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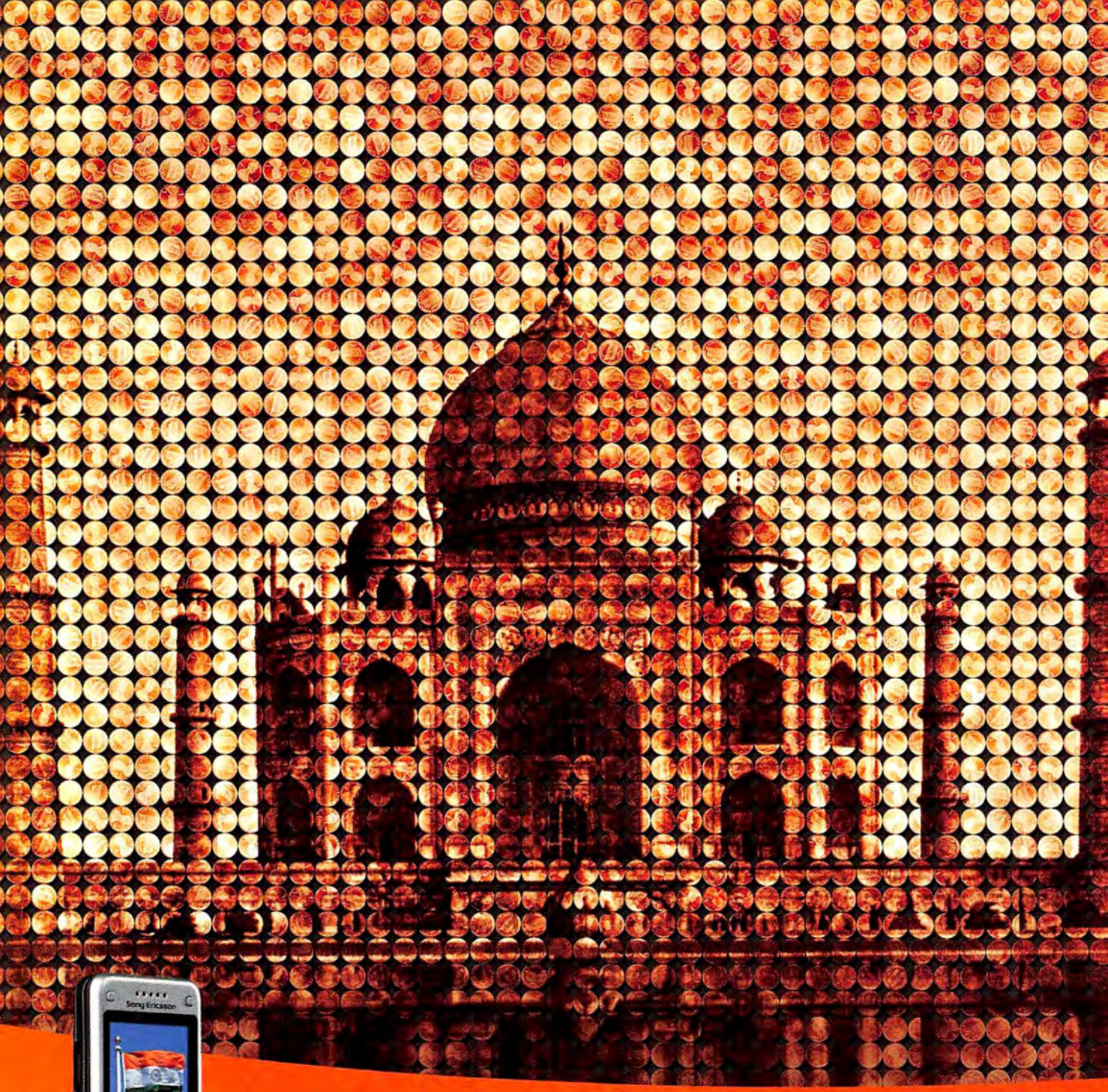

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STEVE FOX

Sleazy Scammers Push Unrelenting Assaults

The bad news: Con artists are cranking up the volume. The worse news: We alone must be responsible for protecting ourselves.

DON'T TAKE CANDY from strangers. In other words, if something looks too good to be true, it probably is. It's one of the first, and hardest, lessons that we're taught as kids.

Later, as we gain greater awareness of the outside world, we hone our survival skills and learn to regard virtually all offers with at least a little skepticism. Yet no amount of early-life training could possibly have prepared us for the volume of phony come-ons and sleazy practices we now face on a daily basis.

To get a sense of how severe the problem has become, I decided to spend a week keeping track of all the weasels trying to rip me off. I found plenty of volunteers.

I encountered the usual spam offering illicit medications, plus one old-school message from a Nigerian diplomat who has $30 million waiting for me. I'm not counting those. Like most of you, I've become inured to mere spam. Besides, the smarter con artists have better tricks up their digital sleeves. I tallied six likely phishing expeditions, including a particularly clever message that gave me a bank account number and a PIN so that I could "confirm my account balance" at Habib Bank Ltd.

I also had four phone calls on my (unlisted) BlackBerry and on my office phone, alerting me that my car warranty was about to expire—but (here's the tip-off) I don't have warranty coverage on my car. All the messages, by the way, were touted as "the final call before we close the file." Promises, promises.

Scams, and More Scams

I recently posted an ad on Craigslist to sell an armoire. Four buyers who responded were happy to meet my price, as long as I would take an out-of-state check. Coincidentally, all four insisted that they would have their own moving company pick up this heavy piece of furniture. It's a classic scam that ultimately leaves the seller with a worthless check and no merchandise.

While adding up the week's assaults, I got a frantic e-mail message from my sister-in-law. Her computer had been hijacked by a pop-up from "Antivirus 360," which apparently had identified a virus on her PC. If she would pay $50 for the full security program, everything would be hunky-dory. Should she fork over the money, she wondered. As it happens, this is a variation on the Antivirus 2009 scam we describe on page 41 ("Fake Infection Warnings Can Be Real Trouble"). Save your cash, I told her.

The final count? Not including good old spam, I fended off more than 20 attempted rip-offs in a seven-day period. That set me to wondering: How did things get to be so bad?

Certainly the ease with which anyone, including evildoers, can bend technology to their will is part of it. So is the shaky economic climate. The more intriguing question, though, is: What can we do about it? We know that tech solutions have not, alas, worked all that well. The bad guys always seem to be at least a step ahead of the good guys.

Besides, the assaults I'm talking about are not that technologically sophisticated. They rely on social engineering—convincing victims to take some unwise action, like revealing their passwords or granting access to their PC, by appealing to their fear or greed. Legal deterrents have also flopped. Just look at what a bang-up job the federal CAN-SPAM Act did of stopping spam.

So that puts the burden of protection squarely on the shoulders of the attacked. To be a safe citizen in our digital culture (as I assume you wish to be, since you're reading this), you must be your own bunco squad.

The Best Safeguard

Safety begins with education. You can check out questionable offers at sites like Scambusters.org and the community message boards at Scam.com. If you're still intrigued by a pitch, use your search engine to investigate. And don't simply accept the first link that pops up in Google; get several points of view. If something is fishy, you'll know soon enough.

The rest is mostly common sense. As you've been told time and time again, keep your antivirus software up-to-date, don't click on links in e-mail, and unless you look like Brad Pitt or Angelina Jolie, don't respond when you see that "someone on Facebook has a crush on you" message. Come to think of it, you should ignore those links even if you do look like Brangelina.

And in case you were wondering, it's still a bad idea to take candy from strangers. But you knew that already.

Steve Fox is editorial director of PC World.

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PCW Forum

Reports show that the United States is falling behind in technologies such as broadband for high-speed Internet connections—and this lag is a growing concern of our readers, as indicated by responses to February's Techlog editorial on the topic. Post your own comments at forums.pcworld.com.

A New Deal for High Tech?

February's *Techlog* ("In Support of a New Deal for High Tech") prompts some reflections. For several years we lived in a small town west of Salem, Oregon. The high-tech companies did not find it profitable to invest in the infrastructure there. Cellular service was very poor, even with a cell tower in view of our home. Internet was dial-up. The city then installed a fiber-optic network and offered high-speed Internet, TV, and telephone.

As a child I remember the REA [Rural Electrification Administration], and we got electricity on the farm.

I have read articles that list the average connection speeds of the U.S. and other countries, and am simply amazed at how far behind we have gotten in some aspects. Perhaps it is time for our government to again become heavily involved in the modernizing of our nation. It won't be cheap and it won't be quick—neither was the REA—but it will be effective. Who knows, perhaps we will again lead the world.

Gary Shearer, Salem, Oregon

America did *not* rise to "the top of the intercontinental food chain," as Fox claims. Instead, America's former World War II enemies technologically leaped far ahead of us. Examples?

Germany long ago undergrounded its telecommunications and power lines. No outages from summer/winter storms nor from fallen trees.

And Japan is connected to the Internet via wireless networks at broadband speeds. No massive street ripping nationwide, nor millions of satellite-dish antennas littering neighborhoods.

Donald White, Falls Church, Virginia

Vampire Power Waste

Regarding "Stop Your Electronics' 'Vampire Power' Waste" [*Consumer Watch*, February]: Significant contributors to the problem are the ubiquitous two-pronged black blobs with wires ending in minijacks of varying format and polarity—power adapters. They draw current inefficiently, with a continuous leakage of milliamps even when their associated devices are not in use.

Shouldn't the electronics and architectural communities work with the National Bureau of Standards to devise low-voltage DC circuits and centralized transformer/rectifier units for new buildings? A demand for low-voltage DC electricity service has arisen with the advent of solid-state technology.

We are now reaching the point where buildings need low-voltage DC facilities more than they do 110-volt AC outlets!

Horace Hone, Palm Coast, Florida

With a little investigation one might find that approximately 99 percent of the "waste" is in the form of heat. So if you live in an area that requires you to heat your home to keep from freezing and you remove one source, you will have to make it up with another.

Check what method you use to heat your dwelling, and the cost, to see if it really pays to buy a power bar and switch all of these devices off every time you walk away.

James W. Carter, Pugwash, Nova Scotia

PC Reliability and Service

Regarding the low ratings of HP in February's "Reliability Report Card: Grading Tech's Biggest Brands": When Hewlett and Packard were running HP, it was a really great company with first-class products. Since that time, we have seen a slide in quality and service.

Your article should be titled "Don't Buy Modern Convenient Appliances: Stop the Power Drain." Almost anything that uses energy uses part of that energy to make life more convenient for us.
Balayage, PCWorld.com comments

After trying to get help for a printer from some Indian "help center," I went to my local computer man. The Indians simply read from an answer screen and appeared to have very little knowledge.

oldfellow, PCWorld.com comments

I have been using HP desktops and other HP products for a long time. I'm now using an HP desktop that is at least five years old with an HP printer that is also as old. Neither has given »

ILLUSTRATION: HARRY CAMPBELL

me any trouble. Over the years I have had the unpleasant task of helping friends and others with their problems, but none of these instances, as far as I can recall, involved HP products.

Bottom line: I don't care what kind of report you come up with—you couldn't pry my HP devices from my hands to go to anything else.

twstanton, PCWorld.com comments

Not-So-Fast Fix

In February's "Fast Fixes for Common PC Problems," the item "Rescue a Wet Cell Phone" suggests putting the phone in a bowl of dry rice overnight. I tried that on my new BlackBerry Curve, but 24 hours didn't do the trick. I left it in a bag of rice for another four days, however, and it has worked almost flawlessly since then. Bottom line: You may need more than 24 hours for this fix.

Michael F. Kinney, Omaha

Wireless Network Security

I was astonished at the bad advice on page 77 of your February issue—in a small section of "Fast Fixes for Common PC Problems" entitled "Stop Your Neighbors From Stealing Your Wi-Fi Bandwidth." It recommends that readers "turn on MAC address filtering in your router's security settings....[A]fter that you'll need no additional security at all. Only known devices will...connect, so a password isn't required."

MAC address filtering is *not* secure, and WPA (or stronger) encryption should *always* be used with a wireless network. Someone who can't connect to your network can still sniff every packet you're sending and receiving.

Alex B., Minneapolis

Editor's response: We should have said that using router encryption is still recommended for security. MAC address filtering was suggested as a time-saver for home users more concerned about casual broadband poaching than overt data theft.

—Robert Strohmeyer

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 (forums.pcworld.com). Send e-mail to letters@pcworld.com. ●

CORRECTIONS

MARCH'S "ONLINE DRUGS: Mostly Legal, Maybe Lethal" (*Forward*) should not have included Michigan as among the states that have criminalized *Salvia divinorum*.

March's *Download This* should have said that the FilerFrog add-in costs $10 to keep after trial.

PC World regrets the errors.

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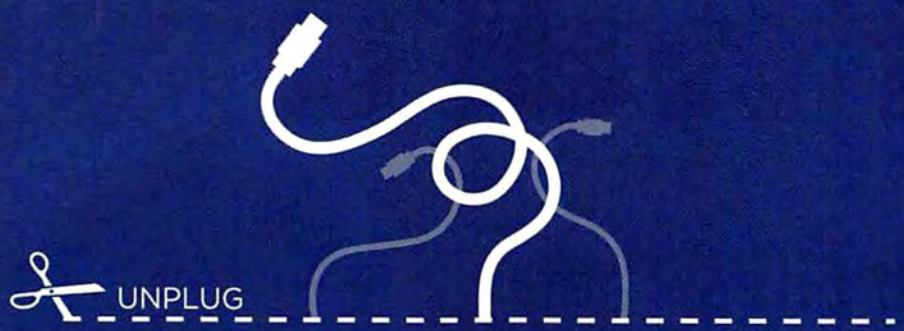

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Forward

10 Web Sites That Will Matter in 2009

You've probably never heard of many of these Web sites—but chances are, you'll be using some of them regularly by the end of this year.

BY MARK SULLIVAN

ARGUABLY, 2008 WAS the year of Facebook, Hulu, and Twitter. For a while I was wondering what Web sites, come next year, we'll agree had the most impact in 2009, but then I decided to make a few educated predictions. And I chose them from among the sea of new or up-and-coming sites you may not have heard of yet.

TV.com

In May 2008, we predicted Hulu.com's rise to prominence (see find.pcworld.com/62465), and its ascent was a huge win for NBC Universal, which owns Hulu (along with News Corporation).

But CBS is not taking that lying down. When it acquired the tech Web site CNet last year, it bought the rights to the TV.com domain; now it has added full-length prime-time shows and movies (not just clips) to the site from partners such as Metro-Goldwyn-Mayer, PBS, and Sony—plus content from CBS-owned Showtime.

TV.com relaunched in January. Before that, the site offered only promo clips, cast profiles, interviews, and discussions—yet it had 16.5 million viewers per month. That number should climb steadily during 2009 thanks to the new video content.

Still, the video quality, even of the high-definition stuff, can't match the clarity of Hulu's offerings. That will have to improve if CBS wants to dethrone Hulu as "Web video central" this year.

Qik

Qik.com provides a platform where you can easily stream and share live video from your cell phone's camera. At the site, you can find live video streams being shot by Qik members around the world. This is great for family clips, allowing grandparents in the United States to watch their baby grandson in Italy in real time, for example.

After you're done streaming your video live, Qik will archive the video. If you set it up to do so, Qik will send the video to YouTube, your blog, or your Facebook page, too. Using Qik doesn't require a fancy smart phone; an inexpensive, Java-based cell phone will do the job.

Boxee

Boxee (boxee.tv) gathers video from all over the Web (CNN.com, Hulu, YouTube, and many others) and puts it in a neat and simple-to-use interface. This creates a programming guide for Internet video, so you don't have to surf around. Boxee organizes video, images, and music on your hard drive, as well.

Any Web video destination

PCWORLD.COM

Which new Web sites do you find most valuable? Learn about some of the spiffiest sites that other PC World readers have discovered, and suggest your own favorites, at find.pcworld.com/62431.

ILLUSTRATION: RON CHAN

must solve the user's basic problem—"What do I watch when I don't know what I want to watch?"—in order to keep eyeballs glued to the screen. Boxee enables you to get recommendations from perhaps the best source you have: your friends. After forming friend groups with other Boxee users, you can see what they're watching or they can suggest stuff to you.

Currently Boxee runs on Intel-based Macs, Apple TV, and Linux machines. A Windows version should be out soon, the company says.

BlackBerry Application Storefront

Research in Motion's BlackBerry handhelds and the software that runs on them have become sexier and more entertainment-oriented, introducing an element of fun to devices that have traditionally been business tools.

RIM is taking a page from the iPhone playbook by opening a store for independently developed programs, called the BlackBerry Application Storefront. Current (and prospective) BlackBerry users are no doubt eager to see the new apps, and the Web site that displays and sells them will certainly be a popular place this year. The Storefront is slated to open in March.

Loopt

A major trend in mobile apps is the ability to detect your location and to use that information in practical and compelling ways. Loopt (www.loopt.com) fits that bill perfectly, mainly because it combines location awareness with social networking.

Loopt displays a map showing your position and the position of your friends who are in the vicinity. Once you have pinpointed their location, Loopt can detect businesses in the area and make suggestions for a meeting place based on your interests or queries ("beer, pizza, bowling"). You can read what friends have said about prospective meeting spots, or see reviews from Yelp.

When you've found a destination, you can invite your friends and access directions, as can your friends. You can also find new friends by looking for other Loopt users who have similar interests (favorite bars, say) to yours.

THE REVAMPED TV.COM now offers high-def video, plus full-length TV shows and movies from owner CBS and major content partners.

Blip.fm

I'm not the first to make the comparison, but Blip.fm is like Twitter for music. You see a scrolling list of people's song choices with their short comments (called blips). You can listen to "blipped" tunes as they come, or skip through the list. If you like particular users (called DJs), you can give them "props" for the songs they play, or you can "follow" them. After you've found several DJs that you decide to follow, you can switch to a mode where you see only that group's blips.

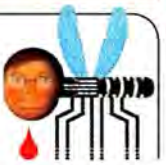
If you think of a song you want to blip, just search for it, make your selection from the results, write a comment, and click *Send*—your blip then joins the stream of other blips. It's surprisingly engaging and fun, especially if you find good DJs to follow or if your real-world friends sign up and participate.

Power.com

There aren't many sites with 5 million users that we have not heard of, but Power.com was one, and it's a name you might hear a lot more often. The "social inter-networking" site operates on the premise that many people now »

PLUGGED IN ALAN STAFFORD

WHAT'S BUGGING YOU? To make a point about malaria, Bill Gates releases mosquitoes at a tech conference. Attendees were lucky; he could've released another Windows version.



KINDLE 2 CONNIPTIONS: Amazon peeves some Kindle 1 owners with its gracious offer to let them be first to pay $359 for a Kindle 2. Perhaps Amazon could provide free shipping.

USER REVIEWS REDUX: Belkin marketing weasel offers to pay for positive reviews, slams of competitors' products. Outrage! His rates were lower than SponsoredReviews.com's.

PROFIT AND LENOVO: After losing $97 million last quarter, Lenovo fires its CEO. Only $97 mil? If he had worked for Citigroup, Fannie Mae, or GM, he'd have received a huge bonus.

AT&T, COMCAST RATS: Rumor has it that the big ISPs will begin assisting the music industry in its antipiracy efforts. Fine; we'll just steal music at work, where it's safe.

TWO-FACED FACEBOOKER: A British man announces his divorce to all—including his wife—via a Facebook post. Such public displays are so unseemly. Couldn't he have texted her?

