It has the equivalent of about 256 bytes of RAM (actually, nickel delay lines) and a 25KB hard drive (actually, a magnetic drum).

How Long Can a PC Go Unprotected, and Yet Uninfected?

In 2004, tests by the SANS Institute Internet Storm Center suggested that a Windows PC with no firewall, no security software, and no router would likely be infected within 20 minutes.

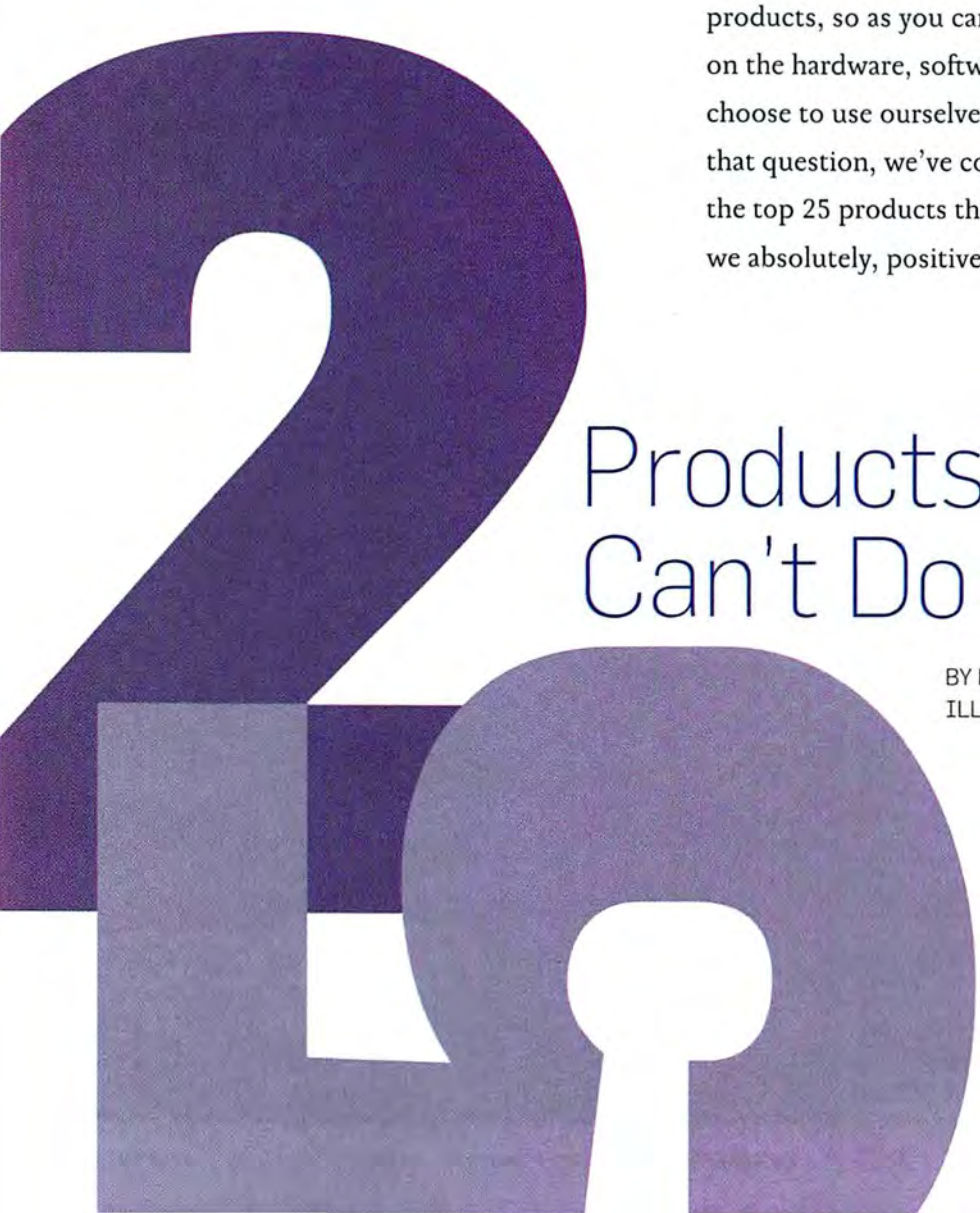
But security expert Ben Edelman calls the SANS 2004 data "too pessimistic." He says, "These days, infections tend to originate via Web exploits, rather than port-scanning worms. Plus, many glaring security gaps have been closed."

But how long can an unprotected user wander around online before visiting the wrong Web page? According to a McAfee SiteAdvisor study, "The average search engine user performs 43.1 searches per month and clicks on 2.3 results per search—yielding one dangerous site every 8 days, on average." ●


Believe it
Antec
Believe it.
BEST BUY
COMPUSA
CIRCUIT CITY
MICRO CENTER
STAPLES
Frys Outpost.com
amazon.com.
buy.com
ZipZoomfly.com
DIRECTRON.COM

Everybody has one—a gadget, program, or service that they just plain love. Here's the stuff you'd have to pry from the hands of the PC World staff.

IT'S A NICE LIFE. *PC World* staffers and contributors are continually deluged with the latest technology products, so as you can imagine, we set a high bar on the hardware, software, and Web sites that we choose to use ourselves. What are they? To answer that question, we've compiled the following list of the top 25 products that we don't just like but that we absolutely, positively can't live without. »



25 Products We Can't Do Without

BY PC WORLD STAFF AND CONTRIBUTORS
ILLUSTRATION BY JOHN CUNEO

TiVo

Because of my TiVo recorder, I could never go back to the regular way of watching TV. TiVo lets me skip all the commercials and watch a 1-hour show in 45 minutes. If I want to record all programs and movies with a particular actor, TiVo will do it automatically. I can keep up with series such as *Heroes*, *24*, or *Lost* and still be able to leave the house. And since I got my second TiVo, I don't even have to worry about two shows airing simultaneously. I have the units connected to TVs in different rooms and I transfer shows between them. (Newer models have dual tuners so you can record two shows with just one machine.) I can also move recordings from a TiVo to my PC, where I can convert them for playback on portable devices. And TiVo can download video from the Internet so I can watch it on my TV. But the simplest features, such as pausing a show when you need to get up and do something, are the most important. find.pcworld.com/57955

—Elliott Kirschling, Test Center analyst

BELKIN'S WI-FI N1 Vision.

25 YEARS OF PC WORLD: AUGUST 2000

> "You heard it here first: eBay is the Web's best site. No other site is quite as innovative, fun, useful, and addictive."

—In August 2000, for the first and last time, we were bold enough to declare that our favorite Web site was the best site, period.

Belkin N1 Vision

Sure, Belkin's N1 Vision is the fastest, most reliable wireless router I've ever used, with gigabit ethernet ports and three antennas juicing a draft-n Wi-Fi radio. The real fun comes when you start reading the LCD status screen on the front of the router. Dials, gauges, and graphs show you how fast your downloads are running, exactly what's connected to your network, and how much data each computer is sucking down. For geeks, it's a guilty pleasure akin to pushing a performance car past the redline—all without having to get up from your chair. For additional information, read our review, which found the N1 Vision less than perfect due to its lack of an 802.11n-only mode at the time. find.pcworld.com/59748

—Christopher Null, contributor

Skype

The ability of Skype to make cheap and free calls over the Internet is a gift that keeps on giving, shaving thousands of dollars off my AT&T phone bills over the past five years. As a journalist covering international issues, I make phone calls to various countries almost every day to connect with sources for stories. Skype provides prices (and in some cases, voice quality) that conventional phones cannot. Though the service suffers from some stability and lag-time issues, the cost savings it offers makes it critical, especially in my line of work. find.pcworld.com/59758

—Agam Shah, Digital Gear *columnist*

Microsoft FolderShare Beta

Though Microsoft acquired FolderShare in 2005, this Windows Live service is still listed as a beta. I use it to keep folders synced on multiple PCs. That sounds simple to do without help, but in my experience it really is not. Since I work at home about 60 percent of the time, I find myself constantly moving documents from my home PC to my work notebook and back. With FolderShare, I set up a designated folder on both computers where I want the documents automatically synced. As long as both machines have an Internet connection, synchronization is nearly instantaneous. find.pcworld.com/59752

—Tom Mainelli, GeekTech *columnist*

Mark/Space's The Missing Sync

My laptop is an Apple MacBook; my cell phone is an HTC model (similar to AT&T's Tilt) that runs Windows Mobile 6. In theory, that's a problem, since Microsoft's synchronization software is for Windows only. But Macs actually work with Windows Mobile better than Windows Vista machines do, thanks to Mark/Space's The Missing Sync for Windows Mobile. Of course, I use this $40 utility to shuttle calendar and contact information between Pocket Outlook and OS X's iCal and Address Book apps. I'm most smitten, though, with The Missing Sync's iTunes integration,

PHOTOGRAPHS: ROBERT CARDIN

which makes getting playlists of podcasts and unprotected music onto a Windows Mobile device as painless as it is with an iPod. find.pcworld.com/59751

—Harry McCracken, editor in chief

Fujitsu LifeBook P7010D

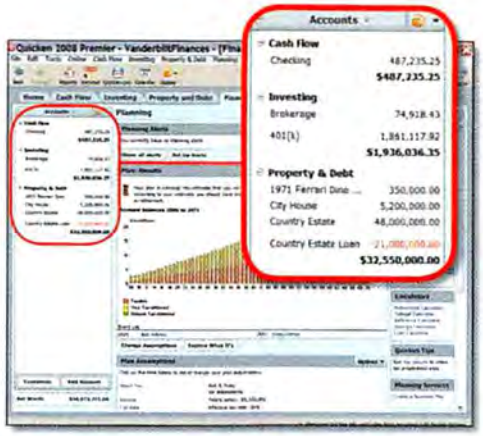
Ever since I began using this 10.6-inch wide-screen ultraportable laptop about two years ago, I knew I'd found something I couldn't live without. This was the first time I could do everything I wanted to do—play DVDs, take notes, edit high-resolution photos, copy files from SD Card and CompactFlash media (without an external card reader)—all on a notebook that weighs about 3 pounds. Its light weight makes going through airport security a breeze, and I've yet to see the back of an economy-class airplane seat that will crunch into the P7010D's display. find.pcworld.com/44260

—Melissa J. Perenson, senior products editor

Intuit Quicken Premier 2008

Intuit's Quicken, even though its straight-out-of-1998 interface frustrates the heck out of me, gives me comfort that I won't be living in a refrigerator box five years after I retire. I love that it can download transactions automatically; I hate that it can't download transactions from many organizations or for many types of accounts (for example, 403b plans and 529 plans). But once I've entered all those tiny transactions, I really know how much I've got—and how far I still have to go. For more, read our review of Quicken Home & Business 2008, which is similar to the Premier version but also adds business tracking tools. find.pcworld.com/58635

—Alan Stafford, executive editor



INTUIT'S QUICKEN PREMIER 2008 tells you how much you have and how much more you need.