ILLUSTRATIONS: GORDON STUDER

ON BLIP.FM, USERS comment on the songs they're currently enjoying. You can listen to 'blipped' tunes as they come, or search for favorites.

TWEETAG ACTS AS a search engine for Twitter, allowing you to view hot topics and to hunt for messages containing particular keywords.

belong to several social networks and that it's a hassle to log in to each one and post on it separately.

Power.com lets you log in once and then view (and post to) any of a long list of social networking sites that you sync it with. You can see the posts and status changes of friends on multiple social networks, and simultaneously send messages or updates to all of those sites. You can also log in to MSN and send IMs from within Power.com.

Late last year Facebook complained about Power's ability to store Facebook users' passwords and to access Facebook users' content. After all, Facebook has its own scheme for connecting to multiple networks, Facebook Connect. Facebook filed suit when talks with Power failed. Power says the companies are now working out their differences.

Tweetag

Millions of people around the world are adding content (in short dispatches called tweets) to the Twitter stream every day. Some of the content is actually worth reading—serious discussions, not just idle chatter.

Tweetag (www.tweetag.com) is a sort of search engine for tweets. You can use it to look for trends in topics publicly discussed on Twitter, and to find discussions of things that matter to you.

On the front page you see a tag cloud showing the most discussed topics on Twitter right now. You can search for Twitter messages containing a particular keyword, too, after which Tweetag suggests other keywords to help narrow down your results. Using tabs, Tweetag organizes results based on whether they are "re-tweets" (another Twitterer seconding an idea), replies to tweets, or tweets that contain questions or links.

Hi5

Hi5 (www.hi5.com), the third-largest social network in the world, is virtually unheard of in the United States. That could change. Hi5 typically has 60 million unique visitors every month, most of them in other countries (40 percent come from Spanish-speaking nations). Word has it that more U.S. users are discovering the site.

The music and video applications at Hi5 rival those of other, more popular social networks, and Hi5's mobile app is first-rate. Hi5 won't be bigger than Facebook in the U.S. by the end of the year, but it will have grown significantly, and it will have given many people an attractive alternative to try out.

TRIPIT COLLECTS ALL of the information related to your travel arrangements into a convenient master itinerary.

Tripit

Tripit (www.tripit.com) is designed to be your personal, full-service travel assistant. For me, a typical trip involves a number of modes of travel—planes, trains, taxis, and so on—as well as restaurants and hotels. All of that adds up to a lot of details to track. Usually I make a hard copy of all my reservations, staple them together, and carry the bundle with me.

Tripit aggregates those kinds of details; adds handy tools such as maps, local attractions, dinner reservations, and weather reports; and then wraps everything up in an easy-to-use master itinerary. You can alleviate much of the stress of travel by having the right information at the right time, and that is what Tripit offers. I think a lot of new users will reach the same conclusion.

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Office2007.com/staples

Hands-On With the Amazon Kindle 2

We spent some time with the Kindle 2 e-book reader, and we found lots to like—plus some aspects that still need improvement.

VARIOUS DESIGN changes make the Amazon Kindle 2 more appealing than the original model—but while Amazon has succeeded in enhancing its e-book reader, it has done little to advance the device to the next stage.

The $359 Kindle 2 is slimmer (0.36 inch thick), and at just 10.2 ounces, the new device weighs virtually the same as the old one. The unit's 600-by-800-resolution screen is also the same size, measuring 6 inches—but now it gives you 16 shades of gray versus the 4 shades available on the original Kindle.

I found text to be slightly crisper on the Kindle 2, with less inklike bleed-in to the virtual page. But the difference was truly evident in images, which exhibited far greater gradations. The background of the screen has changed, too: Before, the screen appeared to have a slight texture, almost like newspaper; now the surface is completely smooth. As for a promised speed boost (pages supposedly turn 20 percent faster), I noticed no more than a subtle difference between Kindle 1 and Kindle 2 in turning pages.

Among the navigation keys is a new five-way joystick. In my brief hands-on, the joystick felt stiff and awkwardly placed relative to where my hand was for the paging buttons. The scroll wheel moved much more smoothly.

On the plus side, the menu interface no longer relies on an awkward column on the right of the display. Now, the E-Ink screen technology's speed is fast enough to enable the joystick to move through options directly on the screen, highlighting your selection as you go along.

The unit's keyboard resembles the QWERTY arrangement on a cell phone. I found that the circular keys and their closer spacing on this device worked better than the rectangular keys and their angled spacing on the Kindle 1.

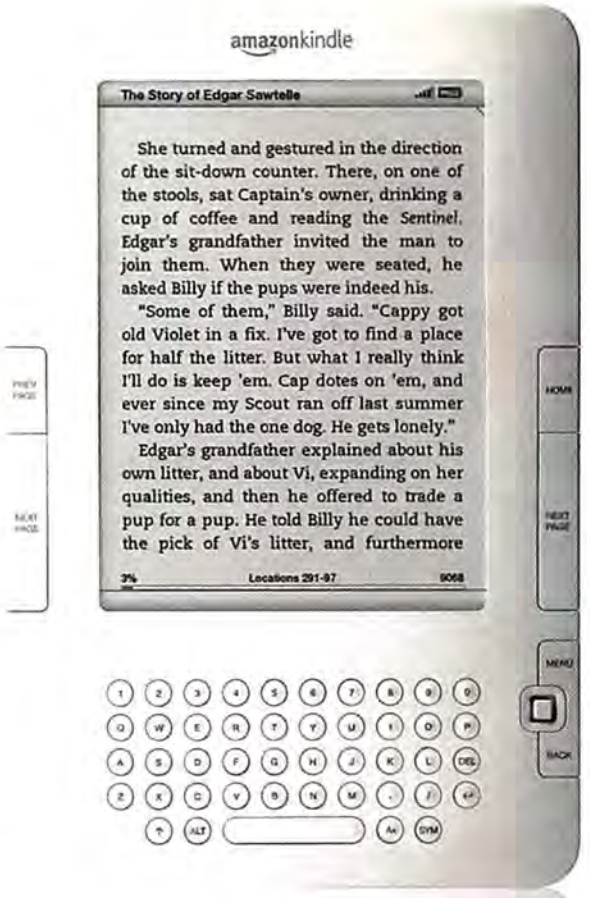
The device's new text-to-speech capability, powered by technology from Nuance (makers of Dragon Naturally Speaking), offers two digital voices—Tom and Samantha—and up to 3X fast-forward reading speed. The voices are clearly computerized but tolerable.

The Kindle 2 now powers up from USB, a nice touch. Regrettably, Amazon has ditched the SD Card slot; instead, you get 2GB of onboard storage. Your books are stored on Amazon's servers, so if you ever have to free up space on the device, you can redownload books later as needed.

You don't get a case anymore; instead, the Kindle 2 has two holes on its right edge to allow the unit to snap into third-party cases. Amazon's no-frills leather case will sell for about $30.

Amazon hasn't changed the device's file handling. You still have to go through the awkward conversion process of sending a file (such as a Word document) to yourself if you wish to view it on your Kindle.

—Melissa J. Perenson



THE SCREEN OF the Kindle 2 offers more shades of gray than the first model, producing slightly crisper text and better images.

ILLUSTRATION: GORDON STUDER

TELEVISION

Digital-TV Deadline Delayed

PRESIDENT BARACK Obama signed a bill that delays the transition to all-digital television broadcasts until June 12, in an effort to prevent millions of residents from losing their TV signals. However, 421 television stations across the country cut their analog signals on February 17, the original deadline; 220 other stations had already shut off their analog feeds prior to the deadline.

In late 2005, Congress passed legislation requiring U.S. TV stations to move to all-digital broadcasts. Much of the cleared spectrum, in the 700-MHz band, was sold in auctions. Experts say the spectrum is optimal for wireless broadband services.

—Grant Gross

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Windows 7 to Ship in Six Different Versions

Similar to Windows Vista, Microsoft's upcoming operating system will be available in several editions, each with a different feature set.

IF YOU THOUGHT that Microsoft had learned all its lessons with Windows Vista, you'll soon be disappointed. Although the Windows 7 beta, which was released to the public in mid-January, is receiving mostly positive reviews, revelations that Microsoft plans to release six different flavors of Windows 7 have left many in the tech world wondering why the company would again subject customers to such a confusing product matrix.

Microsoft says that it will steer most users toward Windows 7 Home Premium and Windows 7 Professional. For business users the company recommends either Professional or Enterprise. The company also says that it will use a single disc image of the operating system, which means that you'll receive all of the editions on your installation disc (or on a new computer); if you decide to upgrade to another version, you'll simply have to pay for an unlock code. Each version of Windows 7 will be a superset of the previous version, says Microsoft, so you won't lose any features if you upgrade.

Many analysts and users have been critical of the company's decision to issue multiple versions of Vista. That move generated consumer confusion as to which version might be best to buy, and it created compatibility issues with both software and hardware when users upgraded from Windows XP to Vista. Lastly, many people perceived the tactic as a way for Microsoft to charge vastly different prices for versions of Vista that provide features offering little benefit to end users.

As of this writing, we don't yet know about Windows 7 pricing or availability (some experts speculate that it will be out early next year). Below is a breakdown of what we do know about the differences among the versions.

First off, users of XP and Vista will be able to upgrade their OS licenses to Windows 7. The catch is that you'll still have to perform a clean installation of Windows 7, meaning you'll need to reinstall programs and back up and replace data.

Windows 7 Starter Edition

The Starter Edition is aimed mainly at emerging markets and at netbook users. With this edition, users will be able to run only three applications simultaneously, but they will benefit from interface improvements such as the new taskbar and JumpLists. In addition, consumers will be able to join a Home Group (to share media files over a local network).

Windows 7 Home Basic

The Home Basic edition will allow the use of unlimited applications at the same time, and will bring further interface enhancements such as live thumbnail previews. On top of that, Home Basic enables Internet connection sharing (including over wireless) and provides the Mobility Center (power management for laptops).

Windows 7 Home Premium

The Home Premium version will provide all the visual goodies of Windows 7, such as the Aero Glass environment and advanced window navigation. Aside from adding touch-screen implementations (such as handwriting recognition and multitouch support), the Home Premium edition will offer improved media-format support and enhancements to Windows Media Center and media streaming functions.

Windows 7 Professional

The Professional edition will provide more extensive security and networking features, such as the Encrypting File System, advanced network backup, and the ability to join managed networks with Domain Join. It will support location-aware printing, as well.

Windows 7 Enterprise & Windows 7 Ultimate

The Enterprise and Ultimate editions will have similar features, such as BitLocker data protection for internal and external drives, as well as DirectAccess for corporate networking based on Windows Server 2008 R2. Via another security feature, AppLocker, these versions will also prevent unauthorized software from running.

—Daniel Ionescu

ILLUSTRATION: GORDON STUDER

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Google Latitude Lets You Track Your Pals

DO YOU KNOW where your friends are? If not, Google can help you find them. Google Latitude lets smart phone and laptop users share their location. Though not pinpoint accurate, Latitude can display your general location based on information from GPS satellites and cell towers.

Once you and your friends have opted in to Latitude, your friends' icons appear on Google Maps. Clicking an icon allows you to call, e-mail, or IM them, and you can even use Google Maps' directions feature to see how to get to their location.

Let's say that Bob wants to share his location with Jane. He sends an invitation from his handset or PC. Jane can then accept and share her location too; accept but not share her location; or completely reject poor Bob. If Jane chooses to share her location, she can provide her best available location or simply which city she's in.

In addition to restricting specific people, Latitude will let you do a blanket location setting for all your contacts. You can set your location manually, tell Latitude to detect your location, or hide your location completely.

WITH LATITUDE, ICONS for friends appear on Google Maps. Click an icon to contact a buddy; you can get directions to their location, too.

Google says that it keeps only your most recent shared location on its servers. If you've hidden your location, Google holds no information on your whereabouts.

Even so, Google could easily build a demographic chart to show, for example, where certain age groups congregate in a particular city. I hope that isn't the case, but questions about Google's privacy practices have been raised many times before.

—Ian Paul

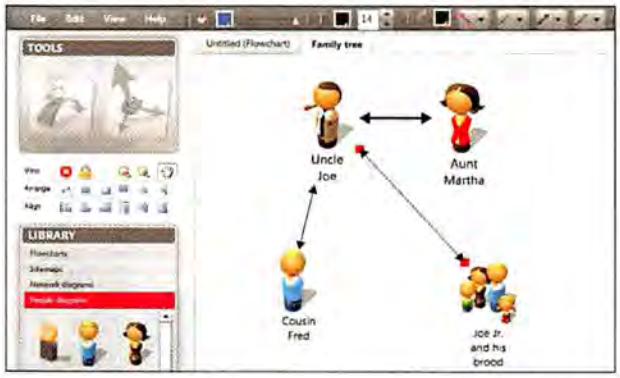
BETA WATCH EDWARD N. ALBRO

Onehub: Simple Collaboration

Onehub identifies itself first as an FTP replacement; but that limited description shortchanges this service, which packs a lot of the power of Microsoft's SharePoint without much of the complexity. With a free account, you can set up a single hub—a sort of extranet where you can upload as much as 1GB of files. Your hub can also include calendars, task lists, discussion boards, RSS feeds, images, and video. Other users can make comments about the files, or download them, edit them, and reupload them; when that happens, Onehub keeps both versions. Paid accounts range from $19 to $249 per month and from 3GB to 100GB of storage. onehub.com

Lovely Charts: Lovely, No, but Attractive

The designers here at *PC World* forbade me to touch design tools after I produced a couple of graphics that made their eyes bleed. But even if you're a design spaz like me, you can produce decent results with Lovely Charts. That's mostly because Lovely Charts whittles down your choices, offering you a few simple elements that you can drag around to create flowcharts, family trees, wireframes, and more. It's a basic online app that doesn't give novices enough rope to hang themselves, so it's not for serious designers. The free version lets you create, print, and export as many charts as you like, but allows you to save only one for future revisions. To save more, you'll have to pony up 29 euros a year. lovelycharts.com



LOVELYCHARTS.COM LETS NOVICES create family trees, network diagrams, and site maps that may not be lovely, but aren't ugly either.

Trackle: Alerts for Nearly Everything

If you have any problem with the alerts that Trackle sends, it'll likely be the sheer volume of them. This free information scouting system has more alert categories than any other I've seen. It will tell you about neighborhood crime, new movies that your favorite actor appears in, even new FDA advisories. If you really want to be depressed, it will monitor the value of your home. You can track your alerts at the site, have them e-mailed (either in one big bunch each day or instantly), or receive them through SMS. trackle.com

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Garmin, Asus Planning to Make Smart Phones

GPS DEVICE maker Garmin is teaming up with Asustek Computer's cell phone division to create a new smartphone brand, Garmin-Asus.

The new venture is considering offering devices with various operating systems, including Windows Mobile, Linux, and Android. The handhelds will compete by specializing in location-based services, executives from both companies said.

Their first cobranded product, the Nuvifone G60 (a refresh of the G60 that Garmin commissioned Asustek to build last year), is due in the first half of 2009. The alliance announced another handset, the M20, at Mobile World Congress in Barcelona, Spain, in mid-February. It will likely launch in 2010.

Asustek will phase out its own branded mobile phones and will produce any future phones exclusively under the Garmin-Asus name.

The location-based services will include maps that show various details relevant to a user's location and destination, such as traffic conditions and movie times.

—Dan Nystedt

GARMIN-ASUS Nuvifone G60

GEEKTECH

How to Play DVD Movies on Your Nintendo Wii

With just a few simple hacks, you can make your Wii video game console into a great DVD player.

FOR HARD-CORE GAMERS, the Wii leaves a bit to be desired. Previous-generation graphics, few games for adults, a weak online community, and a lack of DVD-movie playback are just a few of the Wii drawbacks that have led me to favor another console. Now, however, for anyone who has wished that the Wii could play movies, giving it the capability is easier than ever—no warranty-voiding mod chip required.

What You Need

- A Nintendo Wii with system version 3.2
- A FAT/FAT32-formatted SD Card (no bigger than 2GB, however, as the Wii can't read SDHC media)
- An SD Card reader/writer
- The Wii game The Legend of Zelda: Twilight Princess
- The "Twilight Hack" (a modified Zelda game save) and the Homebrew Channel Installer, both available at hbc.hackmii.com
- DVDX (a homebrew application that allows the Wii to read DVDs from the drive) and MPlayer (a Wii port of media player software that plays commercial DVDs), both of which are explained and available at wiibrew.org

Installing the Software

1. At your PC, insert the SD Card into the SD Card reader, and copy the 'private' directory of the Twilight Hack, as well as the Homebrew Channel 'boot.dol' file, to it.

2. Insert the SD Card into the Wii and delete your Zelda save file in the Wii File Manager (start a new game if you don't already have a save file). If you need the save file for playing the game, you can first copy it to the SD Card and then copy it back after installing HBC.

3. On the Zelda game disc, read the text on the inner ring, which should say "RVL-RZDE-0A-0" or "RVL-RZDE-0A-2". Either will work, but you must apply the correct hack (the former needs TwilightHack0, and the latter uses TwilightHack2; both are included in the download).

4. Switch to SD view in the Wii File Manager and copy the correct version of the hack.

5. Insert the Zelda game disc and start the game. You should see the Twilight Hack save file. Select it to start the game. Once you can control Link, walk backward (weird, I know) until the Homebrew Channel installer starts. After a minute or two, the HBC will install, and you can access it like any other Wii Channel.

Next, you need to install the DVD apps.