Siber Systems RoboForm

Hands down, Siber Systems' $30 RoboForm (I use version 6.9.3) is the best tool for storing user names, passwords, and other contact data for Web sites. Here's why: You provide RoboForm with all the vitals you might need to complete a site's form—name, address, phone numbers, and even credit card numbers. When you click the Fill Forms button, the program does just that. Click a Web site from the RoboForm Passcard screen, and RoboForm transports your Web browser to the site, logging you in if necessary. Need an industrial-strength password? RoboForm will generate one for you. And don't worry about security: RoboForm is itself password-protected. find.pcworld.com/47635

—Steve Bass, Hassle-Free PC *and* Tips & Tweaks *columnist*

OKBridge

My passion for duplicate bridge got me on the Internet early on: I joined OKBridge, an online bridge community, in 1992. It has progressed from a free text-based Unix game to a sophisticated, graphical Java application that runs in a Windows or Mac browser. I'm happy to pay $100 a year to play with or kibitz the likes of Warren Buffett and bridge pros from around the world, participate in online tournaments, »

Apple iPhone

AS A CHILD in the 1980s, I learned that my brain was an egg and that my brain on drugs was a fried egg. As an adult, my brain is more like scrambled eggs: I can't remember everything I need to remember. But my iPhone has changed that. I now have all of the essentials of my digital life—my e-mail, calendar, contacts, text messages, Web bookmarks, latest YouTube obsessions, and music—at my fingertips in a single sleek device. My iPhone makes me more connected, more accessible, and more productive. It fits my crazy, busy, on-the-go lifestyle perfectly. With the iPhone, I'm always sunny-side up. find.pcworld.com/57879

—Kellie Parker, online community manager

and read articles by well-known bridge columnists. You can play bridge elsewhere on the Web, but OKBridge remains the best implementation with the best community. www.okbridge.com

—Yardena Arar, senior editor

SearchAllDeals.com

I'm a compulsive tech-bargain hunter, and one of my favorite ways to find red-hot specials and the absolute latest in price drops is to use deal-scanning sites such as SearchAllDeals.com. It sifts through other bargain and coupon listing services, including Ben's Bargains, FatWallet, SlickDeals, DealCatcher, DealNews, TechBargains, and more, to spot great deals with one simple search. Now that's one-stop shopping! find.pcworld.com/59759

—Danny Allen, associate editor

Microsoft Word 2003

Word has been the center of my professional life for many years now, primarily because I've yet to find another word processor that handles outlines so well. The outline view is based on hierarchical text styles, so turning an outline into an article or reorganizing an article as if it were an outline is easy. I haven't always been pleased with Word's updates, however. I still miss Word 95 with its fantastic Word Basic macro programming language. Nor am I happy with the user interface changes in Word 2007; I reverted to Office 2003 rather than learn a whole new way to use my primary program. find.pcworld.com/59753

—Lincoln Spector, Answer Line *columnist*

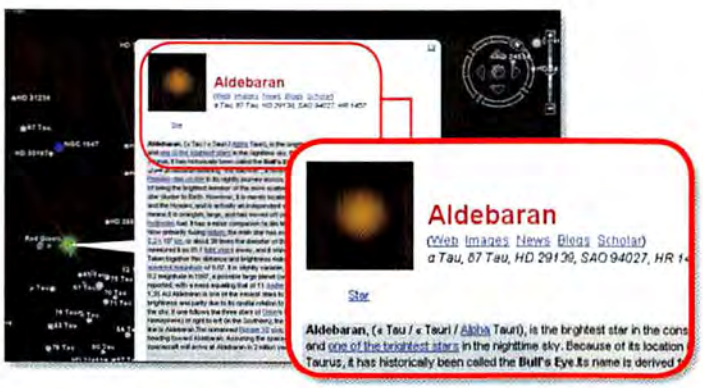
Apple iPod

Anyone who takes public transportation will likely agree that an iPod is a must. My 80GB iPod with video—which I've nicknamed "Ducky"—helps drown out crying babies, overexcited shoppers, rowdy teenagers, and unrepentant cell-phone abusers on multiple city buses. Between the 10,000-plus songs, scattered videos, and Spanish-language podcasts I've loaded onto Ducky, I'm assured of a ride home listening to my own personal soundtrack. The shuffle setting saves me from having to make mix CDs, and since the iPod is ubiquitous among my friends, I've never had a problem finding a docking station for impromptu dance parties or for playing songs in the presence of other audiophiles. find.pcworld.com/59747

—Amber Bouman,
On Your Side *columnist*

Microsoft Virtual PC 2007

There's no safer way to surf or to try out new software (including operating systems) than from within a virtual machine—that is, a PC emulator run- »



Google Earth's Google Sky

GOOGLE EARTH GREW a whole lot more powerful—and engrossing—when it added the Google Sky feature last August. As if being able to visit your childhood home, your first school, and the site of your first wedgie without leaving your desk weren't enough, Google Sky lets you fly around the galaxy and search for monoliths. This is one application that can actually bring generations together: It's probably the only piece of software that fascinates my grandma. And it costs nothing, which is much cheaper than a flight to Europe. Or a flight to Venus. earth.google.com

—Tim Moynihan, senior editor

PHOTOGRAPH: ROBERT CARDIN

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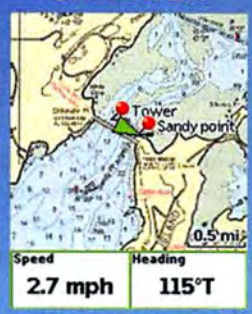
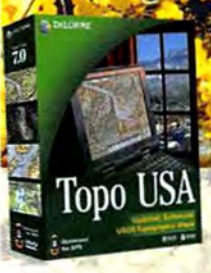


"Think Google Earth for the Palm of your hand."
National Geographic Adventure Magazine

"Most Innovative Handheld GPS of 2007."
gpstracklog.com



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ning inside a window. Download Microsoft's free Virtual PC 2007 or VMware Server, which is also free. Install your VM host, configure your virtual machine (easy), and then install an operating system. (VMware Server calls the virtual machine a Virtual Appliance, by the way.) With a VM running, my main operating system is safe: If malware attacks or if I don't like the software I installed in the VM, I simply close the VM without saving its state, and the unwanted software will be gone next time I start up. find.pcworld.com/59761

—Jon L. Jacobi, contributor

Lexmark Z1420

"Can you print that up for me?" That question used to frustrate me because it meant that I had to tether my otherwise wireless laptop to a USB printer. Enter my savior, a Wi-Fi-based Lexmark Z1420 printer, which I bought in utter frustration after repeatedly hunting for my old printer's USB cord. The Z1420 is almost a bottom-of-the-line model, but who cares—I can use it with all my Wi-Fi-equipped computers. Now, when I need to print out driving directions, I can feel the full effect of wireless freedom. find.pcworld.com/57918

—Mike Barton, senior editor

Logitech Harmony 670 Advanced Universal Remote

Between the DVR, the DVD player, the TV set, the CD changer, the Xbox 360, the Mac Mini, and the receiver connected to them, my coffee table would be drowning in remotes but for my Harmony 670. Logitech's universal remotes don't just replace the controllers that come with your A/V components, they go far beyond them. Press the Harmony's Watch Movie activity button, and the appropriate devices turn on, switch to the right inputs, and begin playing. It takes some configuration (you'll have to install an app on your PC and tell the remote which components you have and how they're connected), but once the Harmony is dialed in, you'll never need your old controllers again. This is the way all remotes should work. find.pcworld.com/59762

—Eric Dahl, senior editor

M-Audio MicroTrack 24/96 and Audacity

Okay, this is two products, but they go together. The M-Audio MicroTrack is a portable digital recorder that captures excellent audio and saves your recordings in .wav or MP3 format. I bought it to create podcasts—something I haven't gotten around to yet—but it's ideal for recording phone interviews, meetings, and such. I can play back my recordings on the M-Audio or on my iPod. Audacity is free audio software that allows audio novices like me to edit their recordings easily. find.pcworld.com/59750 (for the M-Audio MicroTrack 24/96) and find.pcworld.com/59847 (for Audacity)

—James A. Martin, Mobile Computing *columnist*

My Yahoo

I use My Yahoo to keep up on blogs and news sites, preview my Yahoo Mail account, learn about new DVD movie releases, drool over the latest Epicurious recipes, and envy backpackers who post photos on Flickr. These are all content modules that I can drag and drop around the page over a pretty background of my choosing. Other people may prefer such rival services as iGoogle or NetVibes, but I've been using My Yahoo to bring a little joy into my workday for so long that I'm reluctant to fix what's not broken. find.pcworld.com/59755

—Narasu Rebbapragada, senior editor

Kinesis Advantage USB Keyboard (QD Model)

MY FINGERS FALL perfectly on the contours of the Kinesis Advantage USB/QD keyboard for Macs and PCs. This funny-looking but friendly device, which comes in white and black, puts the space and backspace buttons directly under my thumbs. Now that I type in the ergonomic Dvorak layout, I barely have to move my fingers beyond the home row. My typing speed is faster, and my long hours at the keyboard are much more comfortable than when I used a flat QWERTY keyboard. The QD model has a hardware switch for alternating between the unusual Dvorak and the ubiquitous QWERTY layouts, so I can change it to a standard keyboard for visitors who need to use the latter. find.pcworld.com/59749

—Laura Blackwell, Download This *columnist*

PHOTOGRAPHS: ROBERT CAPOZIN

PALM'S SLEEK CENTRO uses the trusty but dated Palm OS.

Palm Centro

Yes, the Palm OS is long in the tooth, but if you've been a user for ages, you look past the cobwebs and the 20th-century look-and-feel and know you're home. No one has ever constructed a PDA interface half as user-friendly and as tap-minimizing as the Palm OS calendar/contacts/memos/to-do suite. Mashing that OS up with a phone that has a decent Web browser, an e-mail client, and an open development environment makes for a killer combination. Third-party apps are legion; I use an SSH (Secure Shell) client to connect to my home PC all the time, and a freeware music player for all my Ogg Vorbis and MP3 files. I can even listen to Internet radio. I had a Treo 600 and then a 700p for years, but they were built like tanks. The Centro is lean—happy in my pocket—and makes me hope that Palm is headed for a renaissance when its promised new OS comes out, rather for than the dustbin of tech history. find.pcworld.com/59131

—Matthew Newton, Free Agent *columnist*

OpenOffice 2.3

It's hard not to love an office suite that does everything I need and costs me exactly $0. It's not merely that I'm a tightwad (I am) or that I hate Microsoft (I do). OpenOffice simply works. It handles Word, Excel, and PowerPoint files with ease and seamless integration: When I'm in Writer, I can open a spreadsheet or presentation file with a couple of clicks—without sucking up half my system memory or crashing my PC. OpenOffice is not perfect, of course. To send files to non-OpenOffice users, I must convert the documents to something more Microsoft-friendly. The suite has few bells and whistles, too. But if I wanted bells and whistles, I'd get myself a choo-choo train. find.pcworld.com/47560

—Dan Tynan, Gadget Freak *columnist*

SATA HDD Stage Rack (3.5-Inch)

This obscure little gadget is an external USB desktop docking station that accepts ordinary 3.5-inch SATA hard drives. It helps me migrate data to new PCs, and it turns unused drives into quick-and-dirty backup cartridges—veritable 100GB floppies. This device has breathed new life into my old drives, which were just collecting dust in a closet. find.pcworld.com/59757

—Dave Johnson, Digital Focus *columnist*

SiteAdvisor

MCAFEE'S SITEADVISOR TELLS you about dangerous Web sites.

When I use an unfamiliar PC and get search-engine results that lack SiteAdvisor's colored safety icons, I feel like I'm stumbling blind into questionable territory. The terrific free safety tool from McAfee for Firefox and Internet Explorer adds a small colored icon next to results from Google, Yahoo, or MSN to indicate whether a site is hunky-dory, might send me spammy e-mail, or could even try to attack my PC with malware. What's more, it gives full details on why a site received a particular rating. Of course, it doesn't offer absolutely impenetrable protection, but I'd hate to live without it. A $20 Plus version offers extra features such as site blocking. find.pcworld.com/54204

—Erik Larkin, Privacy Watch *columnist*

Verizon EvDO Service

I *could* live without Verizon's $60-per-month wireless broadband service—if I didn't have a 3-hour daily commute. Since I don't want to move, I have to be connected while commuting (by ferry, by the way; I don't try to type while driving!). Out on the water, speeds aren't always what Verizon promises (600 kbps to 1.4 mbps for downloads), but are still fast enough for me to deal with e-mail, do Web research, and keep up with the news. And all that helps me forget about the killer commute. find.pcworld.com/59760

—Edward N. Albro, editor

(Nothing)

I've never met a product I couldn't do without, and that's the way it should be. The item that came closest to indispensability was the Microsoft Outlook personal information manager, but Outlook's negatives (swollen .pst files, RAM hunger, and limited data-export options) sent me in search of alternatives. Right now, I'm using Gmail and Google Calendar, though I could end up switching. The key is not to become ensnared by technologies or file formats that lock you into a particular product. Avoiding that kind of attachment empowers consumers to find better, less-expensive solutions.