1. Pop the SD Card into the card reader and erase the boot.dol file and the 'private' directory.

2. Create a directory on the SD Card and name it **apps**. Copy the 'dvdx' and 'mplayer' directories into the folder.

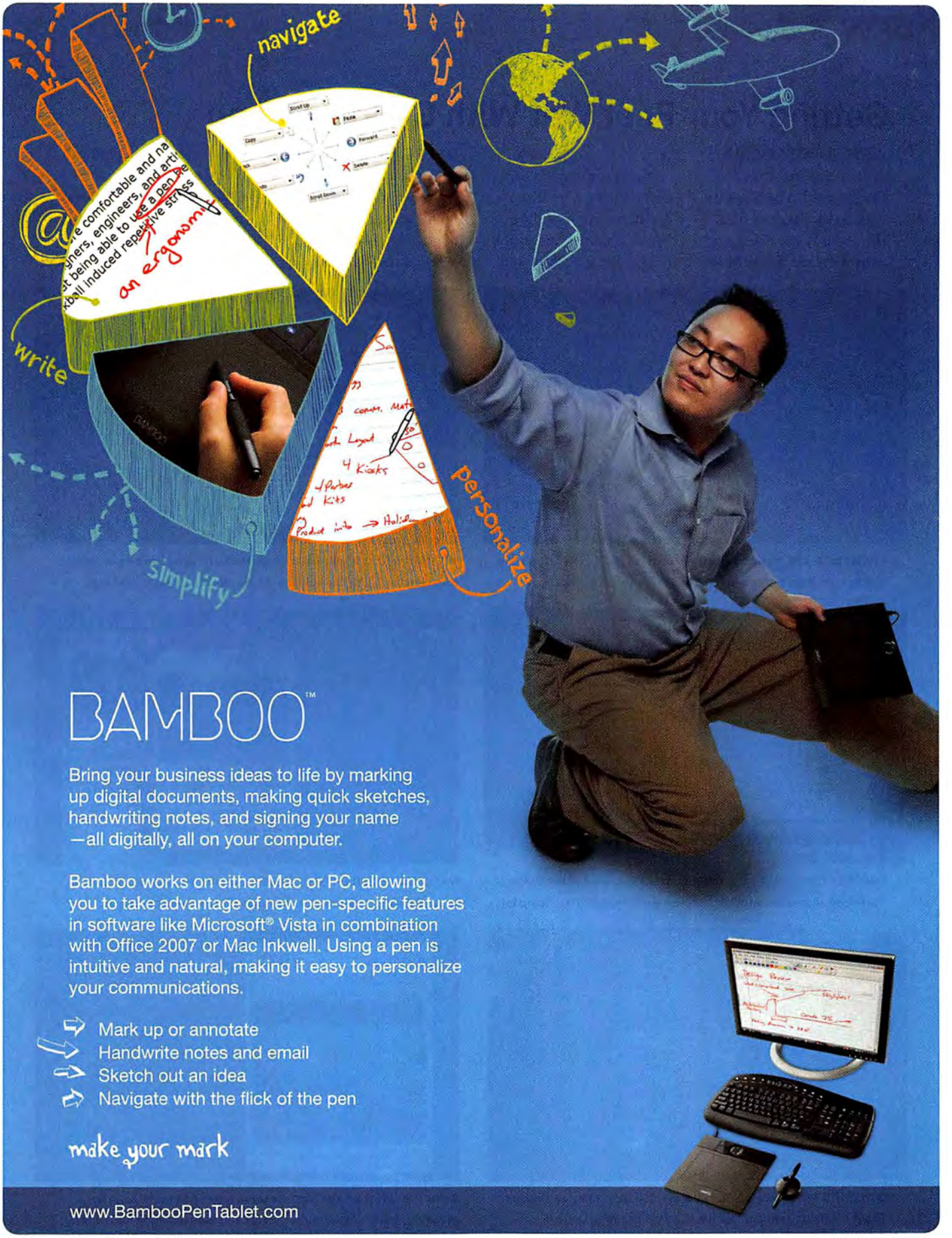
3. Eject the SD Card from the reader and then reinsert it into the Wii. Power on the console and start the Homebrew Channel.

4. You should see the two applications that you just copied onto the SD Card. Run the DVDX installer. When that starts up, select *Normal Installation* and wait for it to finish.

5. Go back to the Homebrew Channel, insert a DVD movie of your choosing into the Wii, and start the MPlayer program. To play the movie, select *DVD-Video* from the MPlayer menu, and then *Play DVD* (or *Play Title #1*). After a few moments the movie will load.

I should mention that the MPlayer software is currently pretty buggy; DVD menu functions are hit-and-miss, and not every movie I tried would play. Installing unofficial, third-party software always entails a certain amount of risk—but hey, that's part of the fun.

—Mike Keller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Bamboo works on either Mac or PC, allowing you to take advantage of new pen-specific features in software like Microsoft® Vista in combination with Office 2007 or Mac Inkwell. Using a pen is intuitive and natural, making it easy to personalize your communications.
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Sketch out an idea
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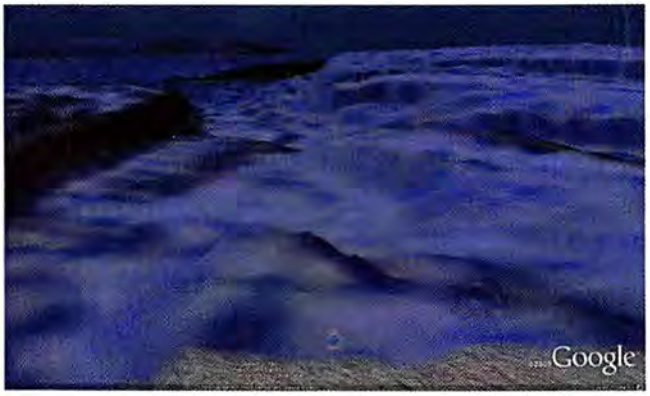
Getting Your Feet Wet With Google Ocean

WITH GOOGLE OCEAN, a major component of the Google Earth 5 beta update, you can dive as deep into the ocean as you could soar high above the Rocky Mountains with Google Earth.

Thanks to Google's partnership with more than 20 organizations, including NASA, National Geographic, NOAA, the U.S. Navy, and the BBC (to name just a few), you can "fly" beneath the ocean to the *Titanic* or follow sea turtles as they migrate across the sea.

To get started, simply download the Google Earth 5 beta at find.pcworld.com/62398 and put a check mark next to the 'Oceans' layer in the Google Earth software.

—Tom Spring



DIVING INTO THE waters just off the coast of Maui, Hawaii, you can explore the ridges of this submerged volcanic landscape.

YOU CAN STUDY underwater shipwrecks, but you can't zoom into them. Instead, you have to explore via pictures, videos, and text.

GOOGLE OCEAN ISN'T all serious science. This view of the island of Teahupoo shows the spectacular waves on which surfers hang ten.

NATIONAL GEOGRAPHIC PROVIDES a wealth of material, including beautiful videos of humpback whales off the Hawaiian coast.

CONTENT FROM THE BBC includes great photography and videos. These ice fields are near Igloolik Island in northern Canada.

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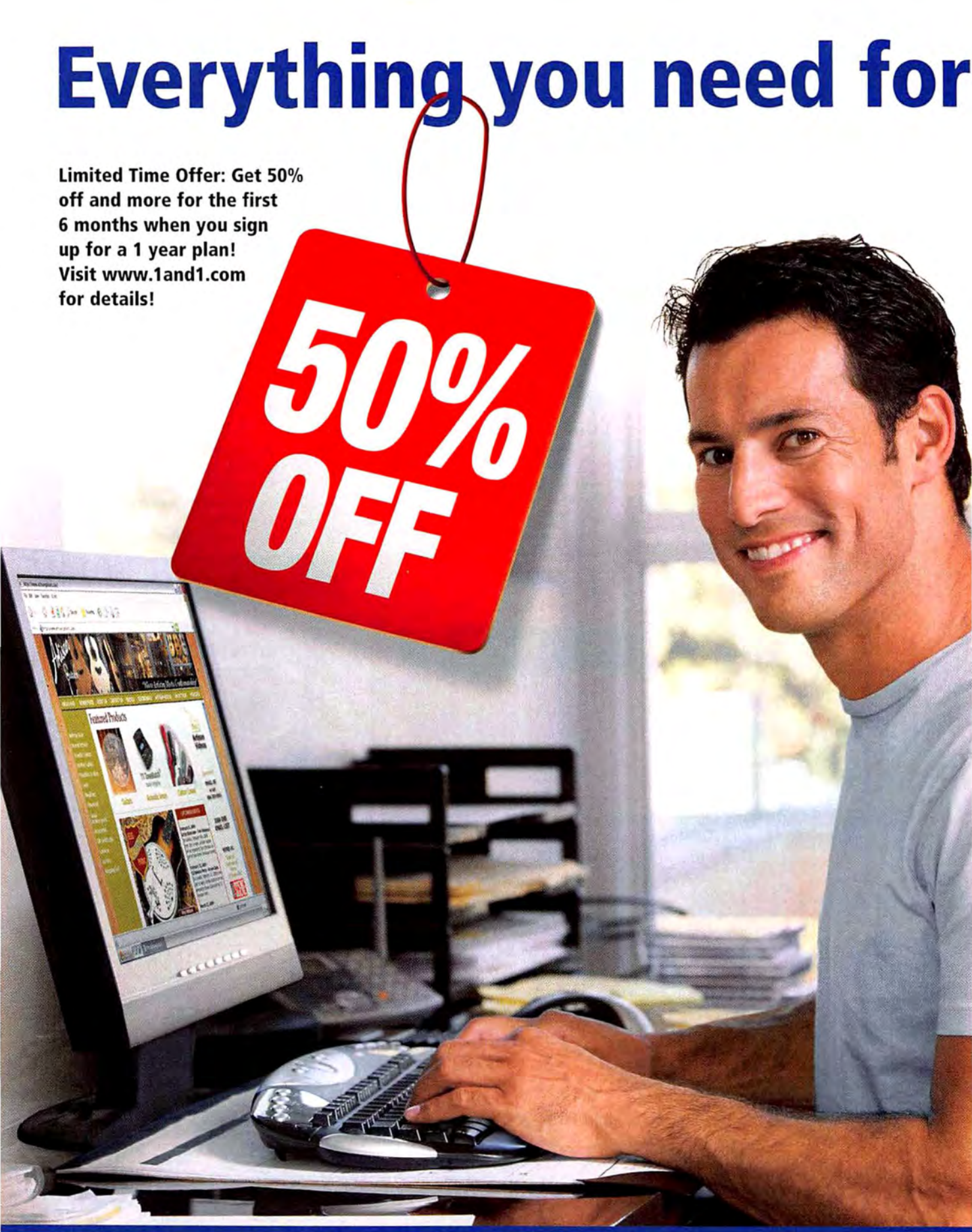

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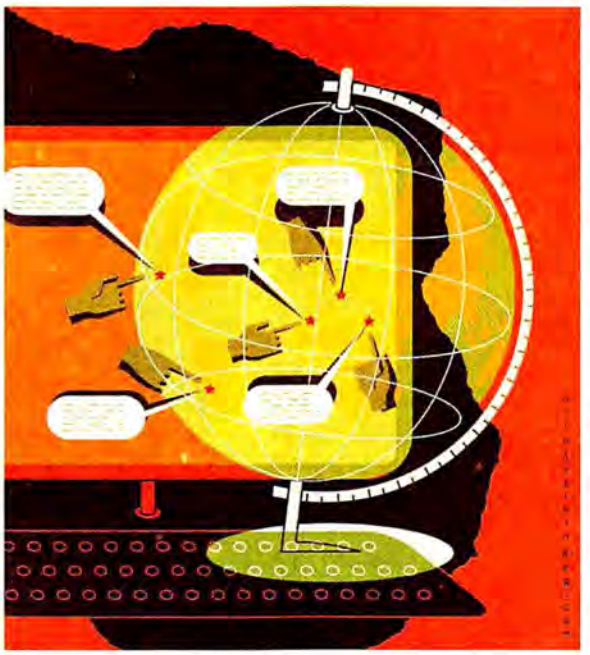
Travel Sites Venture Beyond the Bottom Line

BY JANET FULLWOOD

MOST WEB-SAVVY TRAVELERS know how to find cheap airfares, hotel rooms, and rental cars on comparison sites such as Kayak.com and Farecast.com, or on the big booking sites (Expedia, Orbitz, Travelocity, and the like). But last year, dozens of Web 2.0 travel sites jumped in to fill newly emerging niches in travel planning. Here's a selection of sites (many still in beta testing) that might help with your plans.

New travel sites help you decide where to go and what to do—and keep you organized, too.



Where to Go

These six sites can help an undecided trip planner discover a perfect travel match.

Based on your answers to a simple questionnaire, Best Trip Choices (besttripchoices.com) identifies which of six "travel personalities" you most closely match and suggests destinations and activities suited to your preferences. (You handle the booking.) Similarly, TravelMuse (travelmuse.com), Tripbase (tripbase.com), and Triporati (triporati.com) offer destinations based on interests you identify on supplied lists or tags. TravelMuse and Tripbase factor in your budget, and TravelMuse asks you how much time you're willing to spend en route. All three provide reviews, maps, links to booking sites, and more.

If you're considering a cruise or an organized tour, stop by Travelbeen.com, which debuted in seven countries last year with the goal of incorporating every travel Web site on the planet into its "social search engine." One of the service's more unusual features is its ability to search for travel suppliers by specialized criteria, including accreditations. The accrediting groups, however, aren't explained. For example, you can call up a list of cruise lines that belong to the International Association of Antarctica Tour Operators, but not an explanation of how those lines differ from lines that aren't members.

If you're looking for a hotel deal, try DealBase (dealbase.com), which presents key criteria for each offer—price, savings off full room rates, and terms of booking (including the dates of your stay and the deadline for booking)—in just three lines of type. You can filter deals by category or interest (golf, beach, four-star, and so on), bookmark your favorites, and view them as a list.

What to Do

Once you have settled on a destination, these two sites can help you plan your visit.

Visually compelling PlanetEye (planeteye.com) creates color-coded, geo-tagged Microsoft Virtual Earth maps that you can use to identify, say, restaurants and attractions within walking distance of a particular hotel. In addition, you can create virtual folders (called "travel packs") to file photo-illustrated restaurant reviews and travel tips aggregated from many sources.

At Trazzler (trazzler.com), identify the destination or interests you want to research (if you provide only the latter, Trazzler will help you choose a destination); then flip through a "trip stack" (think baseball cards)—photo-illustrated hotel, dining, and activity suggestions with links to Web sites that provide more detail. Compile a wish list, and the site aggregates data from your searches into a preference pie chart. This content comes from both professional writers and user reviews. »

ILLUSTRATION: OTTO STEININGER

PCWORLD.COM

Last-minute travel used to cost a lot, but the Web has changed that. Go to find.pcworld.com/62416 to read tips and strategies for saving money on a trip that you have to plan on relatively short notice.

The Human Touch

No matter how sophisticated its algorithms are, a machine just can't make some travel decisions. In the case of multiple-destination trips or flights to remote locations, for instance, online booking isn't always a snap—and it may not even be possible. Compete 4 Your Seat (compete4yourseat.com) calls upon a network of travel agents to bid on your tough-to-schedule flight plans.

Similarly, Zicasso (zicasso.com) promises "handcrafted" itineraries for trips with multiple destinations. You describe your travel needs, and in two or three days you receive trip plans—including pricing—from up to three prescreened agents. You can refine a plan as needed; you can then choose the one you like best and pay the agent directly.

Tripology (tripology.com) likewise caters to travelers with specialized interests—from nature vacations to language schools to spiritual journeys. Enter your criteria, and the site matches you with three specialists; you decide whom to contact, and you then negotiate fees and services with that specialist.

Help for Getting Organized

Finally, these two Web sites act as personal assistants to help you organize your travel plans and information.

After registering with TripIt (tripit.com), you simply forward flight, hotel, and other e-mail confirmations to the site, and it will organize them into a master itinerary that you can customize with additional maps, weather information, photos, and walking or driving directions. TripIt's Itinerator will even check your flight status, select your seat, and send a personalized travel guide to your online calendar or your iPhone.

Nile Guide (nileguide.com), another one-stop travel organizer, uses Google Maps technology and content from local experts to generate personalized travel recommendations; then it integrates your selections into your calendar. Nile Guide can create customized, downloadable guidebooks, too. An iPhone version is due later this year.

SKEPTICAL SHOPPER

YARDENA ARAR

Did Belkin Really Need Fake User Reviews?

An employee got caught offering to pay for positive reviews—but that doesn't mean that the firm's products are bad.

THE STORY BROKE on an obscure blog in the middle of January and quickly spread all over the Web: A Belkin employee had been caught posting ads offering payment to people who would write positive user reviews of the company's products, or mark negative reviews by others as "unhelpful."

In what appeared to be a tacit confirmation of the story, Belkin president Mark Reynoso posted a public apology that repudiated the employee's action, described them as an "isolated incident," and said the company was working to identify and eliminate any bogus reviews that may have resulted.

PC World has discussed fake user reviews in the past (see "Online User Reviews: Can They Be Trusted?" at find.pcworld.com/62453). But did Belkin really need to pay for positive reviews? Are its products so unworthy that without fake endorsements, few people would go out and buy them? As someone who has written and edited *PC World* articles about and reviews of Belkin products over the years, I knew the answer right away: No.

A Ford, Not a Rolls

This isn't to say that Belkin is the Rolls-Royce of tech companies. (I'm not sure such a company even exists these days.) Historically, it's been a purveyor of fairly inexpensive accessories for notebooks, iPhones, and iPods, as well as other electronics. In more-recent years, Belkin has become familiar to many consumers for its lines of what's euphemistically called "value" (read "cheap") home networking gear. So in terms of reputation, we're talking more Ford Focus than luxury limo.

But while Belkin rarely stars in roundup reviews that pit its products against similar ones from competing vendors, it seldom tanks. Last year, for example, we rated the company's low-end (two-antenna) draft-802.11n router (Belkin N Wireless Router F5D8233-4 V3) as "good," and described its design, usability, features, and customer service as "stellar." The product's PCW rating of 73 reflected its entry-level specifications in a roundup that included more-expensive routers loaded with advanced features; it managed to trounce the only other entry-level unit, a D-Link model that scored 61 (see "New 802.11n Routers: The Best Wi-Fi Yet," find.pcworld.com/62454).

Looking back even further, Belkin was the first company to market products carrying the MIMO antenna technology that underlies the current generation of Wi-Fi gear. I tested that first pre-N router (which used proprietary technology from Airgo Networks, since absorbed by Qualcomm) and came away highly impressed.

Finally, in our most recent reliability and vendor service surveys for Wi-Fi routers, Belkin performed very well, finishing just slightly behind top-ranked Apple.

I'm not defending the Belkin employee's actions, of course, and I naturally can't help wondering whether he was acting under directions from higher-ups. But this does not look like a company that should be desperate for positive word of mouth. So I would take the complaints about Belkin products (routers, for the most part) that surfaced in blogs and forums after the fake-user-review scandal broke with a grain of salt. A few rotten apples in the barrel shouldn't negate things the company has obviously gotten right.

ILLUSTRATION: HARRY CAMPBELL

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ON YOUR SIDE GINNY MIES

I RECENTLY PURCHASED Paint Shop Pro X2 Ultimate from Corel and tried to use the Lynda.com video tutorials that are included with the software, but was unable to find the images used in the tutorials. A Corel representative said that it would provide them only if I paid another $15—which I consider ridiculous. Corel should either put the images on the software CD or tell customers where to find them.

Joyce Turner, Shoemakersville, Pennsylvania

OYS responds: A Corel contact told us that the customer support representative who spoke to Turner misinformed her. Corel does not provide the images used in the Lynda.com videos, even though the videos state that users can find them in a folder on their computer. Lynda.com's Web site does not sell the images independently of a subscription for its tutorials. The $15 fee that Turner mentions is what Corel charges for an online training session with one of its own representatives and has nothing to do with the Lynda.com videos.

Regrettably, we've all run into customer service representatives who don't know what they're talking about. If you feel that you're not receiving accurate information, ask to speak to a supervisor. Save documentation of your interactions (e-mail or chat logs) so you can show the manager exactly what the representative said and why you don't think you're getting a fair deal. With luck, the company will go out of its way to assist you.

Though Corel couldn't help our reader, Lynda.com could: When we called, it agreed to send her a CD with the image files and says that it will do the same for others who obtain tutorials via third parties but are missing exercise files. Simply call the company's toll-free number (888/335-9632) and explain the situation.

Missing in Action

Harrison Roday of Richmond, Virginia, contacted us when he was unable to reach customer service at HandHeldItems.com about a botched iPod case purchase. After placing his order, Roday received an e-mail message saying that his credit card could not be authorized—but when he checked the account online, he saw that the site had charged him for the case. E-mail to a customer service address on the site went unanswered; and when he called the company's customer service phone line, a recorded message stated that the line's inbox was full, after which he was immediately disconnected. We had the same experience. Roday never received his case.

The Better Business Bureau's Web site indicates that HandHeldItems.com is owned by IGG Factory. When we tried to browse IGG Factory's Web site, Google notified us that it is a reported attack site, meaning that it will try to install programs that steal private information. Somewhat surprisingly, the Better Business Bureau rates IGG Factory as satisfactory (C+), but in recent reviews of IGG Factory on Trustlink.org (find.pcworld.com/62389), several customers report that they have not received products they've ordered.

OYS recommends researching companies online as we did to see whether other customers have had similar experiences. If a pattern of company nonresponsiveness emerges, call your credit card company to contest the charge. Roday filed a complaint with the BBB and at press time was still awaiting a response.

Google Power Meter Analyzes Energy Use

GOOGLE IS TRYING to alter electrical energy consumption by developing a Web service designed to let users track their electricity usage in great detail.

Google's PowerMeter software would tell you, for instance, that running a clothes dryer at 7 a.m. every day is one of your greatest energy costs. "In a world where everyone had a detailed understanding of their home energy use, we could find all sorts of ways to save energy and lower electricity bills," wrote Google engineer Ed Lu on the Google Blog. "If half of America's households cut their energy demand by 10 percent, it would be the equivalent of taking eight million cars off the road."

Noting that "We can't build this product all by ourselves," Kirsten Olsen Cahill, a program manager at Google.org, the company's corporate philanthropy arm, explained to *The New York Times*, "We depend on a whole ecosystem of utilities, device makers, and policies that would allow consumers to have detailed access to their home energy use and make smarter energy decisions."

For instance, the meter might signal to the dishwasher that it's cheaper to run in the morning rather than at night. Or it might tell the customer that he or she could save money by running the appliance at a different time.

Several utility companies, such as California's PG&E and the District of Columbia's Pepco, have already deployed smart meters to provide data on usage. Some 40 million smart meters are in use, according to Lu's blog.

PG&E spokesperson Paul Moreno says the utility realizes that smart meters have limitations and is building its own software to enable customers to break down usage by appliance.

Google, meanwhile, may announce PowerMeter within the next few months.

—Sindya Bhanoo

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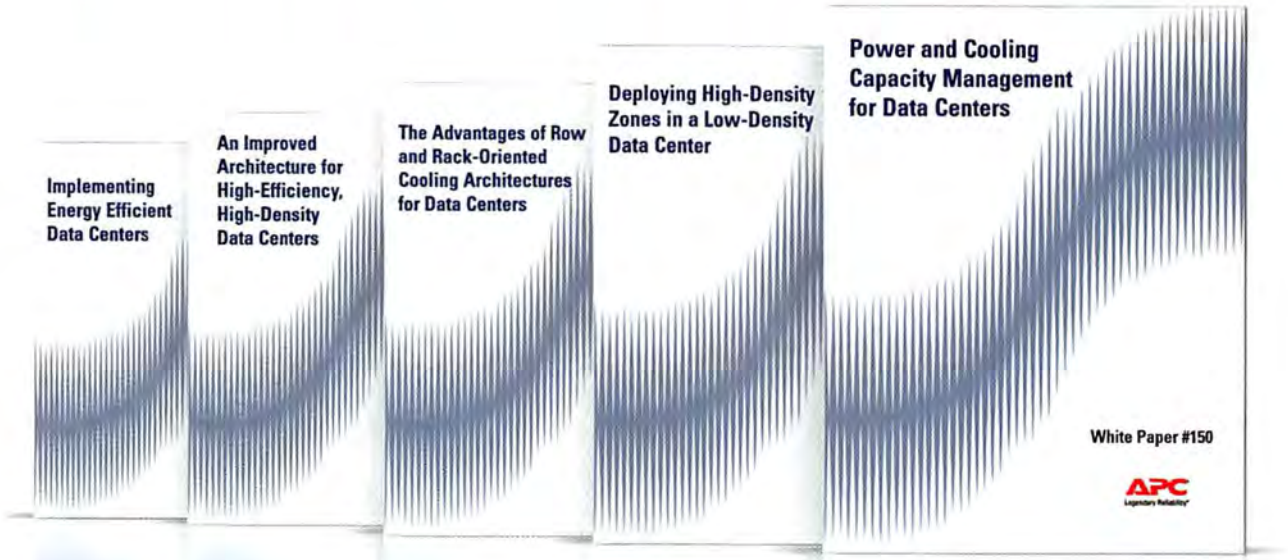

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Manage Telecommuters Easily and Securely

BY ALEXANDRA KRASNE

IF YOU COULD roll out of bed, commute just 40 feet, work in your robe and fuzzy slippers, and save thousands of dollars on travel expenses, would you do it? And, as a business owner or manager, would you offer the same benefit to your employees?

According to a survey commissioned by the Computing Technology Industry Association, 67 percent of respondents said their organization has seen greater productivity as a result of allowing employees to telecommute, either full- or part-time. The main reason for the increase in output: less commute time.

No doubt telecommuting benefits employees and employers alike, but with the distractions of home beckoning—children to drop off, a kitchen to clean, laundry to wash—can a telecommuter be as productive as employees in the office? More important, can technology keep your data secure, your teams connected, and your staff accountable? It can, if you plan well.

> Implementing a secure and comprehensive telecommuting plan at your business may yield a happier, more productive workforce.

ILLUSTRATION GREG CLARKE

Plan First

Whether you allow employees to work from home one day a week or all five, the key to implementing telecommuting successfully lies in developing a plan, says Steve Simmons, vice president of software development at VIPdesk. VIPdesk's outsourced, home-based customer service representatives provide technical support to clients. But with an entirely work-at-home customer-care group, the company needed to set up a foolproof telecommuting plan.

Understanding the software and tools that your employees use, how often they use them, and any security risks that letting company data go off-site entails will inform your plan. After a review, you may decide that accounting or human resources information should stay in-office only, while sales data could be viewable outside your headquarters, for example. Assess such things prior to permitting employees to work off-site, to avoid glitches and data leaks.

"Don't do it by the seat of your pants," Simmons advises. "Don't let some sales guy sell you some product that will solve all your problems. Vendors will say device X is compatible with that VPN, but that isn't always the case. You don't always get a straight story."

Know the Technology

The first technology layer of a secure telecommuting plan is the VPN (virtual private network) that provides encryption between the employee working on their home connection and your office's network. VIPdesk uses two-factor authentication for added security. (One-factor authentication requires only a user name and password.)

Another important piece to consider is a NAC (network access control) device. A NAC will query each PC—before granting it network access—to check whether certain software, such as an antivirus tool, is installed. When users log in, the NAC can even ensure that they have a firewall and current patches.

Consider installing an app on company PCs that can disable external USB devices, like thumb drives, when a user is logged in to your network via VPN. »

PCWORLD.COM

Outsourcing Microsoft Exchange to a hosting service can be beneficial (see page 36); but even then, Outlook can still annoy. Learn how to eliminate the worst Outlook irritations at find.pcworld.com/62430.

This arrangement prevents a remote employee from downloading sensitive data. (VIPdesk uses Secure It Easy.)

Keep a Watchful Eye

While you don't need to watch an employee's every mouse click, you should set ground rules. Brian Diamond, founder of the Telecommuting360 Web site and forum, advises managers to be transparent. He notes that most telecommuting packages have auditing. Citrix XenDesktop, for example, allows a manager to see a log of an employee's chats, e-mail, and IP-telephony calls.

State laws vary, however, and some require employers to inform employees that they may be monitored. Draft a monitoring policy, says Diamond, and have each employee sign it. Send reminders monthly. If employees know they may be watched, it can be good motivation not to slack off. "If you don't watch what [remote employees] are doing, you see a drop-off in work productivity over time," he warns.

One simple approach is to require remote employees to use instant messaging so that you can see their online status and contact them. Watch out for programs that automatically create IMs and send replies based on user-set rules. If you suspect an employee is using such a tool, send a specific message and see what kind of answer you receive.

Manage Meetings and Projects

For remote teams, Web conferencing can work well. Gmail and Skype offer free, secure options, and many IM apps now support conferencing. But while the grainy video of most Webcams leaves much to be desired, high-resolution video—available in a few of the latest conferencing products—is the next best thing to an in-person meeting.

Finally, project-management software such as Basecamp or Microsoft Project makes tracking tasks simple. Project-management software not only lets you see tasks, deadlines, statuses, and expected completion dates but also allows your group to share documents online.

NET WORK RICHARD MOROCHOVE

Exchange Hosting Eliminates Headaches

Outsource your Exchange management to a hosted service, and you can avoid installation and maintenance hassles.

MICROSOFT Exchange can help you manage the e-mail and collaboration services that employees use—but Exchange isn't the easiest app to install and run, particularly for a small business without an IT department.

While I believe Exchange 2007 is a little easier to set up than Exchange 2003, the new version is available only as a 64-bit app, and you may need to upgrade server hardware to run it.

Fortunately you don't need to install Exchange on your own server to gain its benefits. You can sidestep all the hassles of hiring an IT professional, buying and installing the software, ensuring 64-bit hardware compatibility, and tackling maintenance issues if you outsource Exchange provisioning to an online hosting service.

Hosting Options

Though Exchange isn't nearly as ubiquitous as POP e-mail, a growing number of hosts have added Exchange to their menu. Basic Exchange services range from $10 to $15 per month, per employee. Extras, such as additional mailbox storage and message archiving, will bump up the tab.

Selecting a service also involves other considerations. For example, antispam service provided at the Exchange server is more efficient than at the Outlook client level, since users don't download the junk. Want to help mobile employees keep in touch? Look at hosting that also offers e-mail integration with smart phones. Need collaboration functions? Pick a service that also hosts Microsoft SharePoint.

Few Exchange hosts can match the experience and offerings of Intermedia (intermedia.net); it has hosted Exchange since 2000 and offers a variety of supplemental services (some for an extra cost), including antispam features, mobile message integration, and SharePoint.

Intermedia uses HostPilot, a proprietary control panel. I like the way HostPilot helps you configure Exchange through step-by-step directions. Online help, including FAQ pages and getting-started videos, along with e-mail and telephone support, is readily available. Completing the online configuration for ten users will probably take a couple of hours for an administrator to perform, although that depends on the options you select.

An Intermedia Small Business Exchange plan for ten users (including 40GB total mailbox storage) is $125 per month. Antivirus, antispam, and SharePoint (50MB storage) are included in the monthly fee. Each user gets a free download of Outlook 2007. Additional mailboxes with 1GB storage cost $12 per month.

Though I like Intermedia's Exchange hosting, you have many providers to choose from. If you're satisfied with your Web host, see if it also offers Exchange hosting; at the very least, sticking with your Web host will simplify domain setup.

Is Hosting Right for You?

For a small business without an IT pro, the all-in cost of outsourcing Exchange can save thousands. Moreover, hosting providers can easily upscale your Exchange server as your business grows (or downsize it if necessary) without interrupting service. A business with more than 100 users and more-complex requirements, on the other hand, may find that providing Exchange services through internal resources makes more sense.

ILLUSTRATION: HARRY CAMPBELL

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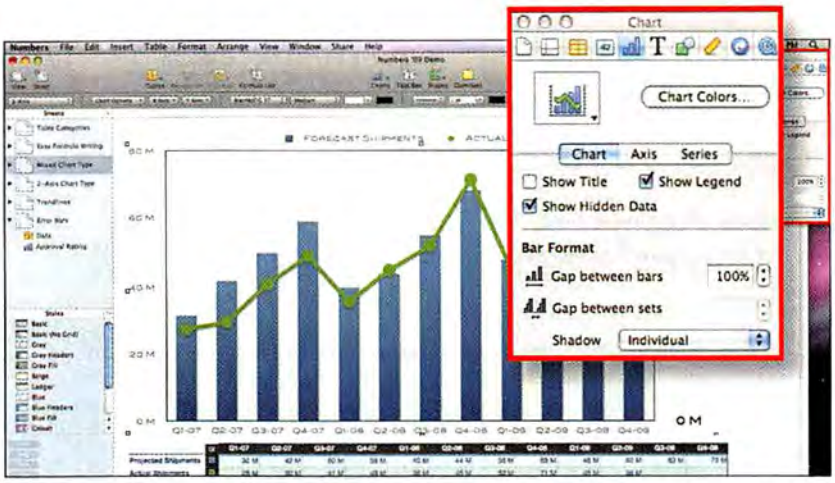
iWork '09 Can Take Care of Business



CREATING AND CUSTOMIZING charts in Numbers doesn't take an advanced degree. Just pop open the Inspector tool to select the type of chart, and then tweak its look to your liking.

FOR ANYONE WHO uses a Mac for work, an update to the iWork suite is welcome. Does iWork have what it takes to do serious business?

iWork '09 consists of the Pages word processor, the Numbers spreadsheet application, the iWeb site builder, and the Keynote presentation software. New in '09 is iWork.com, which lets you share files and collaborate with colleagues, whether they use Macs or not.

If you're seeking a replacement for Microsoft Office, iWork is not it. Although it can read files made in Word, Excel, and PowerPoint, you can't have it automatically save original files in those apps' formats. And the features in iWork's apps are relatively limited.

On the other hand, if you need inexpensive, versatile tools, iWork '09 is a solid choice that can create cool newsletters, intuitive and beautiful charts, and stunning presentations.

Among the most substantial updates in Pages '09 is vastly improved linking to Numbers spreadsheets. This makes mail merges easier and lets you add charts powered by Numbers data. And a new mode can fill your screen with just the document you're editing.

In Numbers '09, powerful sorting features now help you create rich spreadsheets that act more like user-friendly

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84
VERY GOOD

iWork '09 | Apple

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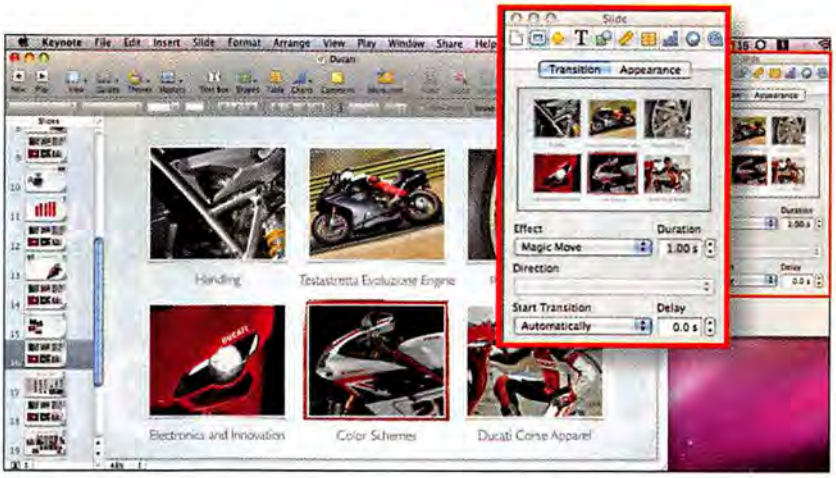

IWORK'S KEYNOTE '09 presentation-creation software packs enough cool transitions and comprehensive media-management features to keep any audience interested.

databases. Set a table category for a column, and you can sort and reorder your spreadsheet based on it. Drag an entry from one category to the next, and the accompanying data updates. Picking a formula is easy, too, with helpful descriptions and a natural-language search function. Most impressive is the updated chart creator, which offers gorgeous new shading and textures, yet gives you minute control over them.

The standout is Keynote, which beats PowerPoint in simplicity and usability. It's packed with tools to import, arrange, and manage music, video, and pictures, as well as to make impressive transitions. If you have an iPhone or iPod Touch, a 99-cent download will turn your device into a Keynote remote control. With its slick, intuitive interface and almost foolproof presentation creation, Keynote by itself justifies the $79 price tag for the iWork '09 suite.

If everyone in your company is using Microsoft Office, stay with the crowd. But if you're a small-business owner who needs to bang out a newsletter and track inventory in a spreadsheet, or a professional who makes a lot of presentations, iWork is worth a closer look.

—Robert Strohmeyer

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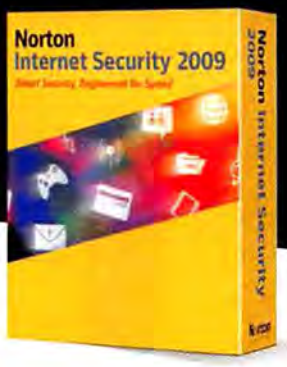

September 9, 2008
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"Fastest security suite anywhere" based on performance testing conducted by PassMark Software (Antivirus, Internet Security and Total Security Products Performance Benchmark (2009) Report, October 2008), on systems without security software previously installed and running Windows Vista®

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Security Alert

Fake Infection Warnings Can Be Real Trouble

BY ERIK LARKIN

MICHAEL VANA WAS skeptical when he saw the pop-up from "Antivirus 2009" on his screen. The former Northwest Airlines avionics technician, who lives in Schaumburg, Illinois, guessed that the dire warning of a system infection was fake, but when he clicked the X to close the window, it expanded to fill his screen. To get rid of it, he had to shut down his PC.

Sound familiar? Dirty tricks like these, designed to get you to install and buy fake antivirus products, are more common than ever. But while you might recognize such warnings as bogus, you might not know that the fake warning could be a red alert about an underlying bot malware infection. Knowing the difference is key.

"It's not something you even blink at anymore," says Christopher Boyd, senior director of malware research for communications security company FaceTime Communications, of requests for help in dealing with phony warning pop-ups.

The increased incidence of such pop-ups is due to more crooks going after easy money from shady affiliate programs, which pay a huge cut of the profits—up to 90 percent—for every person who mistakenly hands over money for a fake program, regardless of what induced them to pay. Often, the inducement comes from a malicious Web site that employs JavaScript tricks to unleash a horde of pop-ups, or even resize the victim's browser window, to create something that looks like a real antivirus scan.

You might reach such a site by using a bad search link, like the one Boyd clicked for a free online Batman game. He got redirected to a site that took over his browser to display a fake antivirus scan, which then found (fictitious) critical infections that he could supposedly fix by buying the rogue antivirus app.

If a site merely hijacks your browser, you don't have to worry too much: The pop-ups or fake scanner windows don't cause lasting damage, Boyd says. You might be prevented from closing the window, as Vana was, but you can usually bring up the Windows Task Manager with **<Ctrl>-<Alt>-<Del>** and close your browser that way. Sometimes just pressing **<Alt>-<F4>** will shut it down.

"To do this, [the fake site] uses real code, and doesn't generally exploit a hole," Boyd says. As long as you don't panic and install the pushed program, no real harm occurs.

As crooks aggressively push fake antivirus software, you need to know which ersatz warnings may point toward a hidden infection.

ILLUSTRATION: ZOHAR LAZAR

Bot Infections and Fake Antivirus

Unfortunately, the other way you might encounter a fake antivirus program is far worse.

Joe Stewart, a director of malware research with SecureWorks, a security services company for businesses, tracks bot malware for a living. Criminals use bot-infected PCs, sometimes gathered into huge networks (called botnets) of a hundred thousand or more systems, to send spam worldwide. But they also use bots to download rogue antivirus apps and other malware onto a victim's PC.

"It's a proven way of monetizing a botnet," says Stewart. "Just about anybody with an already-deployed botnet is potentially looking at this as a way to make extra money."

According to Stewart, crooks make that money either by »

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How secure is your Firefox browser? Discover the unsettling facts at find.pcworld.com/62382. Also, check out find.pcworld.com/62381 to see what new security features Windows 7 will bring to future PCs.

getting someone to download a supposed trial version of the rogue antivirus tool—co-opting a legitimate software sales technique—or by installing that software behind-the-scenes with a bot.