—Scott Spanbauer, contributing editor

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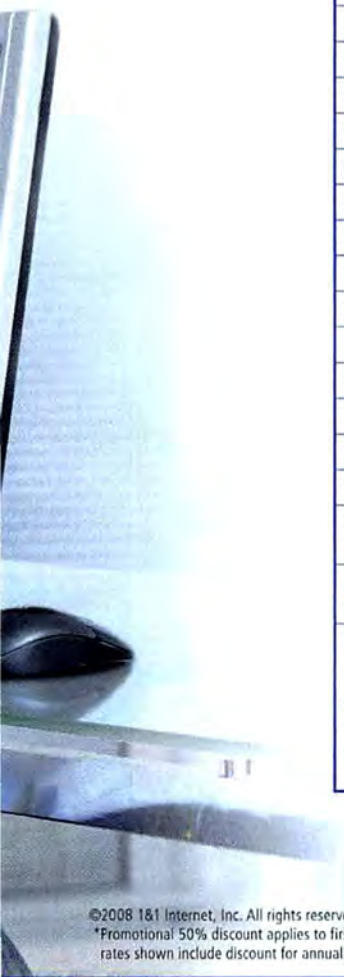

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Mailbox Size	2 GB	Unlimited	10 MB
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Flash Site Builder	18 Pages	–	–
Photo Gallery	✓	✓	✓
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Web Statistics	✓	✓	✓
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The Next 25 Years

PCs may disappear from your desk by 2033. But with digital technology showing up everywhere else—including inside your body—computing will only get more personal. »

BY DAN TYNAN
ILLUSTRATION BY MICHAEL KLEIN

THE FUTURE AIN'T what it used to be. In the pre-PC era, futurists predicted huge changes in transportation. By 2008 we would be flitting about in personal jetpacks and taking vacations on the moon. But the communications revolution spurred by personal computers and the Internet wasn't on anyone's radar.

Now the technology landscape is on the verge of changes that will transport us to places few people have imagined. We know that computers will be vastly more powerful, mobile, and connected. The question for the next 25 years is whether we'll be able to tell where technology ends and the rest of our life begins.

Technology will become firmly embedded in advanced devices that deliver information and entertainment to our homes and our hip pockets, in sensors that monitor our environment from within the walls and floors of our homes, and in chips that deliver medicine and augment reality inside our bodies.

This shiny happy future world will come at a cost, though: Think security and privacy concerns. So let's hope that our jetpacks come with seat belts, because it's going to be a wild ride.

25 YEARS OF PC WORLD: MAY 1987

> "When you walk into an office in 1998, the PC will sense your presence, switch itself on, and promptly deliver your overnight e-mail, sorted in order of importance."
>
> *—Our May 1987 special report on the future of technology confidently predicted a scenario that's still fantasy as of early 2008.*

The Incredible Disappearing PC

Whether you have a PC on your desk in 10 to 15 years will be a matter of choice, not necessity. If you do, it will be vastly more powerful than your current system, thanks to advances in nanotechnology, says Doug Tougaw, an engineering professor at Valparaiso University who is developing nanocomputers.

"We're getting closer to our goal of creating computers that are a thousand times faster and smaller and use one-thousandth of the energy of today's computers," Tougaw reports. "As processors get smaller, they'll be embedded into more things. We'll also use standard-size machines packed with hundreds of chips. So we'll have very intelligent consumer products and unbelievably powerful PCs."

Computers using nanotechnology will debut in about five years, he says. Five to ten years after that, silicon will reach a point at which quantum mechanics won't allow chip pathways to get any smaller, so electric-current-based PCs will give way to optical computers that transmit streams of light instead of electrons, or perhaps to quantum computers that rely on the strange physics of atomic particles to deliver processing brawn.

"Starting around the year 2018, we'll have optical computers that operate at the speed of light, sending thousands of message streams down a single channel," says William Halal, professor emeritus at George Washington University and author of *Technology's Promise: Ex-*

FROM LEFT: COPYRIGHT 20TH CENTURY FOX; COURTESY OF GALACTICSUITE.COM; PHOTOGRAPH (TOP): ROBERT CARDIN

Five Sci-Fi Scenarios Get Real

IT MAY LOOK great in the movies, but what about in your living room? After polling hundreds of futurists and technology analysts, virtual think tank TechCast calculates when emerging technologies are likely to be found in at least 30 percent of U.S. households or businesses. Here are its predictions for five familiar sci-fi scenarios.*

Mainstream in
2010

Biometric Security

Minority Report

In a few years, we'll be using fingerprint, voice, iris, or retinal scans to log on to Web sites and make purchases. Sounds a lot better than storing passwords under your keyboard, right? But remember: Your body is your password—so don't lose it.

Mainstream in
2013

Space Tourism

2001: A Space Odyssey

Space isn't merely the final frontier, it's also the hot new vacation spot for the megarich. Richard Branson's Virgin Galactic plans to launch its first suborbital space flight in 2009 (cost: $200,000 per ticket). NASA predicts that the first space hotels will appear within 20 years. When you get turndown service at the Lunar Hilton, will the attendant leave a moon rock on your pillow?

pert Knowledge on the Coming Transformation of Society, to be published in April.

Most of tomorrow's CPU muscle will go toward making the user interface seamless and ubiquitous. Keyboards and mice may persist, but they'll become secondary to voice and gesture.

Gesture-based interfaces are catching on fast. The Nintendo Wii's gesture-based controllers are one example. And the iPhone's touch screen responds differently to finger taps than to swipes; Apple rolled similar technology into its MacBook Air's touchpad in January. GestureTek uses the input from camera phones to deliver gesture control.

Once freed from the keyboard, you'll be able to talk or gesture to your computer from virtually any display in your home. Or you may carry your pocket-size computer with you and beam the image to a nanocomputer embedded in the nearest wall-size screen. Paper-thin displays are inching closer to reality, too. Late last year, Sony released its $2500, 11-inch XEL-1 organic light-emitting diode (OLED) HDTVs; and at January's Consumer Electronics Show, the company presented a prototype 27-inch OLED HDTV.

Meanwhile, what you see on screen will look a lot more like real life than in present-day 3D virtual worlds, predicts Halal. "When you want to buy a book, instead of going to Amazon's home page, you'll be greeted by a virtual salesperson," Halal says. "The avatar will find the book you're looking for and conduct the transaction, just as you would with a real person."

Michael Liebhold, senior researcher at Palo Alto, California's Institute for the Future, says your PC may project a holograph, so you can manipulate files and objects with your hands.

Of course, you may not have a traditional computer at all. For many people, the PC of the future will be a dumb terminal, with storage, software, and processing power distributed across an Internet cloud. Amazon, Dell, and IBM have introduced cloud services for businesses; and Google and Zoho now serve up Web applications to consumers.

In years to come you'll enjoy ubiquitous Internet access, perhaps using part of today's TV spectrum. Such access will deliver your "desktop" from a portable device or Internet terminal. Instead of a user name and password, you'll provide a fingerprint, voice, or retinal scan. "Your identity becomes your access point to your files and applications," says Patrick Tucker of the World Future Society, in Bethesda, Maryland. "Your digital life will follow you around like a shadow."

Surrounded by Intelligence

We're entering the era of "ambient intelligence," when everyday objects will contain technology that broadcasts data about themselves and their environment, says Liebhold.

As you approach a dangerous intersection, sensors in your car will detect it and reduce speed. GPS coordinates of places »

A Factory on Your Desk

FAB@HOME'S $2400 desktop fabricator.

ONE DAY YOU might order a new coffee pot, or even a new laptop, and not have to wait for delivery. Instead, you'll use a printer-size factory to download and build it.

Already, 3D inkjet printers build prototypes for industry. Chemical giant BASF is developing inks that will enable ordinary printers to spit out paper or plastic circuit boards. For $2400, you can buy a Fab@home desktop fabricator (find.pcworld.com/59845) that lets you build objects out of acrylic; the company hopes to produce units that can build with multiple materials in the future.

The Center for Responsible Nanotechnology predicts that personal nanofactories will be in operation by 2020. Jamais Cascio, founder of Open the Future and a director at CRN, says nanofactories will have a huge impact: "If it becomes cheaper and more efficient to have something printed out locally instead of made in China, it will have a big effect on things like trade balances, international labor, and...our national economy."

Mainstream in
2016

The Holodeck

Star Trek: The Next Generation

The long-predicted virtual-reality revolution may finally be imminent, thanks to the popularity of 3D movies and of online worlds such as Second Life. A future "holodeck" could be enhanced by scents shot at your nose by a "smell cannon." Japanese researchers are working on the device now.

Mainstream in
2019

Self-Aware Computers

2001: A Space Odyssey

Though unlikely to turn murderous, machines driven by artificial intelligence will, within 15 years or so, be handling many routine tasks.

Mainstream in
2020

Domestic Robots

Lost in Space

Take a numba, Roomba. One technology expert predicts that by 2025 robots will outsell cars worldwide. So how will the ones without cars get to work?

* Predictions carry a margin of error of plus or minus three years; results not guaranteed.

FROM LEFT: COPYRIGHT PARAMOUNT PICTURES; COPYRIGHT MGM; COPYRIGHT 20TH CENTURY FOX. PHOTOGRAPH (TOP): COURTESY OF FAB@HOME

unsafe to walk at night will be broadcast to mobile devices.

In Japan, location-based services from GeoVector let the Mapions Pointing Application deliver information on businesses inside a building at the point of a GPS-enabled camera phone. U.S. handsets with the technology should appear by year's end.

In homes, floor sensors will detect empty rooms and automatically lower the thermostat and turn off lights. Agilewaves, a firm started by ex-NASA scientists, is working with builders to install sensors on electrical switches, pipes, and gas valves. Eventually they hope to offer neighborhoods, subdivisions, or municipalities a big-picture view of their carbon footprint.

Future homes will have "a dashboard that gives real-time performance feedback," says Peter Sharer, CEO of Agilewaves. "Homes that have this instrumentation are more likely to hook into their neighbors' homes. In 10 or 15 years, entire communities will be networked."

The most significant use of sensors in homes, however, will be to monitor inhabitants' health. An FDA-approved under-the-mattress monitor activates when heart patients lie down. Japan's Matsushita has built a toilet seat that sends tiny electric charges through a users' buttocks to measure body fat.

Our Computers, Ourselves

Ambient computing will extend from house walls to body cells. Verichip makes a pea-size radio-frequency identification (RFID) chip that can be injected under diabetes patients' skin to monitor glucose without a blood sample.

Researchers at the University of Edinburgh in Scotland are exploring how to spray computerized sensors into patients' chests during heart surgery, so the sensors can relay information to the hospital computer. The process could be commercially viable within ten years.

Body computers will progress from monitoring health to delivering medical care and ultimately to augmenting reality by piping the Internet directly into the brain—if people can overcome their squeamishness about brain implants. "There's a very short leap between implanting a [cochlear] device and one that lets you receive data directly from the Net," Tucker says.

Researchers are moving ahead boldly. For three months in 2002, Kevin Warwick, a cybernetics professor at the University of Reading in England, lived with electrodes implanted in his arm. In one test, he wired them to an Internet-connected PC and then temporarily attached electrodes to his wife's arm as well. Warwick described this experiment in a 2006 interview with ITWales.com: "[W]hen she moved her hand three times, I felt in my brain three pulses, and my brain recognized that my wife was communicating with me. It was the world's first purely electronic communication from brain to brain, and therefore the basis for thought communication."

Bumps in the Road

But before we wire our bodies, we need a far more secure network than today's Internet and better privacy safeguards for the petabytes of consumer data that an always-connected world will generate, says Pradeep Khosla, codirector of CyLab, Carnegie-Mellon University's computer security think tank.

Ari Juels, chief scientist for data security company RSA, says that biometrics and encryption will help with access security; but trouble may still arise when data reaches users' screens. Context-smart back-end systems will help. "They'll know that, if you are in San Francisco right now, someone in Thailand shouldn't be using your credit card number," Juels explains.

Khosla says that a combination of technology, education, and tough legislation against "the abuse and misuse of information" is the best way to surmount the privacy hurdles that remain. "I don't think we're quite there yet," he adds.