Once installed, the rogue typically uses highly aggravating techniques, such as changing the Windows desktop background to warn of a supposed infection and displaying constant other warnings, to push you to buy the full version of the software.

You might know not to download a rogue antivirus utility in response to a spurious pop-up. But when ordered to download it by a malicious controller, a hidden bot will never give you the chance to apply your good sense.

If you follow basic security precautions, such as keeping your bona-fide antivirus software up-to-date and being careful with e-mail attachments and downloads (find.pcworld.com/62380), you can significantly reduce the odds of getting infected with a bot or other malware. But if you do see pop-ups or other fake warnings from a rogue antivirus app on your machine, try to determine whether it's from a Web site or from actual software installed by a bot (or by someone else who uses the PC).

Possibilities Are Endless

The fake software scam comes in many variations, and crooks' tactics differ, so there is no sure indicator that one is present. But watch out for warnings that persist after you reboot your PC, especially if they appear before you open your browser. Seeing an unfamiliar warning icon in your system tray is another bad sign, particularly if you can't right-click it and make it go away. And if your desktop background has changed, you're definitely infected with a rogue antivirus program, says Boyd.

As to the source of this garbage, here's a clue. One variety that Stewart examined, then called "Antivirus XP 2008," would first check the PC's system configuration to see whether it was located in a country with many ethnic Russians. If so, the installer immediately quit.

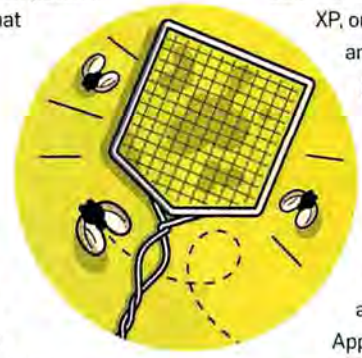
BUGS & FIXES ERIK LARKIN

Virulent Worm Exploits Missing Patches

The Conficker worm shows why it's so important to keep PCs up-to-date.

THINK MASSIVE worm outbreaks are obsolete? Then say hello to the Conficker worm, aka Downadup. In January it slithered onto millions of computers unprotected by a critical patch that Microsoft had issued back in October.

The patch addressed a hole in the Windows Server service, which most desktop and server versions of Windows use. Without it, a PC is vulnerable to attack by infected PCs across a network. A firewall can block external attacks of this sort, but business network firewalls generally offer little protection against threats from within the network. And businesses can be slow to patch their computers.



First double-check that you have the October patch noted above (available for Windows 2000, XP, Vista, Server 2003, and Server 2008) on both your home and work PCs, by running Windows Update. And be aware that a thumb drive or laptop that you bring home from work can spread Conficker as well (see find.pcworld.com/62399).

You also need to close a similar, newly discovered hole that exists in the Microsoft Server Message Block (SMB) protocol for file and printer sharing, which is critical for Windows 2000, XP, and Server 2003, and moderately important for Vista and Server 2008. Like the hole that the Conficker worm exploits, the SMB flaw lets an attacker launch a remote assault on a vulnerable computer and take complete control if successful. Again, a firewall can lower the risk, but be sure to get the patch via Windows Update or from Microsoft's site (find.pcworld.com/62400).

BUGGED?

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

New QuickTime Fixes

Meanwhile, Apple has released QuickTime 7.6 to correct seven serious flaws involving hacked movie files (including .avi and .mpeg types) and streaming video sites whose URLs open with rtsp://. Playing a tainted file or streaming video could relinquish control of your system to an attacker. You'll need the update if you run QuickTime on Mac OS X, Windows XP, or Windows Vista; nab it and more info from find.pcworld.com/62401.

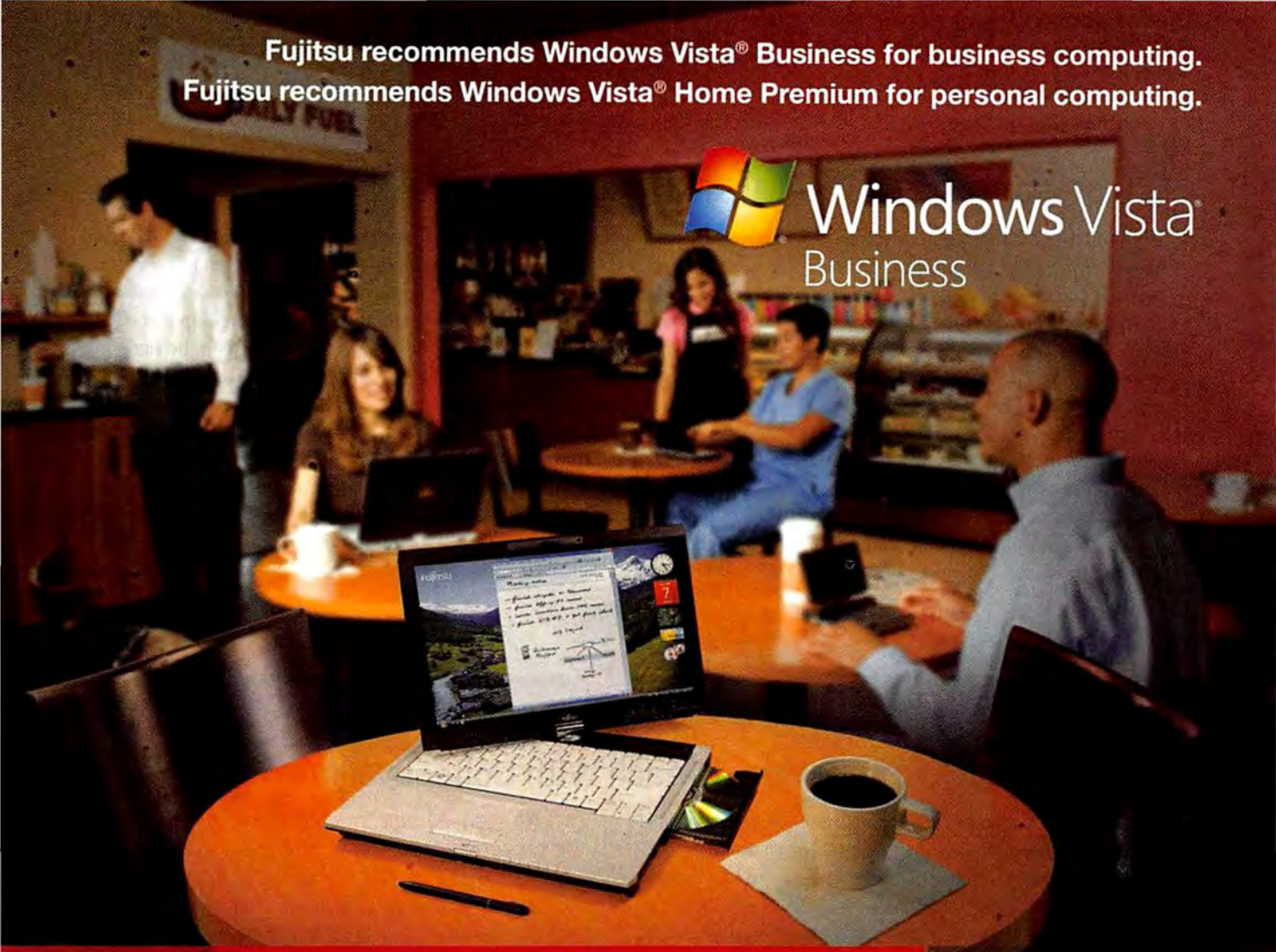
If you've installed the optional QuickTime MPEG-2 Playback Component under Windows XP or Vista, you'll need another high-priority Apple fix. Head to find.pcworld.com/62402 to determine whether you have the QuickTime extra and, if so, which version it is. If it's prior to version 7.60.92.0, get the free update from find.pcworld.com/62403, to protect against malicious movie files.

Firefox 2 Antiphishing Is Gone

Finally, if you're a Firefox 2 holdout, be aware that the old browser's built-in antiphishing protection is now kaput. Firefox 2 version 2.0.0.19 or later will show it as disabled, and even though it may still appear to be enabled if you're using an older version, Google has cut off the data feed that told it which sites to block. Your best bet—by far—is to upgrade to Firefox 3, which supports active antiphishing and delivers nifty features such as the so-called Awesome Bar. Grab the latest version of Firefox from www.getfirefox.com.

ILLUSTRATION: HARRY CAMPBELL

Fujitsu recommends Windows Vista® Business for business computing.
Fujitsu recommends Windows Vista® Home Premium for personal computing.



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Cybercrooks Go Phishing on Social Networks

ACCORDING TO A MessageLabs Intelligence report, which focuses on security issues and threats, a popular tactic in 2008 among cybercriminals involved using fictitious accounts on social networking sites to post malicious links, which usually led to phishing sites.

Scammers would then exploit the phished personal information—such as user names and passwords—to access legitimate accounts in order to post comments, on the pages of the victims' friends, that contain spam or links to phishing scams. The friends would be far more likely to trust the links, since they seemed to be from a known source.

Another report from security vendor Symantec, owner of MessageLabs, suggests that the trend is not dying down.

The report, which analyzed Web threats for January 2009, noted that social networking sites continue to be very popular with cybercriminals.

According to the report, January saw the emergence of spam messages that mimicked notification e-mail from two major social networking sites. The spam messages invited users to join a virtual group on the social networking site, and linked to a bogus group that the spammers had created on the site.

The group then linked to a free blogging site before redirecting users to the destination URL. Users who clicked that URL were asked to fill out a form collecting personal information, which spammers could sell to marketing companies or use in other malicious ways.

—Melissa Chua

PRIVACY WATCH ERIK LARKIN

Public Greets Massive Data Breach With Collective Yawn

Crooks steal a huge trove of credit card data, but are we too burned out on such news to care?

ON JANUARY 20, as most of the nation focused on the presidential inauguration, Heartland Payment Systems, a credit card payment processing company, acknowledged that data thieves had installed spyware on its network to steal credit card details throughout 2008. The company says it handles about 100 million payments a month, and doesn't yet know how much information was stolen: the theft might be the biggest data breach ever.

But does anyone really care? Or rather, should anyone care?

Data-breach laws in 44 states require companies to report the loss or theft of personal data, and such laws undoubtedly prompted the revelation by Heartland at 2008breach.com. But hundreds of other breaches pass unnoticed by most consumers. Though intended to spur companies to follow strong security practices to safeguard sensitive data, the laws don't seem to be achieving their purpose.

Case in point: The Identity Theft Resource Center (find.pcworld.com/62379), a San Diego–based organization that provides free assistance to identity theft victims, found that the number of reported data breaches mushroomed from 446 in 2007 to 656 in 2008—an increase of 47 percent.

The ITRC's Jay Foley believes that most of the increase reflects not an actual increase in breaches, but rather an increase in the reporting of them. While that can be seen as a success for the data-breach laws, it can also be seen as a failure: It's good if the laws are getting companies to be more on the ball about letting us know when a breach has occurred, but their underlying goal should be to put pressure on companies to prevent losses in the first place.

Existing laws assume that the public and the media will decry each breach and cause the affected company to take a hit to its reputation. But with 656 breaches occurring in a single year, it's a safe bet that most of them won't get much notice.

Foley believes that with the addition of some necessary updates, such as requiring that all breaches are reported to state attorneys general and that notifications to affected consumers contain all the pertinent theft and remediation details, the existing data-breach laws will work.

I'm not so sure. I recognize that companies are extremely anxious to avoid the public relations hit they are likely to suffer following a reported breach—a point that Chris Hoofnagle, director of the Berkeley Center for Law & Technology's information privacy programs, emphasizes.

But Hoofnagle also points out that if we are truly deadened to hearing about more and more incidents, the fallout won't affect companies nearly as much. If that's the case, we likely need regulatory teeth to push companies to handle our data properly.

No matter how careful we are in protecting our identities, the vast majority of our sensitive data is held by companies over which we have no control. Those companies need the right incentive—or threat—to care about our data as much as we do. ●

ILLUSTRATION: HARRY CAMPBELL

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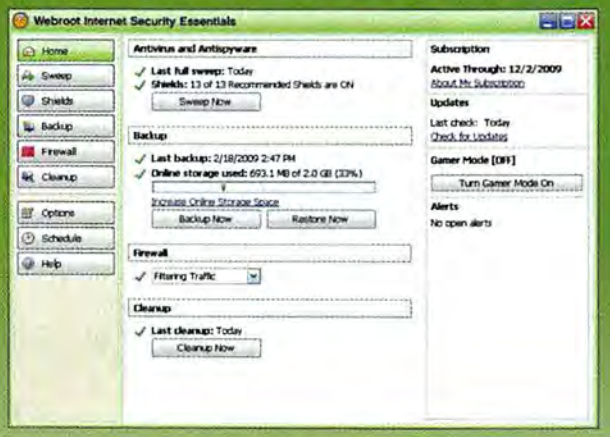
HOW TO PROTECT YOUR DIGITAL LIFE



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In today's highly connected world, we depend more and more on our home PCs and the Internet. From booking a vacation to storing photos from our trips, they simplify everyday tasks. However, this increasing dependence leaves us vulnerable to malware threats, which increased 44.5 percent in 2008.

And while the majority of Internet users employ malware protection, many don't realize that it's not enough. Our home PCs are likely to store digital photos, music, financial information, and thousands of other irreplaceable files. Hardware failure, software corruption, human error, theft, and natural disaster put these files at risk. Every day in 2007, at least 126,000 people in the U.S. and U.K. lost personal files due to one of these factors.

These trends point to the need for security that protects our PCs as well as the files we store on them. Yet most of us don't want to use software that is difficult to use and slows performance.

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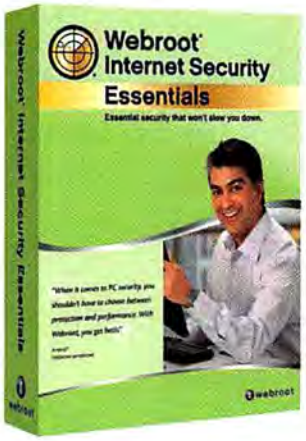

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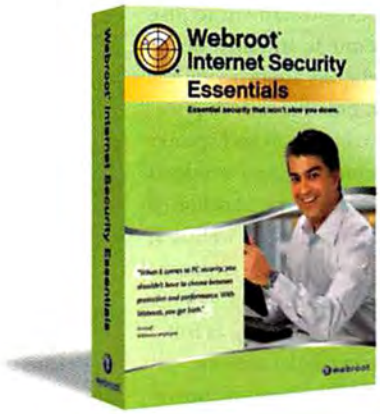

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Reviews & Rankings

The Wide World of All-Purpose Laptops

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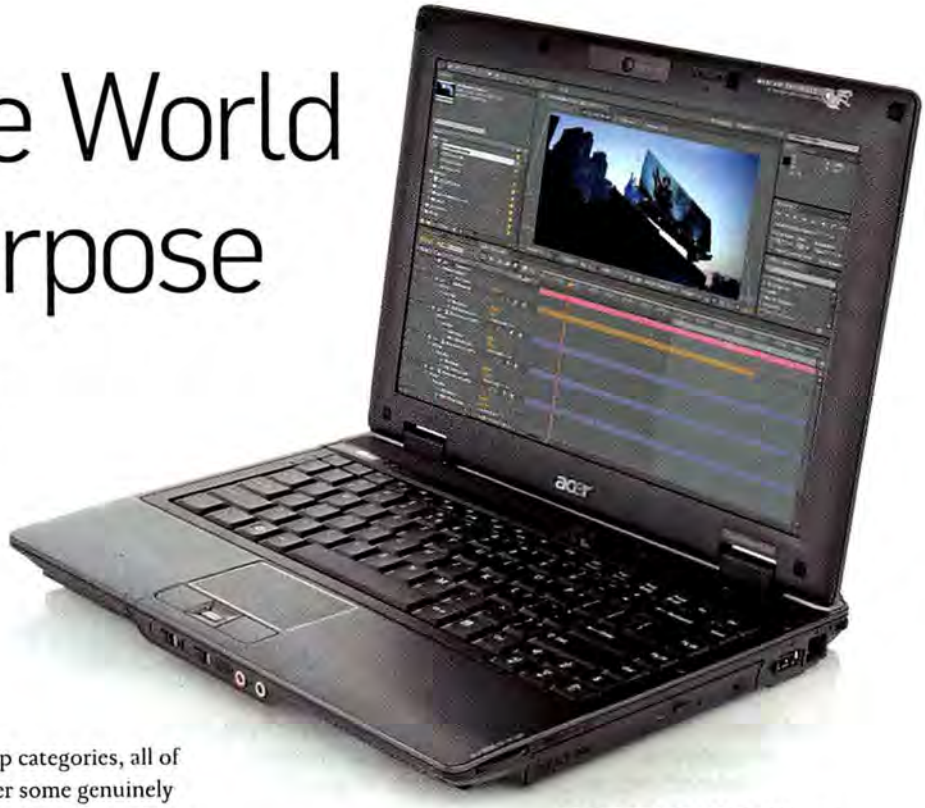


ACER'S TRAVELMATE 6293, our Best Buy, easily tops rivals in battery life and performs well.

PHOTOGRAPHS: ROBERT CARDIN

PCW Test Center

ALL-PURPOSE LAPTOPS come in a hodgepodge of sizes and shapes, a testament to just how much, and how quickly, notebooks are evolving right now. For this roundup we looked at small and spunky systems that are a smidgen too heavy to be considered ultraportables, as well as at laptops that have expansive, 16-inch screens but fall just short of qualifying as full desktop replacements.

While some of the portables in our Top 10 straddle a fine line between two different laptop categories, all of them offer some genuinely good value for your mobility bucks. That's largely because the prices for laptops are plummeting—and they likely haven't hit bottom yet.

You can see our complete chart of the top-ranked all-purpose laptops on page 50, but here's a look at four new, recently tested models.

Acer TravelMate 6293

Before this tiny Acer portable came along, Lenovo had a lock on the all-purpose laptops category, offering notebooks adept at combining price and performance. Lenovo's ThinkPad SL400, which formerly occupied our number-one spot, ranks third this month, and it remains a solid deal, selling for a little over $1100. But shoppers can find plenty of reasons to choose Acer's TravelMate 6293 instead.

For one thing, it has battery life in spades. Equipped with a powerful 7200-mAh battery, the 6293 lasted 3 minutes shy of 8 hours in our tests. That's far better than the results we've seen from any other all-purpose machine on the market.

Performancewise, it rocks. The 2.26-GHz Core 2 Duo P8400–equipped unit with 2GB of RAM turned in an impressive WorldBench 6 score of 90. It lacks a dedicated video card (one unfor-

INSIDE

56 SONY VAIO P

58 SAMSUNG OMNIA

66 POLAROID POGO Instant Digital Camera

68 POLYWELL MINIBOX 780G-940

tunate characteristic of small laptops), so its entertainment capabilities are limited by the shared video memory. Despite that, the 12.1-inch, 1280-by-800-pixel, wide-aspect display is fine for any other task you might need to squeeze into its small quarters. And the 250GB hard drive provides ample storage headroom.

You might not call the 6293 handsome, but this entirely black laptop is fairly well packaged for an all-purpose machine, although it's missing a FireWire port (which would have been handy for speedy digital downloads) and sports the older PC Card slot instead of a newer ExpressCard slot.

In the plus column, it does provide conveniences such as dedicated Bluetooth and 802.11n Wi-Fi switches, as well as a built-in Webcam. IT departments will love the fact that storage and memory are fully user-upgradable, too—and even the accounting folks should be able to tolerate the TravelMate 6293's palatable $999 price.

Samsung X460

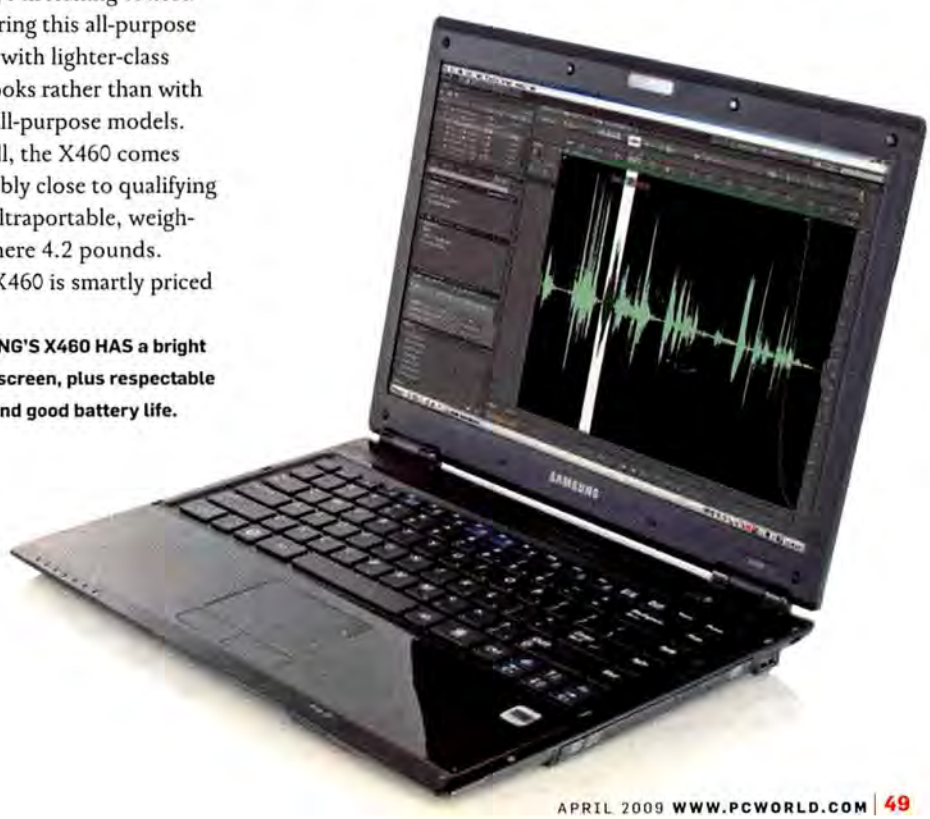
In the X460, Samsung has managed to craft a 14.1-inch, thin-and-light, all-purpose laptop that is perfectly road-ready and can go toe-to-toe with some of the best ultraportables out there.

That's right: Because of its design, I'm leaning toward comparing this all-purpose laptop with lighter-class notebooks rather than with other all-purpose models. After all, the X460 comes incredibly close to qualifying as an ultraportable, weighing a mere 4.2 pounds.

The X460 is smartly priced considering what it offers; our review configuration goes for $1699. That money buys you solid performance in the form of a 2.26-GHz Intel Core 2 Duo P8400 CPU, 3GB of RAM, and a discrete graphics processor. Although the GPU is no powerhouse—it's a 256MB nVidia GeForce 9200M GS—it certainly helps the X460 give you better graphics performance than many thin-and-light machines do.

The 14.1-inch-diagonal backlit LED screen is amazingly bright, and the X460's processing power and battery life shine, as well; in our PC World Test Center WorldBench 6 tests, it hit a very respectable score of 93, while its battery ran for a nice, long, 4.5-hour stretch.

The svelte case houses an optical drive and squeezes in a lot of ports, including »



SAMSUNG'S X460 HAS a bright backlit screen, plus respectable speed and good battery life.

MORE ONLINE

For more laptop news and in-depth reviews, visit PCW's Laptops Product Center at find.pcworld.com/62004.

VGA, HDMI, ethernet, three USB connections, a five-in-one flash memory card reader, an ExpressCard slot, and headphone/microphone jacks. Throw in 802.11n Wi-Fi, a 1.3-megapixel Webcam, and a fingerprint reader, and you wind up with a pretty robust package.

Gateway MC7803u

On the outside, the attractive Gateway MC7803u sure doesn't look like it costs only a thousand bucks—but while using it, we quickly realized that Gateway had cut some corners. Since $999 clearly won't net you the fastest laptop on the block, it's no surprise that the MC7803u (with an Intel 2-GHz Core 2 Duo T5800 CPU, 4GB of RAM, and a 512MB AMD Radeon HD 3650 graphics processor) barely eked out a score of 78 in WorldBench 6. That kind of performance is average, but hardly capable of delivering a decent game experience on a portable.

The MC7803u managed to survive 3 hours, 48 minutes on a single charge of the included battery—also about average for the all-purpose category. That result is a bit more impressive when you consider that the battery has to power the unit's 16-inch glass display, but the screen is a little washed out.

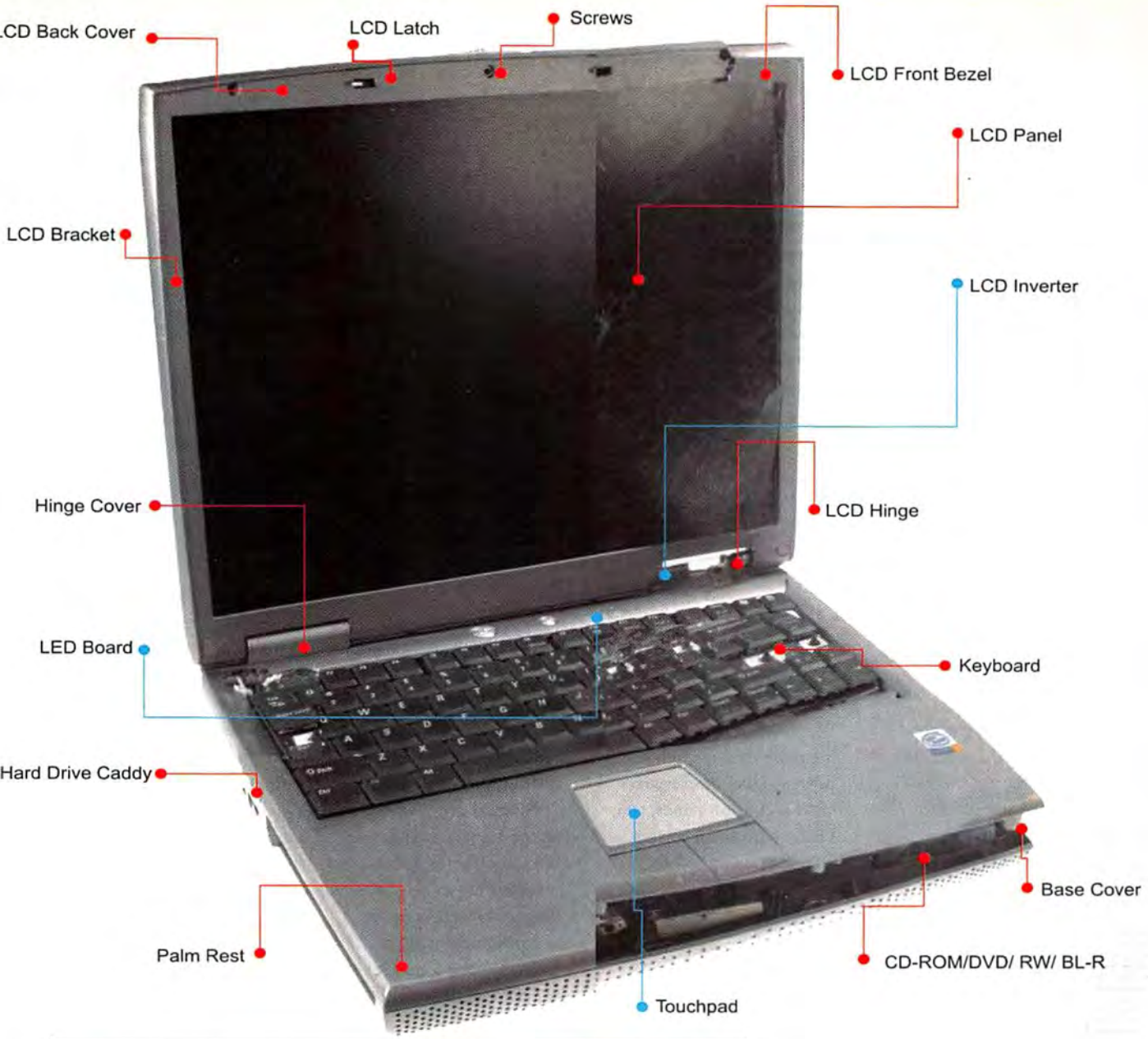
The keyboard feels good, and the system's overall layout is fairly sensible. Four USB ports occupy the sides, along with a five-in-one flash card reader and a PC Card/ExpressCard slot; a pair of headphone jacks and one microphone jack occupy the front, and a Webcam resides atop the display. You also get VGA and HDMI video outputs, modem and ethernet connections, and Bluetooth and 802.11n Wi-Fi.

Weighing 7.7 pounds, the MC7803u is a little hefty for toting everywhere, but the price is a significant factor in making this laptop a solid contender. Just remember »

PC WORLD TOP 10 ALL-PURPOSE LAPTOPS

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY Acer TravelMate 6293 $999 NEW find.pcworld.com/62384	85 VERY GOOD	• WorldBench 6 score: 90 Good • Overall design: Good • Tested battery life: 7:57	• 2.26-GHz Core 2 Duo P8400 • 12.1-inch wide screen • 4.8 pounds • DVD+R DL/DVD±RW
	BOTTOM LINE: Acer's TravelMate 6293 should please corporate bean counters with its long battery life.			
2	Micro Express JFL9226 $1199 find.pcworld.com/61313	83 VERY GOOD	• WorldBench 6 score: 103 Superior • Overall design: Good • Tested battery life: 4:25	• 2.53-GHz Core 2 Duo T9400 • 15.4-inch wide screen • 6.6 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: The JFL9226 cuts most of the right corners to be a budget-friendly road companion. It just needs a face-lift.			
3	Lenovo ThinkPad SL400 (2743-25U) $1133 find.pcworld.com/61937	83 VERY GOOD	• WorldBench 6 score: 84 Good • Overall design: Very Good • Tested battery life: 5:08	• 2.26-GHz Core 2 Duo P8400 • 14.1-inch wide screen • 6.1 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: This entry-level ThinkPad offers features (and software) once limited to higher-end models.			
4	Micro Express JFL9290 $1599 find.pcworld.com/61941	81 VERY GOOD	• WorldBench 6 score: 115 Superior • Overall design: Good • Tested battery life: 3:44	• 3.06-GHz Core 2 Extreme X9100 • 15.4-inch wide screen • 6.5 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: Though the JFL9290 suffers from a lackluster design, its blazing, record-setting speed grabs headlines.			
5	Toshiba Satellite U405-S2854 $949 find.pcworld.com/62385	81 VERY GOOD	• WorldBench 6 score: 80 Good • Overall design: Very Good • Tested battery life: 3:26	• 2-GHz Core 2 Duo T5750 • 13.3-inch wide screen • 4.6 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: Think of the U405 as a really inexpensive ultraportable or an incredibly svelte all-purpose machine. It's both.			
6	Samsung X460 $1699 NEW find.pcworld.com/62386	80 VERY GOOD	• WorldBench 6 score: 93 Very Good • Overall design: Very Good • Tested battery life: 4:33	• 2.26-GHz Core 2 Duo P8400 • 14.1-inch wide screen • 4.2 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: Samsung's X460 provides solid competition (even for ultraportables) with slick looks and a lot of features.			
7	Sony VAIO VGN-NR485 $800 find.pcworld.com/61939	80 VERY GOOD	• WorldBench 6 score: 75 Fair • Overall design: Good • Tested battery life: 3:56	• 2-GHz Core 2 Duo T5750 • 15.4-inch wide screen • 6.2 pounds • DVD±R DL/DVD±RW/-RAM
	BOTTOM LINE: You can find faster laptops than this Athlon-equipped bargain, but the overall package is a decent choice.			
8	Gateway MC7803u $999 NEW find.pcworld.com/62387	79 GOOD	• WorldBench 6 score: 78 Fair • Overall design: Good • Tested battery life: 3:48	• 2-GHz Core 2 Duo T5800 • 16-inch wide screen • 7.7 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: Gateway's laptop promises entertainment—but while the price is right, some of its performance isn't.			
9	Dell Studio XPS 16 $1804 NEW find.pcworld.com/62388	76 GOOD	• WorldBench 6 score: 92 Very Good • Overall design: Very Good • Tested battery life: 3:41	• 2.4-GHz Core 2 Duo P8600 • 16-inch wide screen • 7.0 pounds • BD-ROM
	BOTTOM LINE: Dell's Studio line shines with a laptop model that provides both sharp design and smart features.			
10	Fujitsu LifeBook T1010 $1399 find.pcworld.com/61940	76 GOOD	• WorldBench 6 score: 86 Good • Overall design: Good • Tested battery life: 3:46	• 2.26-GHz Core 2 Duo P8400 • 13.3-inch wide screen • 5.3 pounds • DVD±R DL/DVD±RW
	BOTTOM LINE: An all-around solid performer in basic day-to-day use, the T1010 won't turn heads, but it will get the job done.			

CHART NOTES: Prices and ratings are as of 1/15/09. Weight does not include AC adapter, power cord, docking station, or extra batteries.



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that, though it looks good on the surface, it makes some compromises that prevent it from being an entertainment notebook.

Dell Studio XPS 16

The Studio XPS 16 succeeds in outmuscling the slick but slightly flawed Gateway MC7803u, proving that you can emphasize style in a laptop without sacrificing functionality. Dell's classy portable starts at $1199, and our review configuration costs roughly $1804—significantly more than the price tag on Gateway's offering—but that premium shows in the Dell machine's higher build quality and performance.

Our review system had a 2.4-GHz Intel Core 2 Duo P8600 CPU, a 512MB ATI Mobility Radeon HD 3670 graphics processor, and 4GB of RAM, and it ran the 64-bit flavor of Windows Vista. That configuration notched a mark of 92 in our WorldBench 6 test suite, exhibiting more than enough power to handle everyday tasks and some games, too; I had no problem playing Fallout 3 and Left 4 Dead at the screen's native resolution of 1920 by 1080 pixels. For such results you can thank the capable mobile GPU and the 7200-rpm, 320GB hard drive, whose fast rotational speed enables better read/write performance during game play.

GATEWAY'S MC7803U COSTS just under a grand and boasts an appealing exterior, but the machine's performance and battery life proved merely average in tests.

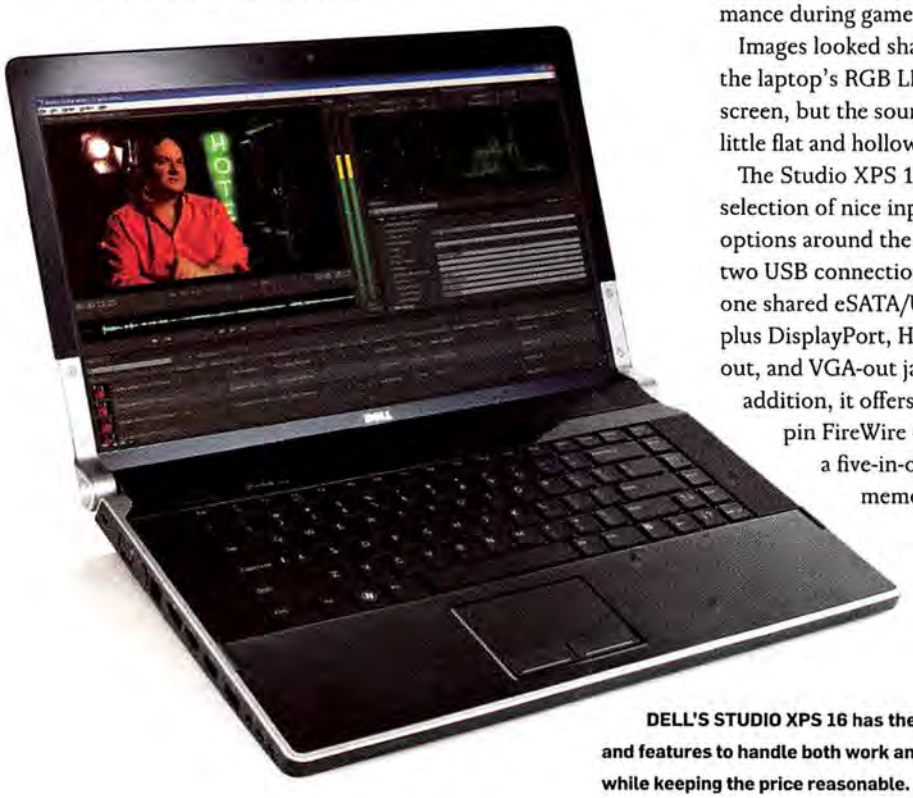
Images looked sharp on the laptop's RGB LED screen, but the sound is a little flat and hollow.

The Studio XPS 16 has a selection of nice input options around the sides: two USB connections and one shared eSATA/USB jack, plus DisplayPort, HDMI-out, and VGA-out jacks. In addition, it offers a four-pin FireWire 400 port, a five-in-one flash memory card reader, a 2-megapixel Webcam, an ExpressCard slot, and a slot-loading Blu-ray Disc drive. Our review machine came with both a six-cell battery and a nine-cell battery for the price; while running on the latter, it survived for 3 hours, 41 minutes, which is about average for an all-purpose laptop.

Not only is the Studio XPS 16 packed with features, but it also boasts a reasonably sharp-looking design. Like the Gateway MC7803u, this laptop sports edge-to-edge glass on the display; the difference here is that Dell locks down the screen by bolting the hinges firmly into both sides of the bezel. In the end, even from just a quick glance at the two notebooks side by side, you can see what the price difference buys you.

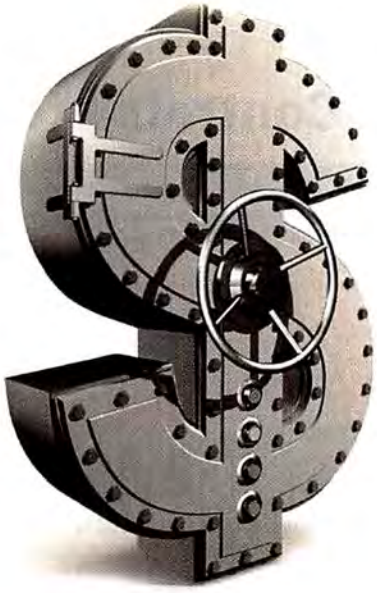
Dell's Studio XPS 16 is squarely aimed at people who want to get a little more for their mobile entertainment buck; it's a solidly constructed multimedia laptop that piles on features without breaking the bank.

—Darren Gladstone



DELL'S STUDIO XPS 16 has the power and features to handle both work and play, while keeping the price reasonable.