In Liebhold's view, the issue of privacy needs to be elevated. "I don't think it's a foregone conclusion that our privacy will be lost or that it will be protected. It's our fate. We have control over the future; we're not victims of it." ●

PHOTOGRAPHS: COURTESY OF STEVE MANN

Remains of the Day: Life, Bit by Bit

WE HAVE MET Big Brother, and he is us. Tiny cameras and wireless connections may herald an era of "sous-veillance"—observation from below—says Jamais Cascio of the Center for Responsible Nanotechnology. Cameras and microphones in your glasses or shirt buttons will record every moment, upload it, and let you replay the good bits.

Steve Mann, a professor at the University of Toronto, has used wearable computers to record nearly all of his waking life since 1981 (see video at find.pcworld.com/59824). Microsoft researcher Gordon Bell has collected his life's work in his MyLifeBits project.

"Imagine recording every conversation you've ever had with your spouse," Cascio says. "That kind of enhanced, easily searchable memory will change what it means to be a person in a way that most technology doesn't."

MANN'S GEAR HAS become less cyborg-like in recent years.

1980 1984 1992 1998 2004

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Attack of the Clones, Return of the Steve, Birth of a Nuisance, and the Day Nothing Happened: All make our list of the most significant moments of the PC World era. »

25 Days That Changed Everything

BY PAUL BOUTIN
ILLUSTRATIONS BY ROBERT NEUBECKER

Compaq Out-Clones IBM

September 9, 1986 For the first few years of the PC era, IBM faced little challenge from other DOS computer makers. But when Intel bumped up the processing power of its CPUs from 16 bits to 32 bits—a standard that still dominates today—Compaq surprised Big Blue by beating it to market with a competitively priced ($6499!) computer carrying Intel's new 386 chip. Suddenly, IBM could no longer set the pace—or the price—for PCs.

Microsoft Builds an Office

August 1, 1989 Few folks remember that Microsoft Office made its debut as a $500 Macintosh suite containing three already popular programs (Word, Excel, and PowerPoint), and that it lacked the OLE data format, spelling checker, and Visual Basic scripting that tie Office applications together now. The Windows version came a year later, and many experts now view Office—not Windows—as Microsoft's most productive cash cow.

Desktops Become Darkrooms

February 19, 1990 Frustrated by his Mac Plus's inability to show grayscale levels for his doctoral thesis on digital image processing, Thomas Knoll wrote a subroutine to simulate the effect. His brother John, an employee at Industrial Light and Magic, got him to turn it into a program that the brothers called ImagePro, but Silicon Valley took little interest until John demoed it to Adobe. Launched on this date, the retitled app is now so closely identified with digital imaging that people use it as a verb, as in, "I'll Photoshop out the wart."

Windows Hits the Big 3.0

May 22, 1990 The first few releases of Windows failed to catch fire. But by adding both virtual memory and memory protection, Windows 3.0 turned PCs into capable multitasking machines—and a deal with Apple finally allowed overlapping windows (Windows 2.0 could only tile them). Microsoft sold about 10 million copies of Windows 3.0, establishing Windows as the dominant operating system among personal computers.

The Internet Goes Commercial

May 24, 1991 One critic likened the National Science Foundation's decision to open the Internet to commercial use to "giving a federal park to Kmart." At first, commercial traffic meant e-mail from DEC and IBM. But within a few years, entrepreneur Jeff Bezos would conjure up Cadabra, an online bookstore that he redubbed Amazon before it opened in 1995. Today, Amazon alone takes a billion dollars a year in online orders for several million different products—the giant in a $100-billion-a-year marketplace that's still growing.

Linus Unleashes Linux

October 5, 1991 Finnish college student Linus Torvalds posted a brief message to the newsgroup comp.os.minix: "Do you pine for the nice days of minix 1.1, when men were men and wrote their own device drivers? I'm working on a free version of a minix-lookalike for AT-386 computers. Why? This is a program for hackers by a hacker." To Torvalds's surprise, hackers who had grown tired of waiting for Richard Stallman's GNU operating system—and who couldn't afford to buy expensive Sun, DEC, or HP hardware—pounced on Linux, which along with its cousin FreeBSD allowed PCs to replace workstations and servers.

Mosaic Hits the Times

December 8, 1993 "Click the mouse: there's a NASA weather movie taken from a satellite high over the Pacific Ocean," *New York Times* tech reporter John Markoff wrote in a story describing the World Wide Web as experienced through Mosaic, the first browser to embed images in text rather than in separate Windows. "Click again, et voilà: a small digital snapshot reveals whether a certain coffee pot in a computer science laboratory at Cambridge University in England is empty or full." The article helped transform the Web browser from geek tool into mainstream fixture. And the authors of Mosaic went on to write a commercialized version called Netscape Navigator.

Spam Rears Its Ugly Head

April 12, 1994 Husband-and-wife lawyer team Laurence Canter and Martha Siegel's use of a Perl script to post an advertisement for their services titled "Green Card Lottery—Final One?" to more than 6000 Usenet discussion groups prompted outraged programmers to code cancelbots that crawled Usenet looking for the message. But the unrepentant duo claimed 1000 new clients and $100,000 in income from an ad that was—to them—almost free. Usenet wags tapped Monty Python's mysteriously popular ditty "Spam, Spam, Spam" to describe the message glut.

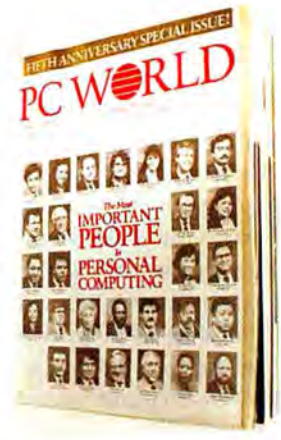
MOSAIC LOGO COURTESY OF NCSA/UNIVERSITY OF ILLINOIS

Microsoft Starts Up Win 95

August 24, 1995 Launched just days after Netscape's soaring IPO, Windows 95 ditched its predecessors' reliance on DOS, added preemptive multitasking and protected-mode 32-bit application support, allowed 255-character file names with both upper- and lowercase letters, and added a Start button from which users could find and launch all applications. The $300 million advertising campaign licensed the Rolling Stones' "Start Me Up" for TV ads and lit up the Empire State Building in Windows 95 logo colors. But despite the "Where do you want to go today?" slogan, the default Windows 95 installation didn't let you connect to the Internet.

25 YEARS OF PC WORLD: JANUARY 1988

> "Personal computing has changed dramatically since PC World was launched five years ago...We have much more powerful processors with 286 and 386 chips. We've conquered the 640K [memory] barrier. We have 100MB drives."



—PCW founder David Bunnell, in our January 1988 issue, impressed by how much history had been made a mere half-decade since our debut.

eBay Bidding Begins

September 4, 1995 Don't believe the PR fable claiming that eBay founder Pierre Omidyar created the site to help his fiancée trade Pez dispensers. The first item sold on a little site called AuctionWeb was a broken laser printer, which went for $14.83. Omidyar wanted to call the site Echo Bay ("it just sounded cool"), but he had to settle for eBay. These days, eBay supports an economy bigger than that of most countries.

Palm Pilots a Course for PDAs

March 1996 It held 750 contacts and addresses, a year-long calendar of appointments, and 100 to-do notes or memos in a pocket-size gadget, and you could synchronize it with a PC or a Mac. Palm's $299 Pilot 1000, providing 128KB of memory and Graffiti handwriting recognition software, became the tech generation's Rolodex—until it was eclipsed by RIM's BlackBerry device and by other phones with keyboards.

AOL Goes Flat-Rate

October 30, 1996 Dial-up users once paid for their online time by the hour—and watched the meter carefully. AOL's controversial switch to a fee of $20 a month for unlimited access immediately overloaded the company's modems. Three years later, however, AOL had garnered 10 million subscribers, and flat-rate fees were the norm. To circumvent busy signals, subscribers simply stopped disconnecting—and accidentally discovered the benefits of being always on.

Steve Jobs Returns From Exile

July 9, 1997 A decade after being ousted from the company he founded, Steve Jobs persuaded Apple to acquire his subsequent company, NeXT—thereby giving Apple both the basis for OS X and, after a boardroom coup, its once and future CEO. In short order, Jobs killed the failing Newton portable, secretly developed the translucent-blue iMac, convinced Bill Gates to retain Internet Explorer and Microsoft Office on the Mac, and acquired professional-caliber digital multimedia applications such as Final Cut. Though he's not as rich as Gates or the Google guys, today Jobs is tech's biggest rock star.

Copyright Crackdown Begins

October 28, 1998 Probably the most unpopular law on Earth among Internet users, the Digital Millennium Copyright Act is the United States' implementation of intellectual-property treaties established by the World Intellectual Property Organization. Signed into law on this date by President Bill Clinton, it established the battle lines between Hollywood content owners and individual file sharers, setting up a fight that continues to this day. It's also why even the act of ripping a DVD you've bought onto your iPod involves wading into murky legal waters.

BlackBerry Untethers E-Mail

January 19, 1999 RIM's two-way pager offered a QWERTY keyboard and supported instantaneous mobile text communication. At $399 plus the cost of a data plan, the device was a business tool: For once, the suits beat the teenagers »

PHOTOGRAPH (TOP): ROBERT CARDIN

to a tech trend. Though the models have evolved over the years, the BlackBerry remains today's top-selling smart phone—an epic run for a gadget brand.

Melissa Spreads Like Wildfire

March 29, 1999 A Word macro distributed on the alt.sex newsgroup via a file claiming to contain porn-site passwords, Melissa e-mailed itself to the first 50 names in each infected PC's Outlook address book, crippling mail servers and inflicting an estimated $80 million in damage upon U.S. businesses. But the 20-month prison sentence served by its coder hasn't prevented virus writers from becoming ever more prolific.

TiVo Transforms TV

March 31, 1999 Time-shifted TV viewing dates back to Sony's 1965 reel-to-reel video recorder. But TiVo, launched on this date, and its archrival ReplayTV helped make video recording nearly effortless by combining a menu-driven scheduling service with no-fuss playback from a hard disk.

Y2K Fails to Wreak Havoc

January 1, 2000 Nothing happened on this day—in part because companies spent hundreds of billions of dollars fixing software to prevent major errors. But the most feverish forecasts—nuclear plants melting down, prison gates opening, electrical grids dying—were based more on anxiety and naiveté about how computers work than on actual threats.

The Feds Declare Microsoft a Monopoly

April 3, 2000 In *United States v. Microsoft*, the government accused the company of abusing its alleged monopoly over operating systems to control the Web browser market by integrating Internet Explorer into Windows and punishing PC vendors for installing other browsers. District Court Judge Thomas Penfield Jackson's decision, issued on this date, was followed by a judgment ordering Microsoft to split into two business units—a ruling overturned on appeal. But the protracted legal wrangling made Microsoft a kinder, gentler competitor—or at least a more cautious one.

The Napster Free Ride Ends

July 26, 2000 When Judge Marilyn Patel ruled on a Wednesday that the popular music service must shut down by Friday, Net traffic shot through the roof. Napster users sent the entertainment business a message: Give me convenience, or give me death. The name has since been revived for a paid service, but "to Napster" still means to digitally undermine a business based on locked-up copies.

Webvan Checks Out

July 9, 2001 With its fleet of tony delivery trucks and massive warehouses, the online grocer became the poster child for the excesses and doomed enterprises of the dot-com boom. Webvan's hoped-for explosion of online grocery orders failed to materialize, and the company entered bankruptcy on this date. The lesson: People will buy books and CDs online, but they'd rather handle their own lettuce—and skip the delivery fees.

iPod Packs Pockets With Tunes

October 1, 2001 Apple's sleek gadget, with enough disk space to hold 100 albums, went on sale on this date, transforming the portable music player from a tech trinket into a lifestyle icon and ushering in a new era of digital music.

Firefox Starts Browser War II

November 9, 2004 Internet Explorer's monopoly fell victim not to a ruling in the Microsoft antitrust case but to a series of viruses, malware, and bugs that made PC users ready for a replacement. But by mid-2004, the Mozilla open-source browser that would otherwise have been an obvious candidate had been six years in development without a 1.0 release. So a pair of rebel Mozillans spun off a lightweight version that surfed the Web quickly and safely. Firefox was released to the public on this date, and the rest is history.

YouTube Turns PCs Into TVs

April 6, 2006 On this date, unknown comic Judson Laipply posted a stage-performance video, "Evolution of Dance," in which he mimicked dance fads from Chubby Checker's "The Twist" to Outkast's "Hey Ya." The clip has since been watched more than 70 million times, demonstrating both YouTube's easy access and its unprecedented ability to create a video network you can watch from almost any place that has an Internet hookup.

D-Day for iPhone Insanity

June 29, 2007 Advance hype for the iPhone was ridiculous, but shoppers who stood in line didn't complain. The iPhone's impact has spread far beyond the 2 million or so people who've bought one: Thanks to its success, we can expect all future phones to sport high-res touch screens, fewer buttons, and more PC-like applications. ●

PHOTOGRAPH (BOTTOM): ROBERT CARDIN

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Here's How

Play Music and Movies on Nearly Any Device

Compress, convert, and control media files for iPods and other players—easily.

BY ZACK STERN

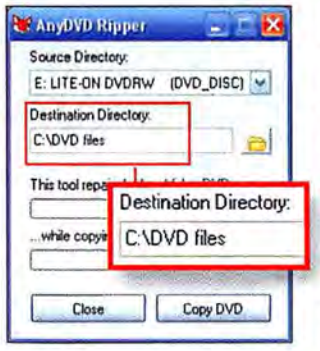
I'M PACKING for a trip on short notice—loading my video iPod while frantically throwing jumbles of clothes into a suitcase. I already have 25GB of music loaded, but since iTunes doesn't import my DVDs, my iPod is "video" in name only unless I spend a bunch of money at Apple's online store.

Fortunately, just as Jack Bauer knows alternate routes through L.A. rush-hour traffic, I have tricks for getting around iTunes and adding those movies to my player. I can even transfer my favorite viral videos from YouTube and copy commercial-free TV shows from my TiVo. And I can improve my iPod's music playback by ripping a perfect copy of a new CD or downloading free songs from various Internet radio stations.

I'll explain these and other tips for media conversion, portable playback, and related tasks, whether you are using iTunes, Windows Media Player, an iPod, a Zune, or another tool. My flight may be taking off in just 24 hours, but my iPod will be ready.

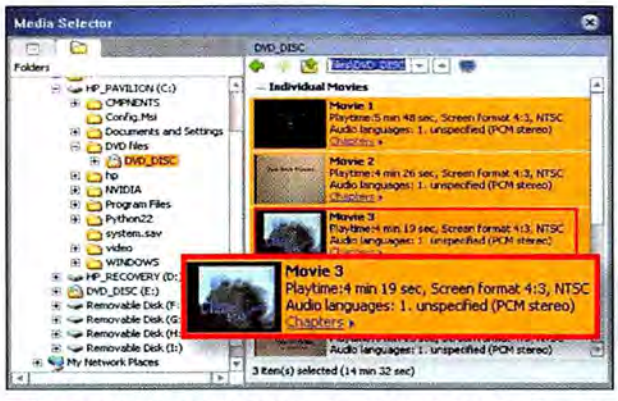
Rip a DVD to Your iPod

iTunes can't import movie DVDs in the same way that it captures audio CDs, but here's an easy method for converting such videos into an iPod-digestible format. These steps will work with your family's home videos, and they should transfer most of the Hollywood movies you own, too. (Note that ripping Hollywood movies raises legal and ethical issues that you and your conscience should weigh carefully.)



IF YOU HAVE more than one DVD drive, click the drop-down arrow to select the one with your DVD.

Rip video from the disc: Use AnyDVD (www.slysoft.com, $49) to move the video files onto your hard drive. Launch AnyDVD Ripper, choose a destination, and click *Copy DVD* (see the screen above).



ROXIO'S CRUNCH SOFTWARE keeps track of the total video time; the counter below the thumbnails reports their cumulative length.

Depending on how fast your PC and your DVD drive are, transferring the video to your hard drive should take about 20 minutes.

Prep the video for your iPod: Roxio Crunch (www.roxio.com, $40) compresses video into iPod-ready movie files. Though free alternatives exist, Crunch's simplicity and intuitive interface justify its price. Open Crunch, click the *Add Movies* button, and navigate to the folder on your hard drive where you put your ripped video file. To assist you in finding what you need, Crunch shows you preview frames of each file—a big help, since many DVDs contain multiple video files. You can also use the included length information to identify the main video: Look for a file that's more than an hour long (see the image at left). <Ctrl>-click to select multiple files if you wish. Click *OK*.

Choose the correct format for your player: Available formats appear in the pop-up window (see chart above right). For most video-capable iPods, a good option is iPod Standard. Verify that the radio button

25 YEARS OF PC WORLD: JULY 1984

'Will the computer ever succeed as a concert musician? Or is it capable only of blooping and bleeping in accompaniment to the video games it runs?' *—We ponder the future of digital music in July 1984—back when "music library" still meant a stack of vinyl LPs on a shelf.*

Pick the Best Format for Your Media Player

DIFFERENT MEDIA PLAYERS support different file compression formats for video. For example, some players offer video-out to a television at a resolution that exceeds the device's screen size. So encode higher—and sacrifice space—if you plan to plug it in.

FORMATTING CRITERION	Apple iPod Classic (80GB)	Apple iPod Touch (16GB)	Microsoft Zune (80GB)	Creative Zen (16GB)	Motorola Razr V3m
Native resolution	**320 by 240**	480 by 320, **640 by 480**	**320 by 240**	**320 by 240**	220 by 176, **176 by 144**
Supported audio formats	**AAC**, AIFF, Apple Lossless, Audible, MP3, Protected AAC, WAV	**AAC**, AIFF, Apple Lossless, Audible, MP3, Protected AAC, WAV	AAC, **MP3**, WMA	Audible, AAC, **MP3**, WAV, WMA	AAC, **MP3**, WMA
Suggested audio-only bit rate	256 kbps	192 kbps	256 kbps	192 kbps	128 kbps
Supported video formats	**H.264**, MPEG-4	**H.264**, MPEG-4	ASF, **H.264**, MPEG-4, WMV	MJPEG, **WMV9**	**MPEG-4** (3GPP)
Suggested video frame rate	Same as source (up to 30 fps)	Same as source (up to 30 fps)	Same as source (up to 30 fps)	Same as source (up to 30 fps)	15 fps
Suggested audio/video bit rates	128 kbps audio/ 700 kbps video	128 kbps audio/ 1500 kbps video	128 kbps audio/ 700 kbps video	128 kbps audio/ 700 kbps video	16 kbps (mono) audio/ 64 kbps video

CHART NOTES: Suggested resolutions and file formats appear in bold type. fps = frames per second; kbps = kilobits per second

outputs to File/Folder (instead of importing directly from iTunes) to store the resulting file anywhere on your PC. Click *Save As*, locate a destination, click the check box to add the file to iTunes automatically, and click *OK*. Depending on your PC's speed and the movie's length, video encoding will take an hour or two.

Load your tunes: Once you have converted your videos to the desired format, add them to your iTunes library by dragging them into the iTunes window or by choosing *File•Add File to Library* in the application menu. Sometimes, iTunes slips TV shows, movies, and downloads into the wrong library folder. To redirect a video to its proper folder, right-click the name of the miscategorized file, select *Get Info*, click the *Video* tab, and then change the setting under 'Video Kind' to move the program into the most appropriate category—for example, *TV Show* (see the screen shot below left).

AFTER TAGGING THE video, feel free to add details about the show.

Take Commercial-Free TiVo on the Road

Advertising may be a necessary evil of free, over-the-air TV, but why tolerate it on your personal media player? Here's how to transfer video from a TiVo, cut the commercials, and send the processed file to your iPod.

First you need to install TiVo Desktop (find.pcworld.com/59801) on your PC. This free utility transfers recorded shows from a Series2 or Series3 TiVo to a networked PC. When the setup process asks for your TiVo Media Access Key, you can find that unique string of numbers in your TiVo's menus: Use your remote to select *TiVo•Messages & Settings•Account & System Information•Media Access Key*. When the installation wizard prompts you to do so, enter the Media Access Key into your TiVo Desktop software. After completing the initial TiVo Desktop setup, select *Pick Recordings to Transfer*. Click the check boxes for one or more shows (see the upper screen on page 124), and choose *Start Transfer*.

Once the shows are on your PC, you'll use different software—VideoReDo Plus (www.videoredo.com, $50)—to remove the commercials. In addition to its editing features, this program natively reads proprietary TiVo files, saving you another step »

CLICK TIVO DESKTOP'S Auto-Transfer button to download new episodes of a selected show from your TiVo to your computer.

in the process. (If you use another editor, it might not work with TiVo videos.) During installation, select the option to import TiVo files from the default My TiVo Recordings folder.

Launch VideoReDo Plus and open one of the shows. (As this story went to press, the program didn't yet work with HD files; a software update is due in February.) Click *Open Video*, choose the *My TiVo Recordings* folder, and pick a file. From the Ad-Detective menu, start the Ad-Detective scan. VideoReDo will analyze and mark possible commercial breaks. Click the red forward-arrow and back-arrow to jump between those points. Find the moment where the show cuts to a commercial, and click the *Sel. Start* button. Fast-forward to the end of the commercial break, and click *Sel. End*. Choose *Cut Selection*. Repeat these steps for multiple breaks as needed (see the image below). Choose *Save As*, and then export the edited video as an MPEG Program Stream.

You now have a flawless, ad-free copy of the original TiVo video. The free Videora iPod Converter (find.pcworld.com/59803) will compress the video for iPod playback. Click the *Convert* button and the *Video File* tab. Pick *Normal Mode*, and follow the prompts to select the no-ad show. Set the quality level, and begin processing. When Videora is done, the file will appear in your iTunes library.

Record Music From Internet Radio

Internet radio stations easily trump terrestrial broadcasts, with virtually limitless listening choices and (depending on your broadband connection) perfect quality. With the right tools, you can record those broadcasts, too, slurping songs into a folder on your hard drive as easily as people used to record FM signals to tape in the 1980s.

It has a complicated interface, but Radiotracker Premium (www.radiotracker.com, $25) gives you lots of ways to record and cut songs from multiple stations automatically and simultaneously (see the screen shot below). The $37 Platinum version even lets you search for specific artists and song titles.

Launch Radiotracker, and click the *Stations* button. Browse the list of genres, or start typing the name of a favorite broadcaster. Click a station that you like, and click the *Favor* star; then close the window by clicking the red X in the upper-right corner of the window.

In the main interface, uncheck the *Genre* box and click the *Favorites* box, leaving only that option selected. Your stations should be listed in the window below. If you have the bandwidth, click *Start Autorip* to record from all of them at once. Radiotracker will tally captured songs in the right side of the program, complete with tags for artist and title.

Radiotracker divides songs based on tags from the stations, which sometimes differ from the true beginnings and endings of songs by several seconds. This can cause Radiotracker to pick up part of the neighboring tune by accident. If necessary, trim the beginning and ending manually by clicking a song and using the *Cut* button.

Radiotracker doesn't add music to the iTunes library, but you can automate that process with a free utility called iTunes Folder Watch (find.pcworld.com/59802). Install and open this program, and select the Radiotracker audio folder. As you record Radiotracker songs, iTunes Folder Watch imports them into iTunes. In Windows Media Player, right-click the *Library* button, and use the *Monitor Folders* button to perform the same tasks.

IN VIDEOREDO, if you accidentally mark good parts of the video in red, click Trim Unselect to keep those sections and toss the rest.

THERE'S METHOD in Radiotracker's maddening interface. Use the left side to capture live stations, and the right to edit, organize, and play.