PHOTOGRAPHS: ROBERT CARDIN



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More Wi-Fi, Fancier Controls in New MFPs

PCW Test Center

AMONG MULTIFUNCTION printers, "more" is the mantra. The five midprice ($200 to $300) units on this month's chart all have Wi-Fi; some also have ethernet. Half include automatic duplexing, and others offer fancier control panels than past models.

Tired of confusing controls? The Canon Pixma MP980 (in eighth place) goes the iPod route, with a scroll wheel for navigation. Kodak's ESP 9 has a touch-sensitive panel.

Unfortunately, the ESP 9, along with Kodak's ESP 7 and the Dell P703w, didn't make the chart. They printed very slowly and produced subpar prints on plain paper.

HP'S PHOTOSMART C6380 is a well-designed home MFP.

HP's Photosmart C6380 debuts at number two, combining good speed, even better print quality, and a nice design. Epson's extremely speedy WorkForce 600 earned a sixth-place ranking.

—Melissa Riofrio

MORE ONLINE

For more information on the color inkjet MFPs reviewed here, including testing details, visit find.pcworld.com/61882.

PC WORLD TOP 10 COLOR INKJET MULTIFUNCTION PRINTERS

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY Canon Pixma MX700 $180 find.pcworld.com/59701	83 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: Work- and play-oriented features blend harmoniously in this unit, with just a few quality and design issues.			
2	HP Photosmart C6380 $200 NEW find.pcworld.com/61979	83 VERY GOOD	• Text quality: Very Good • Graphics quality: Very Good • Tested speed (ppm): 11.3 text/ 3.2 graphics	• 33 ppm text • 31 ppm graphics • 9600-by-2400-dpi maximum true color resolution
	BOTTOM LINE: Well designed, with solid speed and print quality, this home-focused model has what it takes.			
3	Canon Pixma MX7600 $400 find.pcworld.com/60874	82 VERY GOOD	• Text quality: Superior • Graphics quality: Superior • Tested speed (ppm): 9.8 text/ 3.7 graphics	• 28 ppm text • 23 ppm graphics • 4800-by-1200-dpi maximum true color resolution
	BOTTOM LINE: The fast, full-featured MX7600 will suit any small business or home office that can afford it.			
4	Canon Pixma MP620 $150 find.pcworld.com/61884	82 VERY GOOD	• Text quality: Superior • Graphics quality: Good • Tested speed (ppm): 7.6 text/ 2.2 graphics	• 26 ppm text • 17 ppm graphics • 9600-by-2400-dpi maximum true color resolution
	BOTTOM LINE: For home or school, the Pixma MP620 offers impressive features and connectivity for a low price.			
5	HP Photosmart C5280 $130 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: This versatile unit handles photo and CD/DVD printing as easily as everyday copies or scans.			
6	Epson WorkForce 600 $200 NEW find.pcworld.com/61880	80 VERY GOOD	• Text quality: Very Good • Graphics quality: Good • Tested speed (ppm): 18.2 text/ 5.0 graphics	• 27 ppm text • 19 ppm graphics • 5760-by-1440-dpi maximum true color resolution
	BOTTOM LINE: Small offices will like this model's speed, but they won't like buying special paper for decent output.			
7	Epson Artisan 800 $300 find.pcworld.com/61885	80 VERY GOOD	• Text quality: Fair • Graphics quality: Fair • Tested speed (ppm): 9.8 text/ 5.4 graphics	• 38 ppm text • 38 ppm graphics • 5760-by-1440-dpi maximum true color resolution
	BOTTOM LINE: You get plenty of features and capabilities in the Artisan 800, but it needs special paper for the best results.			
8	Canon Pixma MP980 $300 NEW find.pcworld.com/61883	79 GOOD	• Text quality: Very Good • Graphics quality: Very Good • Tested speed (ppm): 8.1 text/ 2.5 graphics	• 26 ppm text • 21 ppm graphics • 600-by-600-dpi maximum true color resolution
	BOTTOM LINE: Photos are this higher-end model's forte, and it sports some generous and innovative features.			
9	HP Photosmart C8180 All-in-One $400 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: A LightScribe drive offers soup-to-nuts digital photo processing, but office features are sparse.			
10	Lexmark X9575 Professional $250 find.pcworld.com/60873	78 GOOD	• Text quality: Very Good • Graphics quality: Very Good • Tested speed (ppm): 9.9 text/ 2.0 graphics	• 33 ppm text • 28 ppm graphics • 4800-by-2400-dpi maximum true color resolution
	BOTTOM LINE: Though the X9575 is well equipped for a small or home office, its ink costs restrict it to lower-volume use.			

CHART NOTES: Prices and ratings are as of 12/19/08. Speeds are in pages per minute (ppm).

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Not Quite a Netbook: Sony's VAIO P

SONY'S VAIO P is ultracompact and has a good feature set—but it's also pricey for a netbook.

PCW Test Center

DON'T CALL the VAIO P a netbook. After all, it starts at $900 with a 60GB hard drive and gets as high as $1499 with a 128GB solid-state drive (our review unit had a 64GB SSD; its configuration sells for $1199). In addition, this machine runs Windows Vista Home Basic instead of Windows XP or Linux, operating systems that are more common on netbooks. But it does have a 1.33-GHz Z520 Intel Atom processor, at the low end of second-generation netbook CPUs.

Sony claims that the VAIO P is a bite-size lifestyle laptop. But whose lifestyle? My guess: petite women with eagle-eye vision. Weighing 1.4 pounds and measuring 9.6 by 4.7 by 0.9 inches, it is about half the size of Acer's Aspire One, slips into a coat pocket, and even comes with a matching leather purse.

Though it borders on unusably tiny, the device is built around a QWERTY keyboard that is 88 percent the size of a standard desktop keyboard. The cut-out keys (like those on Apple MacBooks) are small—about 0.5 inch wide—but reasonably spaced. This keyboard is way more manageable than those on some of the first-gen Eee PCs from Asus, but I still found my hands awkwardly clawed while trying to type. You may have to hunt and peck your way through documents. The keyboard does provide a couple of handy, customizable shortcut buttons. And one thing the VAIO P gets right is the pointer controls: The eraserhead camps intelligently amidst the keys, and firm mouse buttons rest below the spacebar.

An Appealing Display

Sony laptops typically have sweet screens, and the P's backlit LED display doesn't disappoint. It's impressively crisp and bright and sports a resolution of 1600 by 768 pixels (a 16:7 aspect ratio). Sony reps say its 8-inch screen will let users view two full Web pages side by side—but don't risk your eyesight trying to read said pages.

Though the VAIO P is attractive, it isn't really built for serious business. Sure, it packs all sorts of goodies beyond the 2GB of RAM inside a slim, screwless case (say bye-bye to upgrades): 802.11n Wi-Fi, Bluetooth, and Qualcomm's Gobi chip set for wireless broadband; two USB ports and a headphone jack; a Webcam with a built-in mic; and slots for both an SDHC Card and a Memory Stick HG Duo card. Those specs beat the MacBook Air's. The P also has an intelligently designed VGA/LAN adapter connection, a dongle that attaches to the tiny power brick.

But should anyone really run Windows Vista on this thing? The P scored a measly 29 in our WorldBench 6 test suite, largely because of Vista Home Basic. As bad as that may sound, some other netbooks, such as Dell's Inspiron Mini 9, scored even lower in WorldBench when running Windows XP. This VAIO would probably score 30 to 40 on WorldBench if it ran XP instead.

Like a Netbook

The P can play video recorded at 320-by-240-pixel resolution without a hitch. With anything larger, such as 640 by 480 pixels, playback slows so much that you get something more like a slide show than a video.

The unit has a reasonable battery life: 3 hours, 22 minutes on the included four-cell battery. But the HP Mini 2140, which costs $529 and performs roughly on a par with the VAIO P, lasts nearly 7 hours with its battery.

The P's quick-launching (20-second startup) Linux shell can save you time and juice if you just need to do some Web browsing or video watching. The Smart-Wi networking software quickly gets you onto Wi-Fi or wireless broadband networks. And the VAIO Control Center provides quick access to the most frequently tweaked features. Also on board are Microsoft Works and mercifully little bloatware.

So, is this thing a netbook? It's roughly the size of one and it performs like one. And that's the problem in a nutshell: Considering the price, it needs to do more than be small. On the other hand, this ultracompact ultraportable sure looks great.

—Darren Gladstone

68
FAIR

VAIO P | Sony

Despite its goodies, this netbook is expensive and slow with a Vista OS.

List: $1199

find.pcworld.com/62428

PHOTOGRAPH: ROBERT CARDIN

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(8MB L3 Cache, 1066Mhz)

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Despite Hot Competition, BlackBerrys Rule

PCW Test Center

THE IPHONE 3G and the T-Mobile G1 may have created a stir, but Research In Motion's BlackBerry units dominate our *Top 10 Smart Phones* chart. The two newest BlackBerrys (the Bold and the Storm) land on the chart, but two older units (the Pearl 8120 and the Curve 8320) remain near the top of our rankings.

Between the latter two BlackBerrys are the Motorola Motozine ZN5 and the Samsung Omnia, both new. The ZN5 includes an outstanding camera, but its design and 3G support seem compromised. The Omnia has a gorgeous 3.2-inch touch screen and a sophisticated design, but its user interface is slow.

SAMSUNG'S OMNIA has a cool touch screen but a slow interface.

Relatively poor battery life pulled down the iPhone 3G and the Android-based G1.

—Ginny Mies

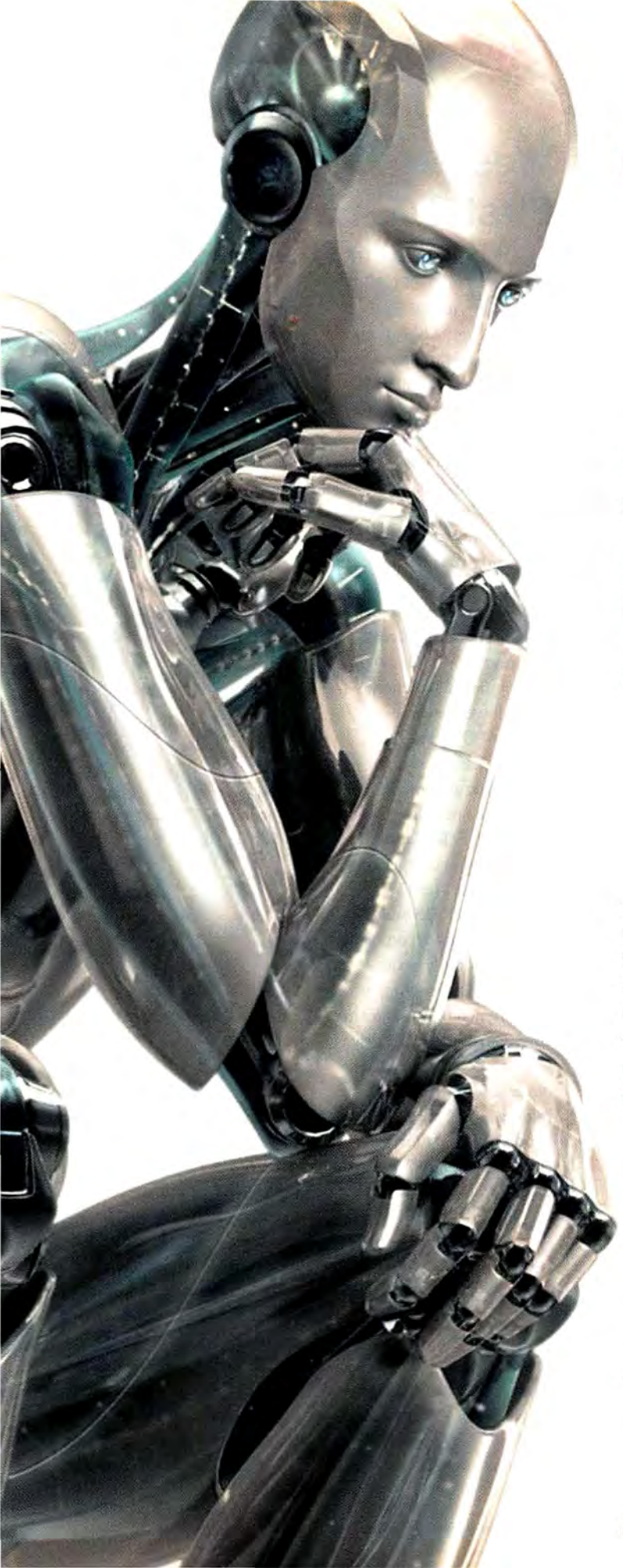
MORE ONLINE

For more information about the cell phones reviewed here, including testing details, go to find.pcworld.com/53058.

PC WORLD TOP 10 SMART PHONES

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY RIM BlackBerry Pearl 8120 (T-Mobile) $200 find.pcworld.com/60795	89 VERY GOOD	• Battery life: 10:00 • Battery life score: Superior • Overall design: Superior	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 3.2 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: T-Mobile's sleek 8120 version of the Pearl lets consumers use Wi-Fi to boost call quality where cell signals falter.			
2	Motorola Motozine ZN5 $200 NEW find.pcworld.com/62100	86 VERY GOOD	• Battery life: 10:00 • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 3.9 ounces • Camera resolution: 5.0 megapixels
	BOTTOM LINE: Motorola's inexpensive phone has a high-quality camera, but it compromises on speed and design.			
3	Samsung Omnia $200 NEW find.pcworld.com/62028	84 VERY GOOD	• Battery life: 10:00 • Battery life score: Superior • Overall design: Very Good	• Carrier: Verizon • Form factor: Candy bar • Weight: 4.3 ounces • Camera resolution: 5.0 megapixels
	BOTTOM LINE: This otherwise versatile and stylish phone from Samsung is hindered by a sluggish interface.			
4	RIM BlackBerry Curve 8320 $200 find.pcworld.com/58957	84 VERY GOOD	• Battery life: 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 smart phone even better.			
5	T-Mobile G1 $180 find.pcworld.com/61827	84 VERY GOOD	• Battery life: 5:51 • Battery life score: Fair • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 5.6 ounces • Camera resolution: 3.0 megapixels
	BOTTOM LINE: The G1 has great call quality, and it nicely melds hardware with Google's Android operating system.			
6	RIM BlackBerry Pearl 8100 $100 find.pcworld.com/55333	83 VERY GOOD	• Battery life: 8:34 • Battery life score: Very Good • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 3.1 ounces • Camera resolution: 1.3 megapixels
	BOTTOM LINE: This sleek model adds a serviceable camera and multimedia features to BlackBerry's terrific e-mail capabilities.			
7	Apple iPhone 3G $200 find.pcworld.com/62034	82 VERY GOOD	• Battery life: 5:38 • Battery life score: Fair • Overall design: Superior	• Carrier: AT&T • Form factor: Candy bar • Weight: 4.7 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: With a lower price, as well as included 3G radio and GPS, this smart phone stands in a class by itself.			
8	RIM BlackBerry Bold $400 NEW find.pcworld.com/61894	82 VERY GOOD	• Battery life: 7:56 • Battery life score: Very Good • Overall design: Very Good	• Carrier: AT&T • Form factor: Candy bar • Weight: 4.8 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: The Bold almost earns its name with a stunning design, but mediocre camera and call quality hold it back.			
9	T-Mobile Sidekick 2008 $150 find.pcworld.com/61735	81 VERY GOOD	• Battery life: 8:57 • Battery life score: Superior • Overall design: Very Good	• Carrier: T-Mobile • Form factor: Swivel • Weight: 4.5 ounces • Camera resolution: 2.0 megapixels
	BOTTOM LINE: This slimmer, sexier take on the Sidekick is so narrowly focused that it's meant only for kids.			
10	RIM BlackBerry Storm $200 NEW find.pcworld.com/62029	81 VERY GOOD	• Battery life: 7:39 • Battery life score: Very Good • Overall design: Very Good	• Carrier: Verizon • Form factor: Candy bar • Weight: 5.5 ounces • Camera resolution: 3.2 megapixels
	BOTTOM LINE: The Storm looks handsome, but its touch-screen interface is awkward and disappointing.			

CHART NOTES: Prices and ratings are as of 1/16/09. Prices assume a two-year service contract, but no rebates. Battery life is in hours:minutes.



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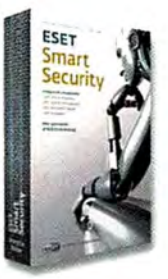

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Western Digital Debuts First 2TB Hard Drive

PCW Test Center

THE CAVIAR GREEN 2TB WD20EADS hard drive from Western Digital boosts the capacity game to a new level. The $299 disk can hold 2 terabytes—it's the first to do so, and a boon to anyone with a large data archive or media library. Previously, Seagate's Barracuda 7200.11 1.5TB drive led in capacity.

This internal unit provides an areal density of 400 gigabits per square inch on four 500GB platters. And WD bills it as environmentally friendly for its lower power use.

In our PC World Test Center trials, it came in fifth among all hard drives tested, one place better than the 1.5TB Seagate unit. It lagged our performance leaders (the WD RE3 Enterprise 500GB and the WD VelociRaptor) on some results—notably, write-intensive disk imaging in WorldBench 6. But on other core metrics, the 2TB drive was competitive. It finished our test for writing files and folders in 112 seconds and handled our test for writing large files in 92 seconds, placing behind the performance leaders by 12 seconds or less.

The drive comes with several WD technologies that, the company says, allow the model to achieve its balance of price and performance and optimize its internal workings. For example, StableTrac reduces vibration by securing the motor shaft at both ends, permitting accurate head tracking during read and write operations.

WESTERN DIGITAL IS the first to release a 2-terabyte hard drive.

The $299 price tag may seem high; but at 15 cents per gigabyte, it is fairly competitive with that of other drives. The cost of recovering a ginormous 2TB drive that is dead or damaged, however, could be huge.

That the drive isn't quite a top-of-the-heap performer should not deter people with large data libraries. Nor should it put off digital media enthusiasts. Those users will rightly crave this drive.

—Melissa J. Perenson

77
GOOD

Caviar Green 2TB WD20EADS
Western Digital
This first 2TB internal hard drive will please storage-hungry users.
List: $299
find.pcworld.com/62422

PHOTOGRAPH: ROBERT CARDIN

nVidia GTX 295 Graphics Board Ups the Ante

PC GRAPHICS hardware manufacturers nVidia and ATI have long been locked in a heated video-card war.

The latest salvo is a 480-core bombshell: the $500 nVidia GTX 295 graphics platform, for which nVidia has issued its reference board for manufacturers. Essentially the product consists of two GTX 290 cards sandwiched together. (We do not assign final Test Center scores to reference boards.)

GTX 295 | nVidia
Not rated (reference board)
Pricey, powerful graphics board is meant for hard-core gamers.
List: $500
find.pcworld.com/62424

The GTX 295 boasts a 576-MHz core clock, 1.79GB of memory, and a PCI-E 2.0 interface. Translation: It has a lot of horsepower. Technically it requires only one PCI Express slot, but its size effectively fills two slots. It also needs 680 watts from an eight-pin and six-pin supplementary power connector.

In our WorldBench 6 tests, the GTX 295 scored incrementally better than ATI's current high-end product, the Radeon HD 4870 X2.

NVIDIA'S GTX 295 graphics board is big, with plenty of horsepower.

One example: The GTX 295 ran Crysis at 42 frames per second on High settings with 4x antialiasing at 1920 by 1200 resolution—pretty impressive in that game. (A Diamond Multimedia ATI 4870 X2 card hit 32 fps.)