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Upgrade Your Flickr Experience With Free Tools

SHARING YOUR SHOTS online with Flickr is fun enough in its own right, but you can do so much more with a little outside help from third-party add-ons. The three no-cost tools I look at here take the popular photo-sharing site to a whole new level.

Spell it out: One of the most entertaining Flickr mashups is Spell with Flickr (metaatem.net/words), which scours Flickr for pictures that show letters of the alphabet and uses them to spell out the message of your choice. After the site renders your ransom-note-style collage, you can change individual letters to taste by clicking on the individual letter you wish to change (see the screen shot above right). When you're happy with the result, copy and paste the resulting HTML into a blog, a page on your site, or elsewhere.

SPELL WITH FLICKR is a fun, free Web site that enables you to spell out any text by using images of individual letters culled from the Flickr archives.

You're it: At moments when I need to unwind, I browse Flickr for interesting photos. Tagnautica (find.pcworld.com/59849) offers a new way to explore what's on the site. Type a tag name, and at once a ring of popular, related tags will surround the term. Click a tag in the ring, and it will move to the center, its own related tags encircling it. At any time, you can click the middle tag to go to a Flickr page displaying all photos tagged with that term.

Everyday people, everywhere: Flickr and other photo sharing sites cover the world, but FlickrVision (flickrvision.com) introduces you to the people who live in those places through either a 2D map or a 3D globe. As you watch, freshly uploaded photos pop onto the map in balloons, indicating their point of origin. If you see something you'd like to take a closer look at, hover your mouse over it and a larger view will pop up in the center of the window. There's something mesmerizing about watching snapshot slices of life from people in just about every nook and cranny of the planet appear in near real time.

—Dave Johnson

ANSWER LINE

How do I add to the Send To menu in Vista?

Morris Schultz, via e-mail

WINDOWS EXPLORER'S Send To feature has always been cool. You right-click a file, select *Send To*, and then choose where you want to send the file from the resulting submenu. Adding your own options to the Send To menu was easy in previous versions of Windows, if you knew the trick: Select *Start•Run*, type **sendto**, and press **<Enter>**. Any shortcut that you place in the resulting folder will appear on the Send To submenu.

Alas, that trick doesn't work with Vista. Try to pull it off, and an error message will inform you that access to C:\Users*youraccountname*\SendTo has been denied. That's because the SendTo "folder" at that location isn't really a folder at all, but just a pointer to another folder.

The challenge is to open the other folder. Click *Start*, type **%appdata%\microsoft\windows\sendto**, and press **<Enter>**.

If you can't remember that long command (and I know that I couldn't), here's a way to make things easier:

With the SendTo folder open, right-drag the SendTo folder in the left pane's Folder section to the Start Menu's *All Programs•Accessories* submenu (see the screen shot at right) and drop it in a space between menu items (not *on* a menu item). When you release the mouse, select *Create Shortcut Here*. Now if you click *Start*, type **sendto**, and press **<Enter>**, it should bring up the right folder.

—Lincoln Spector

Send questions to answer@pcworld.com. And participate in our Answer Line forum at find.pcworld.com/59441.

FOR EASY ACCESS, drop the SendTo folder into the Accessories submenu on the Start menu.

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Take Control of Windows' Recent Documents List

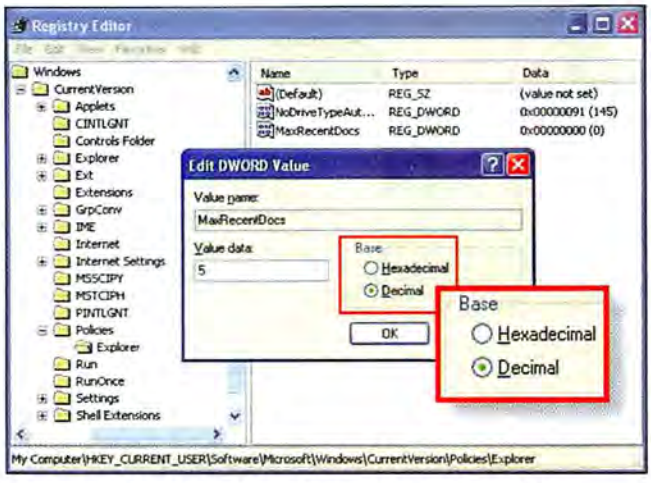
ARRANGING FOR Windows to track your recently opened documents in the Start menu can be handy, but you may feel more comfortable if you are the one deciding how many items it tracks, if any.

To turn the list on or off, right-click the *Start* button, select *Properties*, and click the *Start Menu* tab.

In XP, click *Customize•Advanced*, check or uncheck *List my most recently opened documents*, and click *OK* twice. In Vista, check or uncheck *Store and display a list of recently opened files*, and click *OK*.

Establishing a maximum number of items that the list can display is trickier. The following works only for Administrator accounts, and you should do it only after backing up the Registry.

In XP, select *Start•Run*, type **regedit**, and then press **<Enter>**. Navigate the left pane to *HKEY_CURRENT_USER\Sofiware\Microsofi\Windows\CurrentVersion\Policies\Explorer*. Select *Edit•New•DWORD Value*. Assign this new value the name **MaxRecentDocs**. Press **<Enter>** once to save the name and a second time to edit the value. For the Base, select *Decimal*. Enter the desired number, and click *OK* (see the screen shot above). Close the Registry Editor, and reboot your PC for the change to take effect.



WHETHER YOU WANT just a few items listed under Recent Documents or a bunch, enter your preference in the Registry Editor.

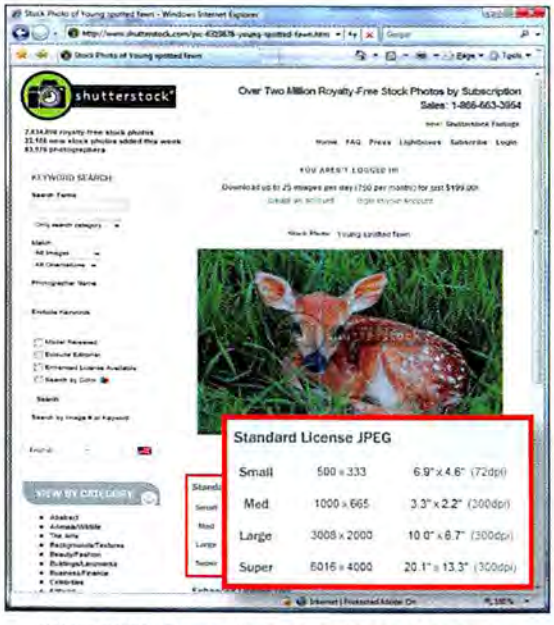
In Vista, select *Start*, type **regedit**, and press **<Enter>**. Navigate the left pane to *HKEY_CURRENT_USER\Sofiware\Microsofi\Windows\CurrentVersion\Policies*. If this folder doesn't already have an 'Explorer' subkey, select *Edit•New•Key*, name the key **Explorer**, and press **<Enter>**. With the Explorer key highlighted, select *Edit•New•DWORD (32-bit) Value*. Assign this new value the name **MaxRecentDocs**. Press **<Enter>** once to save the name and a second time to edit the value. For the Base, select *Decimal*. Enter the desired number, and click *OK*. Close the Registry Editor, and reboot to implement the change.

Bonus tip: For a better look at your recent documents, try Flexigensoft's free ActualDoc (find.pcworld.com/59851). The program lets you filter your Recent Documents list by file type or date, go to the folder housing each document, and secure the list. The Pro version, which is priced at €20 (about $29), includes file viewers, custom categories, and search.

—Lincoln Spector

Sell Your Photos at Online Agencies

THERE'S SOMETHING ALLURING about the idea of being a professional photographer, and the Web is making it easier to break into the business. In the old days, photographers had to negotiate with stock-photo agencies and send negatives through the mail. But now you can just upload your digital files to online agencies, some of which are friendly toward casual photographers looking to make a few pennies from their hobby.

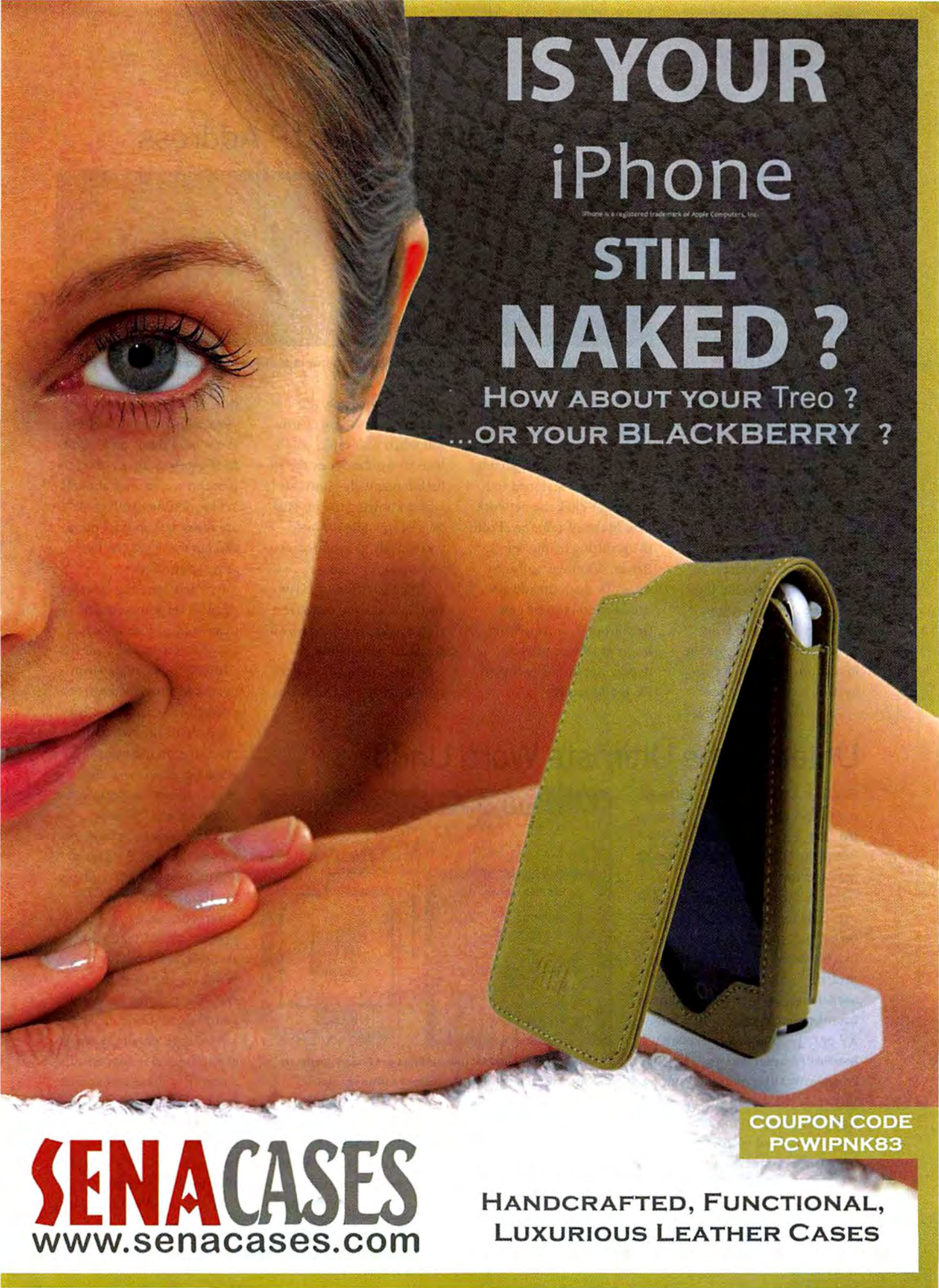


WANT TO TAKE your photography hobby to the next level? Try selling your shots on Shutterstock.com.

iStockphoto.com offers royalty rates of 20 percent for most photos. You can set a price for your pictures, from a buck to $40. Sign up, upload your photos, and wait for the money to roll in. Not just any photos will do, however; you must upload some example shots for the site's approval first.

Another site that requires you to upload test photos for approval is Shutterstock (www.shutterstock.com, see the screen shot at left). Once you're in, you receive 25 cents per sale. That doesn't sound like much—and it's not—but Shutterstock boasts that if you score 2000 downloads in a month, you rake in $500. Most of us Ansel Adams wannabes will see only a fraction of that amount, but the key is to keep your portfolio fresh by uploading new stuff (and to take great shots, of course).

—Dave Johnson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Web Connection Woes? Refresh Your IP Address

IF YOU USE DSL or cable broadband, you probably have a dynamic IP (Internet protocol) address—meaning that your PC's Internet address changes each time you log on. (In your network setup window, the mechanism for assigning your IP address is called DHCP, which is short for Dynamic Host Control Protocol.)

From time to time, however, this process doesn't behave as dynamically as its name implies: Sometimes a new address is not assigned at boot-up, and the last assigned address remains. Since a fresh IP address is necessary to reach the Internet, when you open your browser, all you see is an error screen stating that the PC cannot establish a connection to the Internet.

```
Ethernet adapter Wireless Network Connection:

   Media State . . . . . . . . . . . : Media disconnected

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . : hsd1.ca.comcast.net.
   IP Address. . . . . . . . . . . . : 192.168.1.105
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.1.1
```

IPCONFIG SHOWS YOU all the vitals about your current network connection, including your IP address.

Whether your system is connected directly through a modem or via a router, the first step involved in getting an IP address assigned to it is to right-click the network icon in the system tray. From the resulting menu, select *Repair*. Windows will automatically flush the old addresses and request new ones from your router or Internet service provider, depending on the way your PC is connected.

Most of the time, this operation works like a charm. But when it doesn't, you'll have to troubleshoot the situation manually—and this is where knowing the ins and outs of Ipconfig can help you quickly get your connection up and running.

Click *Start•Run* and type **cmd**. In Vista you can save a step by simply typing **cmd** in the Start Search box.

At the command prompt, type **ipconfig**; the DOS window will then display your currently known IP address, the subnet mask, and the default gateway for all adapters (see the screen shot above). Wi-Fi and Bluetooth cards are other possible adapters, though these may be listed as disconnected.

By itself, Ipconfig merely displays information. To make it introduce an actual change—refreshing your IP address, for example—you must add a parameter preceded by a space and a forward slash. The two parameters that do the most effective job of repairing your Internet connection are '/release' and '/renew'.

Typing **ipconfig /release** instructs the DHCP server to erase the existing IP address for all adapters, be they ethernet or wireless. The process should take a few seconds, confirmed with a display in the DOS box showing all zeros for the IP address and subnet mask.

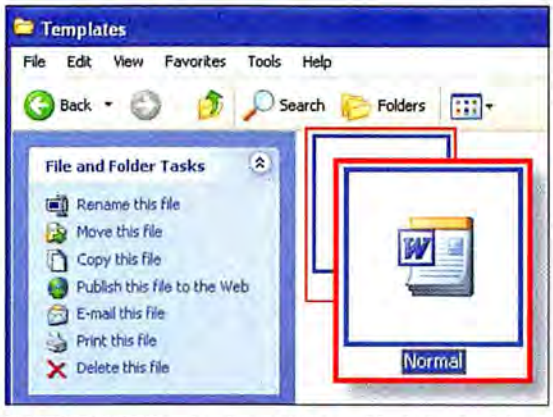
Now type **ipconfig /renew**. If the command is successful, a new IP address and subnet mask, plus the default gateway, will appear along with the DNS suffix (which is basically your ISP's address, such as comcast.net).

—Michael S. Lasky

Unleash the Ultimate Word Undo

EVER DO SOMETHING really stupid to Microsoft Word? Something like, say, accidentally deleting the File menu? (Seriously. This actually happens to some people.)

Here's the fix: Word stores macros; style formats; and menu, keyboard, and toolbar customizations in a file called normal.dot, which probably resides in **C:\Documents and Settings***yourusername***\Application Data\Microsoft\Templates** on Windows XP or **C:\Users***yourlogon***\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Word templates** in Windows Vista (see the screen shot above right). To revert to the application's previous condition, close Word, restore normal.dot from a premistake backup, and reopen Word.



IF WORD'S MENU and toolbar settings get fouled up, delete this file and relaunch Word to restore a little normalcy.

What? You don't have a backup? In that case, close Word, delete the normal.dot file completely, and relaunch Word. When it reopens, the program will automatically create a new (and uncorrupted) normal.dot file incorporating Microsoft's default settings.

—Lincoln Spector

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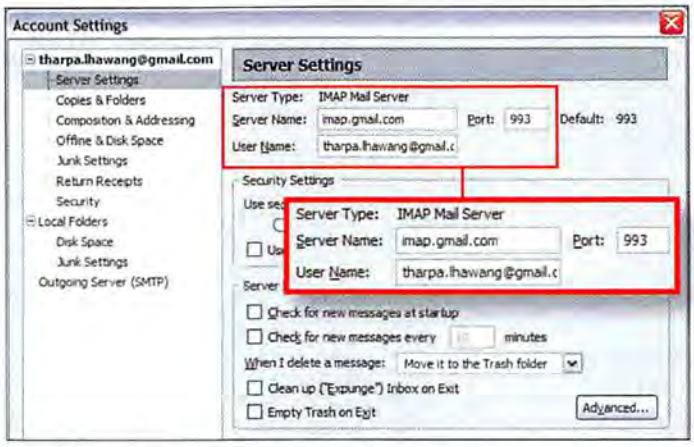
Read Gmail on Your Desktop via POP3 or IMAP

MANY PEOPLE admire Gmail's Web interface, but you may prefer to access your account via a standard e-mail program such as Outlook, Outlook Express, Thunderbird, or Apple Mail. Gmail has long allowed users to download its messages to these e-mail programs by using the Post Office Protocol (POP3) standard, in which the program downloads a copy of each message to your computer.



ENTER GMAIL'S SERVER information—including the correct port number—into your e-mail client's server settings menu to read Gmail away from the Web.

The service recently added support for the Internet Message Access Protocol (IMAP) standard, which is designed to let the e-mail program leave messages on the server, downloading a copy for local viewing only when needed. One key benefit of IMAP is that your inbox, sent-mail, and sorted-mail folders (or in Gmail's case, labels) look the same no matter which PC or program you use to access them. IMAP is also perfect for accessing your mail from cell phones.

You must make some decisions before you can read Gmail in your e-mail program. First, in Gmail, select *Settings•Forwarding and POP/IMAP* and specify either POP3 or IMAP. For POP3, select *Enable POP for all mail* or *Enable POP for mail that arrives from now on*. The first option causes your e-mail program to download everything in your Gmail account. The second option ignores past messages and starts your POP3 downloads from the present moment.

Now decide what to do with messages in Gmail after you've used your e-mail program to download them from the 'When messages are accessed with POP' menu. Gmail offers a ton of free storage, so avoid the 'delete Gmail's copy' option and choose *archive Gmail's copy* instead. The 'keep Gmail's copy in the Inbox' option leaves Gmail's mail list unaltered by your POP3 downloads. Click *Save Changes* to enable POP3 in Gmail. To enable IMAP, select *Enable IMAP* and click *Save Changes*.

In Gmail, choose *Settings• Forwarding and POP/IMAP*, and click *Configuration instructions* in either the POP or the IMAP section of the page for details on how to configure your software. For a POP3 configuration, the server for incoming mail is pop.gmail.com on port 995 using Secure Sockets Layer (SSL) security, and the server for outgoing mail is smtp.gmail.com on port 465 using SSL or on port 587 using the newer Transport Layer Security (TLS) protocol. Don't enable log-on options that use Secure Password Authentication. The incoming mail server for an IMAP configuration is imap.gmail.com on port 993 using SSL security (see the screen shot above left); and the outgoing mail server is smtp.gmail.com on port 465 using SSL or on port 587 using TLS.

Labels as Folders

Whether you choose IMAP or POP3, as soon as your e-mail program connects to the Gmail server, it will find and display your Gmail labels (including 'Sent Mail', 'Spam', and 'Starred') as folders. If you choose POP3, creating or deleting folders in your mail program won't affect your Gmail labels, but deleting a folder will also delete the files contained in the folder from the server. If you choose IMAP, creating or deleting folders in your mail program will create or remove the corresponding label on Gmail, because that is where the folders/labels actually reside. Deleting a folder doesn't delete the messages it contains, just as deleting a label in Gmail doesn't delete the messages that are tagged with it.

—Scott Spanbauer

ANSWER LINE

How much wattage should my new power supply provide?

Steven Zezulak, Englewood, Colorado

AS A GENERAL rule, you should go for as much power as all the devices inside your PC require, plus 30 percent. If you're not sure, err on the side of too much. Other than price, buying a too-powerful supply has no downside, since a 500-watt power supply can run a 200-watt computer as efficiently as a 300-watt power supply can.

The power supply is one of the cheaper components on a PC, but a good one is worth paying a few extra dollars for. A power supply from a respected company such as Antec, PC Power and Cooling, or Seasonic will cause fewer problems, last longer, use less electricity, and run more quietly than a cheap knock-off will. For more details on selecting an appropriate power supply, see "Do the Math to Get Your PC All the Power It Needs" (find.pcworld.com/59835).

—Lincoln Spector

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STEVE BASS'S HASSLE-FREE PC

Five Smart Fixes for Dumb PC Annoyances

Say good-bye to annoying red (and yellow) Windows warnings, stop USB device problems, replace your Clipboard, and Webify your mail.

IS WINDOWS BUGGING you about USB devices that aren't even plugged in anymore? Or harassing you with bogus security alerts? Or popping up lots of unnecessary notifications? I have all the fixes—plus a cool, free Clipboard substitute.

USB SAFELY REMOVE, a $20 download, lets you see the device you are disconnecting, so you can avoid accidentally losing your data.

Safely Remove External Devices

The Hassle: *I disconnected an external USB drive, but I can still see it in Windows Explorer. And every few seconds I get a 'Delayed Write Failed' error message. It's a pain in the neck—and confusing.*

The Fix: The case of the phantom flash drive, eh? The Safely Remove Hardware tool (the green arrow in the system tray) is meant to complete any reads or writes and then flush disk buffers on the device. Not using it—and just disconnecting the device—is a game of high-tech Russian roulette that can result in corrupted files.

You probably know the safest way to disconnect such hardware: Click the green arrow icon, highlight the device, and click *Stop*.

If you're constantly swapping flash drives and other USB external add-ons, you might want some extra help. USB Safely Remove (find.pcworld.com/59487)—a handy, $20 program—gives you more ways to handle multiple USB devices. For instance, the tool allows you to stop peripherals via keyboard shortcuts and lets advanced users employ command-line batch files to stop multiple gadgets.

End Windows Security Alert Nags

The Hassle: *I update my antivirus program daily, but the red Windows Security Alert still warns that my system is at risk. Why?*

The Fix: Windows sometimes wacks out with warnings; the one that you're talking about can appear if you disable a component of your antivirus. As long as you're positive your antivirus program (or firewall, for that matter) is working and updated, zap the Windows alert: Click the pop-up balloon warning to open the Windows Security Center. Choose *Recommendations* in the Virus Protection panel and check *I have an antivirus program that I'll monitor myself.*

Stop Yellow Balloon Alerts

The Hassle: *When I send anything to my networked printer, Windows XP pops up a yellow confirmation bubble telling me the item printed. How can I turn that annoying option off?*

The Fix: In Control Panel, choose *Printers and Faxes*. Click *File• Server Properties*, and select the *Advanced* tab. Near the bottom, uncheck the box for *Notify when remote documents are printed*. In Vista, follow the same steps, but uncheck *Show informational notifications for network printers*. (On your network, you may have to right-click the printer involved and click *Run as Administrator* first.)

Make E-Mail Programs Recognize Web Links

The Hassle: *I tried another browser, didn't like it, and uninstalled it. But now that I'm back to using Internet Explorer, none of the links that I click in e-mail or on a Web site work.*

The Fix: When you uninstalled the other browser, it didn't restore default rights to Internet Explorer. From the Control Panel, open *Internet Options*, select *Programs*, and choose Internet Explorer as the default browser. If the links still don't work, use SetBrowser (find.pcworld.com/59489) to reset your browser through brute force.

Note: Despite the warning posted on the creator's site, the SetBrowser program works fine with Firefox.

Quick Tip: Get Your Product Key

One day you might need to retrieve your product key—the CD key—for your Windows installation or for Microsoft Office. Save yourself a headache by running Magical Jelly Bean Keyfinder (find.pcworld.com/59490). The utility is free but is supported by donations.

TOOL OF THE MONTH

Manage Your Clips

YOU USE WINDOWS' Clipboard, right? You'll love Polar's MultiClipboard, a free utility with skills that are light-years beyond Windows' cut-and-paste function. You use <Ctrl>-C as usual, but in the background MultiClipboard captures and saves everything you send to the Clipboard. When you are ready to paste, <Ctrl>-V works for the last clip, or instead you can bring up MultiClipboard with a hot-key and pick from the saved clips—including images, multiple files, and text. On a network, you have the option of sharing clips; you can make clipped items permanent and assign a shortcut key to each one, too. Get it at find.pcworld.com/59491.

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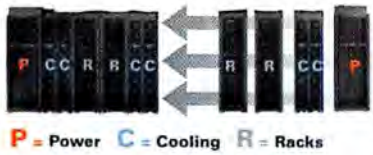

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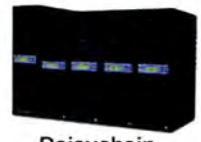

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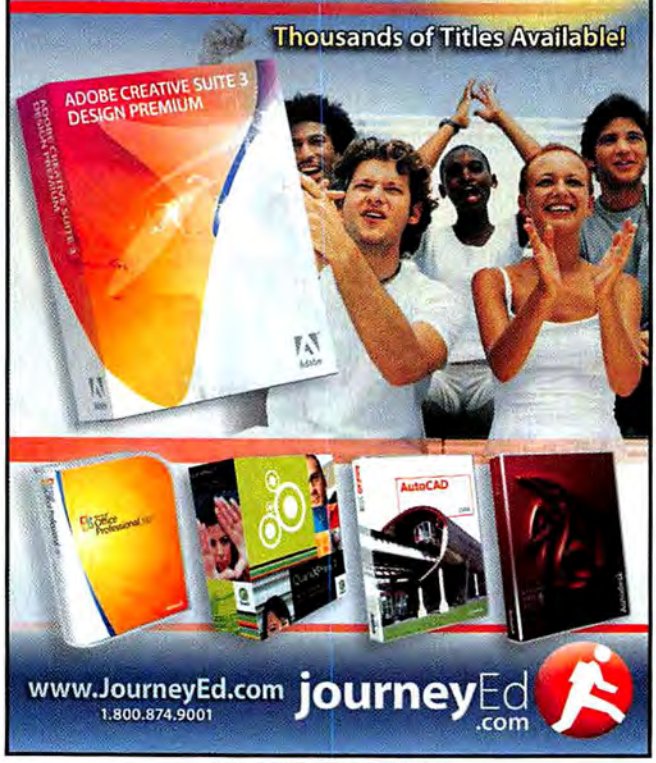

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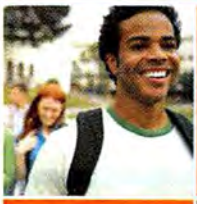

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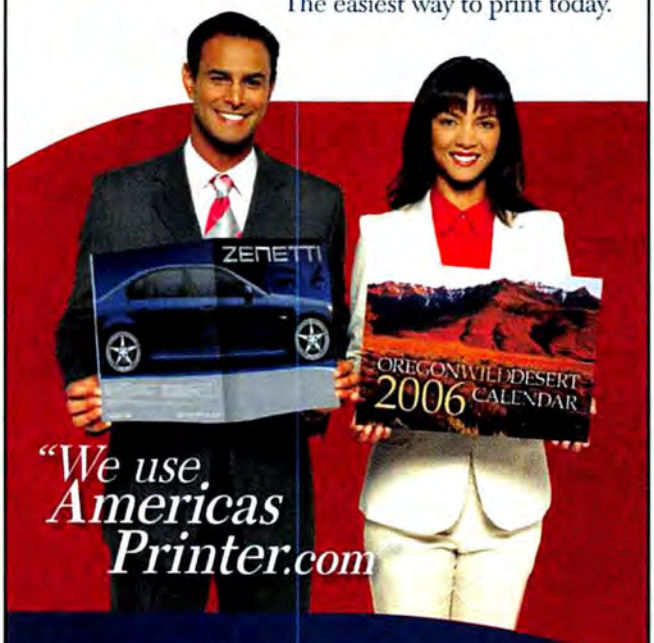

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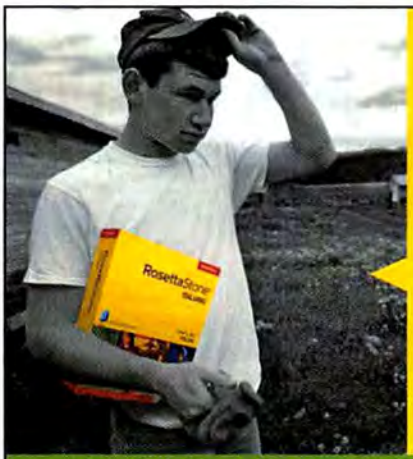

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Full Disclosure

STEPHEN MANES

25 Years Ago: Free, Easy, Software Begins

TWENTY-FIVE YEARS AGO, a writer named Andrew Fluegelman became the editor of a new magazine—this one. He was already something of a celebrity in the wider world of personal computing as the father of "freeware," a concept that he had popularized, starting in late 1982, with the release of his trailblazing communications program, called PC-Talk.

When I heard about plans for this anniversary issue, it occurred to me that Fluegelman's influence, and his program's, amounted to far more than we realized at the time. PC-Talk was clearly a pioneer in helping PCs do something easily that initially was addressed as a clunky afterthought: communicate across vast distances. But I've recently come to understand that Fluegelman's little gem also pointed to a concept that went nameless at the time—open-source software—and to today's cornucopia of free applications and services.

Before March 1983's introduction of the IBM PC XT, a serial port was a pricey option. Getting a PC online meant adding the serial port, typically on a big card that included extra RAM and perhaps a video or printer port as well. Then you'd need a modem running at 300 or maybe a "blazing" 1200 bits per second.

Throw in a serial cable to connect the two and an RJ-11 cord for the phone line, and you still weren't ready to go online. COMM.BAS, the communication program that came with IBM's machine, couldn't even save files to disk, and the $50 IBM program called something like Asynchronous Communications Support was unusable.

So into this yawning breach stepped Fluegelman with his PC-Talk software. Remarkably, the program was:

Free. Since you probably couldn't exchange files over phone lines without PC-Talk in the first place, the official distribution method was to send Fluegelman a blank disk with a self-addressed postage-paid mailer. The program did its job in 34 kilobytes; the manual weighed in at a whopping 39.

Viral (in the most positive way). The opening screen read "If you have used this program and found it of value, your contribution ($25 suggested) will be appreciated... Regardless of whether you make a contribution, you are encouraged to copy and share this program." The application and Jim Button's PC-File were the great-grandparents of shareware.

Open to view and change. PC-Talk was written in interpreted BASIC and saved without encryption "protection," so the source code was totally open. Although the documentation said "PLEASE NOTE that it should not be necessary to make any user modifications to the program," it also went on to detail several changes that users might want to make.

Licensed with reasonable restrictions. The license terms, which didn't appear on screen unless you called up the program code, amounted to just two basic items: You couldn't distribute the program to others in modified form, and you couldn't charge money for it. Where were the lawyers?

In the early 80s, our first editor made history in multiple ways.

PC-Talk's brilliantly simple interface and its straightforward, ultracheap license terms (in an era of particularly clunky copy protection) made it a de facto standard for a couple of years. Then other programmers delivered better knock-offs using programming languages that were faster and more flexible than sluggish interpreted BASIC. But through his efforts to enable new methods of PC communication, software distribution, and program openness, *PC World*'s (and *Macworld*'s!) first editor—who apparently took his own life in 1985, alas—broke ground that today is more fertile than ever. ●

ILLUSTRATION: JOHN CUNEO

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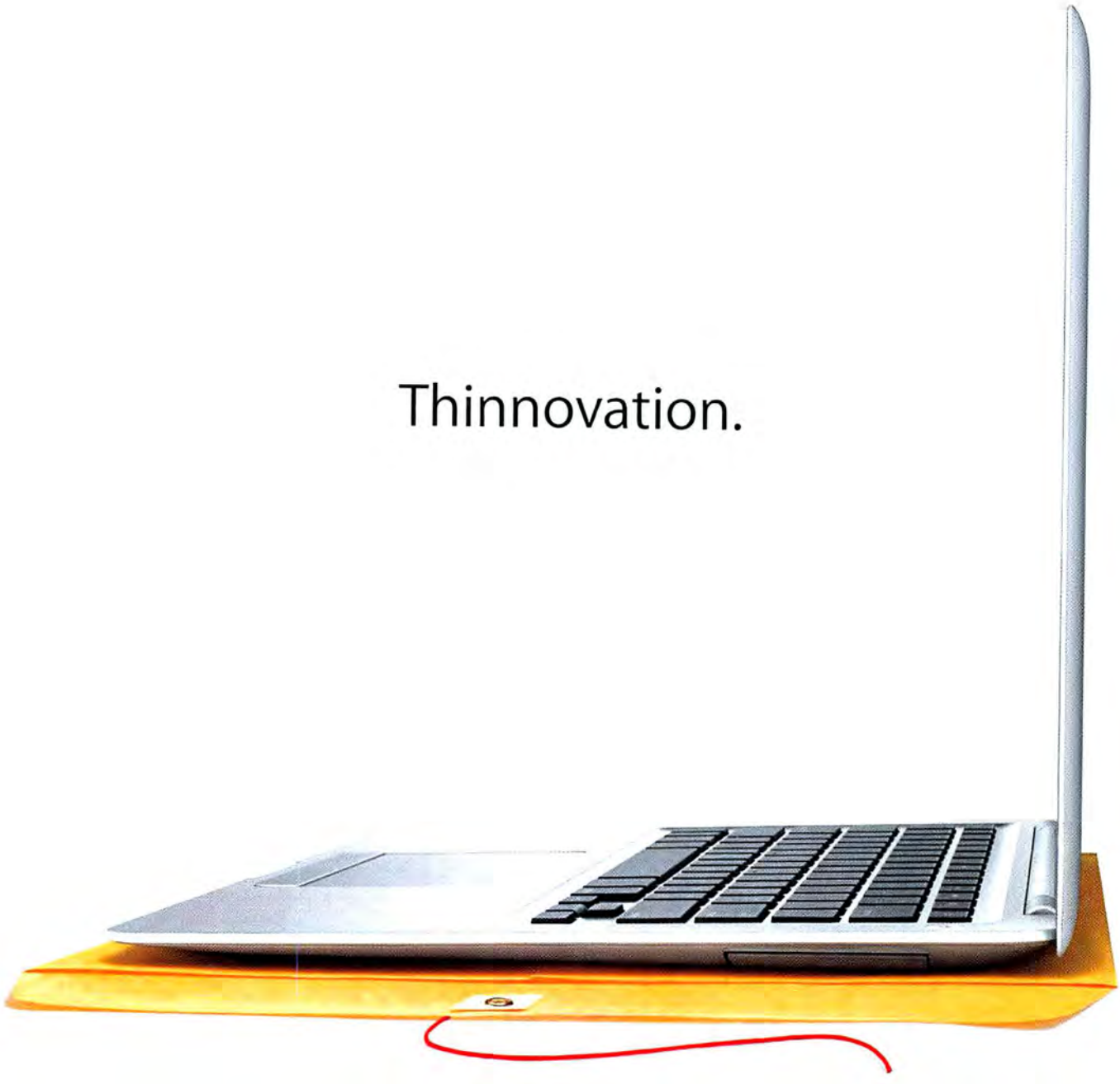

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