But when we ratcheted the resolution to 2560 by 1600, the GTX 295 produced just 15 fps on Crysis, while a GTX 280 reference board ran 2 fps faster and the ATI Radeon HD 4870 X2 ran at 29 fps—possibly due to early driver issues in the 295.

The GTX 295 may be for you if you're a hard-core gamer with money to burn and a high-end system.

—Tae Kim

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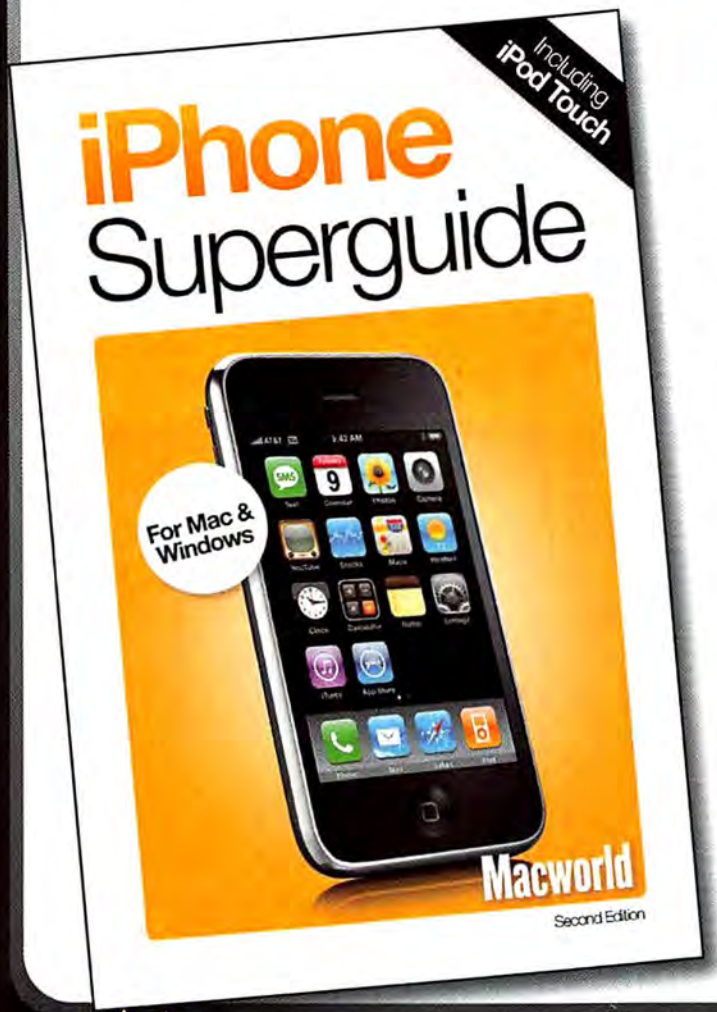

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Buying Guide: Select the Best LCD Monitor for You

WHICH LCD MONITOR is right for you? It depends on the programs you use, your desk space, how much room you need on screen, and your budget. Here are the most important features to evaluate when you go shopping.

Key Specifications

Native resolution: An LCD has a fixed resolution at which it looks best. The majority of 17- to 19-inch models use a native resolution of 1280 by 1024 pixels. Wide-screen 23- and 24-inch units typically use 1920 by 1200; 30-inch wide-screens, 2560 by 1600. A particular LCD is a good choice if you are comfortable using its native resolution for all applications.

Aspect ratio: Wide screens with a 16:10 aspect ratio have been dominant, but the trend is moving toward 16:9, as you'd find on an HDTV. A wide screen is good for handling spreadsheets, or programs with lots of toolbars or palettes, as well as for viewing documents side-by-side or watching DVDs.

The area of a wide-screen display is smaller than that of a regular-format display of the same size; for instance, a 21-inch wide screen shows about as many pixels as a regular 19-inch LCD does.

Viewing angle: This is how far a viewer can move from a position directly in front of the LCD before image quality deteriorates unacceptably. No standard exists for measuring it, so you can't compare the numbers (in degrees, up to 180) between vendors.

Most LCDs have a viewing angle of at least 160 degrees. The larger the monitor, the more critical a wide viewing angle is. That's because the far edge of the screen is at an even greater angle away from someone sitting to one side.

Contrast ratio: This term refers to the difference in light intensity between the brightest white and the darkest black an LCD can produce. Look for a contrast ratio of at least 400:1. At any lower ratio, colors may wash out at higher brightness settings and disappear at lower settings. The spec is useless for comparison purposes, however, as no industry standard exists and it can vary from one vendor to the next.

Brightness: Expressed as candelas per square meter (cd/m^2) or nits, this spec denotes the greatest amount of light that comes from a screen showing pure white. Most LCDs have a more-than-sufficient brightness level of at least $250 cd/m^2$.

Digital connectors: Digital trumps analog, but you have a choice of digital ports. DVI is common on graphics cards, motherboards, and monitors. You can find two types of DVI on typical LCDs: DVI-D is digital-only, while DVI-I can accept either an analog input or a digital one (you need a special connector to hook it to your PC's VGA analog port, however).

Some monitors use the relatively new DisplayPort connector. HDMI connectors, the same as on HDTVs, are becoming more common on 22-inch and larger LCDs. HDMI can transmit digital video and digital audio signals between devices.

Response time: A low response time (measured in milliseconds) signifies minimal artifacts in moving images. *Rise-and-fall* measures how long a pixel takes to turn from black to white and back to black. *Gray-to-gray* measures the time a pixel takes to change from one shade of gray to another. Rise-and-fall has been clearly defined for years, but the same cannot be said for gray-to-gray. Even so, most LCDs today have fast enough response rates for all but the most hard-core gamers.

Physical adjustments: Almost all monitors offer tilt adjustment; you may want one that allows height adjustment as well. Side-to-side swiveling makes showing your screen to others easy. And for viewing anything that's longer than it is tall, you might like screen pivoting (as long as you also have image-pivoting software).

ASUS'S WIDE-SCREEN VW266H LCD sports an HDMI connection.

Monitor Shopping Tips

Try before you buy: Only your eyes can judge image quality, resolution, and size.

Check screen real estate: Make sure you have enough space for what you need to accomplish. The current sweet spots are the 19-inch regular-format LCD and the 20- to 22-inch wide screen.

Consider using multiple smaller monitors instead of one big display. With the right video card, you can run two LCDs on the same PC.

Look for USB ports: USB lets you attach peripherals. Such ports are most convenient on the side of a monitor.

Consider speakers: Included speakers can save desk space. Their sound will rarely satisfy the discerning ear, but they are fine for daily use.

—Melissa J. Perenson

MORE ONLINE

To see LCD-monitor reviews, news, and pricing, visit our Monitors Product Center at find.pcworld.com/62432.

PHOTOGRAPH: ROBERT CARDIN

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Polaroid Camera's Design and Images Disappoint

THAT POLAROID WOULD integrate its PoGo instant printer (find.pcworld.com/62434) into a camera was inevitable. But in my tests of a shipping PoGo Instant Digital Camera, I found its design and images disappointing.

59
POOR

PoGo Instant Digital Camera
Polaroid
Built-in printer can't compensate for the camera's poor images.
List: $199
find.pcworld.com/62433

The boxy camera resembles the PoGo printer, only with an optical element on one side and the buttons and LCD on the other. It's heavy compared with other point-and-shoots, and it has poor ergonomics (no grip, no logic to button placement).

It offers 5 megapixels, way below today's 10-megapixel norm. And when viewed on a PC, its photos exhibited inadequate sharpness, color accuracy, and detail.

The built-in printer could not work miracles and fix images I'd taken; red items were a washed-out pink, and a brilliant blue sky became a muddied and mottled gray.

The camera's one saving grace is that it is supposed to recognize images taken by other cameras on an SD Card, and print them too. In my tests, the recognition was inconsistent, but a print of a stored 10-megapixel image showed more detail and far better color than prints of this camera's own images.

The built-in printer uses Polaroid's Zink technology: A thermal printhead activates the 100 billion dye crystals embedded in the proprietary, glossy photo paper. If you covet the instant prints that Zink enables, however, I'd recommend the earlier PoGo printer over this camera.

—Melissa J. Perenson

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Walkman NWZ-S738F Plays Great Audio

PCW Test Center

THE SONY Walkman NWZ-S738F, available in capacities of 8GB (for $180) and 4GB (for $150), is a high-quality MP3 player. Slim and stylish, it has a brushed-metal faceplate and back. Its 1.6-ounce, 3.6-by-1.75-by-0.31-inch frame slips easily into small pockets.

The player sounds phenomenal, especially through its noise-canceling earbuds and with its noise-canceling feature turned on. In PC World Test Center tests, it posted a signal-to-noise ratio of 82 decibels—a shade below the latest iPods and the Creative Zen X-Fi—as well as a barely registering harmonic distortion and noise level of 0.01 percent. The headphone port works with any mini-jack, but to get the noise-canceling feature, you must use the included earbud set.

The 2-inch-diagonal, 240-by-320 screen is vibrant and bright enough to see easily, but it's a bit too small to enjoy videos on. Navigating is intuitive. Four directional buttons surround the Play/Pause button, and Back and Option buttons (which double as Home and Power Off, respectively, when pressed for a few seconds) sit on either side. A volume rocker and lock switch occupy the right edge of the device, and the proprietary charging/syncing connector, noise-cancellation switch, and headphone jack reside on the bottom.

File support is somewhat limited: The unit plays MP3, WMA, .wav, and DRM-free AAC audio; handles MPEG-4 (H.264 codec) and M4V video; and shows JPEG stills.

If you like your music clean, delivered via creative features, and in a slick, durable chassis, the Walkman NWZ-S738F is a great option.

—Tim Moynihan

SONY'S NEWEST WALKMAN offers excellent sound quality.

82
VERY GOOD

Walkman NWZ-S738F | Sony
Sounds terrific, particularly with the noise-cancellation feature.
Street: $150 (4GB), $180 (8GB)
find.pcworld.com/62404

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Core i7, Phenom II CPUs Reach Value Desktops

PCW Test Center

WHAT A DIFFERENCE a few months can make. In the December 2008 issue, most PCs on the sub-$1500 value-desktops chart struggled to achieve a score over 100 in our WorldBench 6 tests. By contrast, power desktops priced at more than $1500 routinely hit scores around 126. Now with most new value systems easily surpassing 100, the power-versus-value gap has clearly narrowed.

The fourth-ranked Gateway FX6800-01e benefits from using the entry-level version of Intel's high-end Core i7 CPU, while the Polywell MiniBox 780G-940 (in sixth place) does well with AMD's new Phenom II X4 940 processor. Despite boasting those latest chips (with price tags above $1000 to match), neither system performs significantly better than rival desktop PCs costing little more than half as much.

—Danny Allen

POLYWELL'S COMPACT MiniBox 780G-940 offers lots of storage.

MORE ONLINE

For in-depth reviews of all the desktops in this chart, and for information on how we test, go to find.pcworld.com/61745.

PC WORLD TOP 10 VALUE DESKTOP PCs

	MODEL	PCW Rating	Performance	Features and specifications
1	BEST BUY Micro Express MicroFlex 82B $699 find.pcworld.com/61742	86 VERY GOOD	• WorldBench 6 score: 117 • WorldBench 6 rating: Superior • Overall design: Good • Graphics: Superior	• 3-GHz Core 2 Duo E8400 CPU • 2GB RAM[1]; 250GB storage • 512MB nVidia GeForce 8800GT • DVD±RW drive
	BOTTOM LINE: The MicroFlex 82B has limited storage but provides plenty of horsepower without draining your savings.			
2	Micro Express MicroFlex 450B $1299 find.pcworld.com/61318	82 VERY GOOD	• WorldBench 6 score: 119 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 2.83-GHz Core 2 Quad Q9550 CPU • 4GB RAM[1]; 500GB storage • 512MB Sapphire HD4870 • DVD±RW drive
	BOTTOM LINE: The MicroFlex 450B desktop delivers a whole lot of performance for a reasonable price.			
3	Dell Inspiron 518 $649 find.pcworld.com/61740	82 VERY GOOD	• WorldBench 6 score: 108 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Poor	• 2.4-GHz Core 2 Quad Q6600 CPU • 3GB DDR2-800 RAM; 320GB storage • 256MB ATI Radeon HD 3450 • DVD±RW drive
	BOTTOM LINE: If excellent everyday performance on a budget is your desire, this Dell makes a good choice.			
4	Gateway FX6800-01e $1250 NEW find.pcworld.com/62372	78 GOOD	• WorldBench 6 score: 115 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 2.66-GHz Core i7 920 CPU • 3GB DDR3-1333 RAM; 750GB storage • 512MB ATI Radeon HD 4850 • DVD±RW drive
	BOTTOM LINE: With top-notch performance, design, and expandability, the FX6800-01e is one of the better options here.			
5	Dell Studio Slim $814 NEW find.pcworld.com/62365	77 GOOD	• WorldBench 6 score: 106 • WorldBench 6 rating: Very Good • Overall design: Good • Graphics: Poor	• 2.33-GHz Core 2 Quad Q8200 CPU • 4GB DDR2-800 RAM; 640GB storage • 256MB ATI Radeon HD 3450 • DVD±RW drive
	BOTTOM LINE: This compact PC provides above-average application performance and connectivity, but upgrades are limited.			
6	Polywell MiniBox 780G-940 $1399 NEW find.pcworld.com/62371	77 GOOD	• WorldBench 6 score: 113 • WorldBench 6 rating: Superior • Overall design: Good • Graphics: Superior	• 3-GHz Phenom II X4 940 CPU • 4GB DDR2-667 RAM; 1.5TB storage • 1GB nVidia GeForce GTX285 • DVD±RW drive
	BOTTOM LINE: The portable MiniBox has nVidia's latest graphics, and an amazing amount of storage and connection options.			
7	eMachines ET1161-03 $400 NEW find.pcworld.com/62367	77 GOOD	• WorldBench 6 score: 79 • WorldBench 6 rating: Fair • Overall design: Good • Graphics: Poor	• 2.3-GHz Athlon 64 X2 4400+ CPU • 3GB DDR2-667 RAM; 320GB storage • Integrated nVidia GeForce 6150SE • DVD±RW drive
	BOTTOM LINE: With an upgrade or two, the ET1161-03 could become a pretty good general-purpose value desktop.			
8	Dell XPS 630 $1419 find.pcworld.com/61315	76 GOOD	• WorldBench 6 score: 114 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 3.16-GHz Core 2 Duo E8500 CPU • 4GB DDR2-800 RAM; 640GB storage • 512MB nVidia GeForce 9800 GT • DVD±RW and DVD-ROM drives
	BOTTOM LINE: This customizable desktop system provides affordable performance in a stylish package.			
9	Lenovo 3000 H210 $479 NEW find.pcworld.com/62364	76 GOOD	• WorldBench 6 score: 99 • WorldBench 6 rating: Very Good • Overall design: Fair • Graphics: Poor	• 2.5-GHz Pentium Dual-Core E5200 CPU • 4GB DDR2-667 RAM; 500GB storage • Integrated Intel GMA 3100 • DVD±RW drive
	BOTTOM LINE: The H210 is one of the better sub-$500 systems we've seen recently, but it doesn't handle games very well.			
10	Polywell Poly i7050 $499 find.pcworld.com/59996	76 GOOD	• WorldBench 6 score: 77 • WorldBench 6 rating: Fair • Overall design: Good • Graphics: Poor	• 2-GHz Pentium Dual-Core E2180 CPU • 2GB RAM[1]; 250GB storage • Integrated nVidia GeForce 7150 • DVD±RW drive
	BOTTOM LINE: The i7050 delivers solid performance for basic tasks but not for games, and the compact case limits expansion.			

CHART NOTES: Prices and ratings are as of 2/2/09. Monitor not included in system prices. FOOTNOTE: [1]RAM speed not available.

PHOTOGRAPH: ROBERT CARDIN

All-in-One Tuneup Tool

ASHAMPOO'S WinOptimizer 6 includes just about every tuneup feature you can imagine, whether you want to clean your Registry, undelete files, defragment the hard disk, clear out startup apps, or perform a simple, one-click optimization.

This tool finds tweaks that rivals miss. For example, in addition to cleaning startup programs, it checks for unneeded services, such as the Tablet PC Input Service.

WINOPTIMIZER CAN CLEAN your PC in a variety of ways.

All the modules are well integrated and easy to use. A backup feature lets you restore your PC if you decide to roll back a change.

If you want an all-in-one utility that does a superb job, you'll find WinOptimizer well worth its $50 price tag.

—Preston Gralla

88
VERY GOOD

WinOptimizer 6 | Ashampoo
All-in-one utility has every PC optimization feature you could want.
List: $50 (ten-day free trial)
find.pcworld.com/62419

DOWNLOAD THIS

Speed Up Vista and Play a Crayon Physics Game

AS WINDOWS XP fades away, more and more computers are running Vista. We found three downloadable files that can make your Vista experience more comfortable. One free utility can speed up your Vista system by managing services, and another can easily create disk images of your Vista or XP machine. And when all of your work is done, you can remind yourself of the other meanings of "vista" by scribbling crayon drawings in a delightful demo of a groundbreaking game. Enjoy the view.

Vista Services Optimizer

Silently running in the background of your Vista PC are a number of services that you don't need. These leeches slow your computer down and increase your system's boot time. The free Vista Services Optimizer utility helps address the problem by analyzing your PC, telling you which services you can safely turn off, and then turning them off for you.

Click the *Services Diagnostics* option to start. You then describe your PC and how you use it—whether it's connected to a network, whether you use a digital camera, whether you have third-party antispyware and firewall utilities, and so on. Afterward the software checks all of the services that run in the background, and gives you a full report detailing which ones you can stop. You can then instruct Vista Services Optimizer to turn off all of the unnecessary services instantly, or you can use the program to turn them off manually, one at a time. find.pcworld.com/62425

—Preston Gralla

Macrium Reflect Free Edition

With so many disk-imaging programs around, it's difficult for one to stand out from the crowd. And yet Macrium's Reflect Free Edition manages to do precisely that. The hard-drive partition images that this utility creates aren't any better than the ones competing products make, but its interface is the friendliest I've run across.

Among the tricks that Reflect has "borrowed" from its competitors are the option for users to save an image-definition file in XML (a feature that DriveImage XML offers) and the ability to mount and unmount disk images as normal Windows drive letters, such as Z: (à la R-Drive Image). Macrium Reflect Free Edition even allows you to schedule backups and create a recovery disc using Linux or Bart's PE—a nice bit of versatility. find.pcworld.com/62423

—Jon L. Jacobi

Crayon Physics Deluxe

Crayon Physics Deluxe, true to its title, transforms whatever you dash off with your crayon-tipped pointer into a two-dimensional object with physical heft. Draw a box suspended by nothing, for example, and gravity pulls the box down until it encounters something else—say, another box, a ramp, or a sawtooth field of grass. If instead you draw the box so that it's halfway over a circular object at rest, when it drops, the box's weight and momentum will edge the circle into motion.

DOODLE YOUR WAY to real-world physics triumph in the creative and playful Crayon Physics Deluxe game.

Your goal, as you work through dozens of linked "island" maps, is to nudge a small red ball located on one side of a page toward a star perched strategically out of reach. Simply get the ball to the star—Crayon Physics doesn't care how. It's a game and it's a toy. It's both and it's neither. find.pcworld.com/62426

—Matt Peckham

IN
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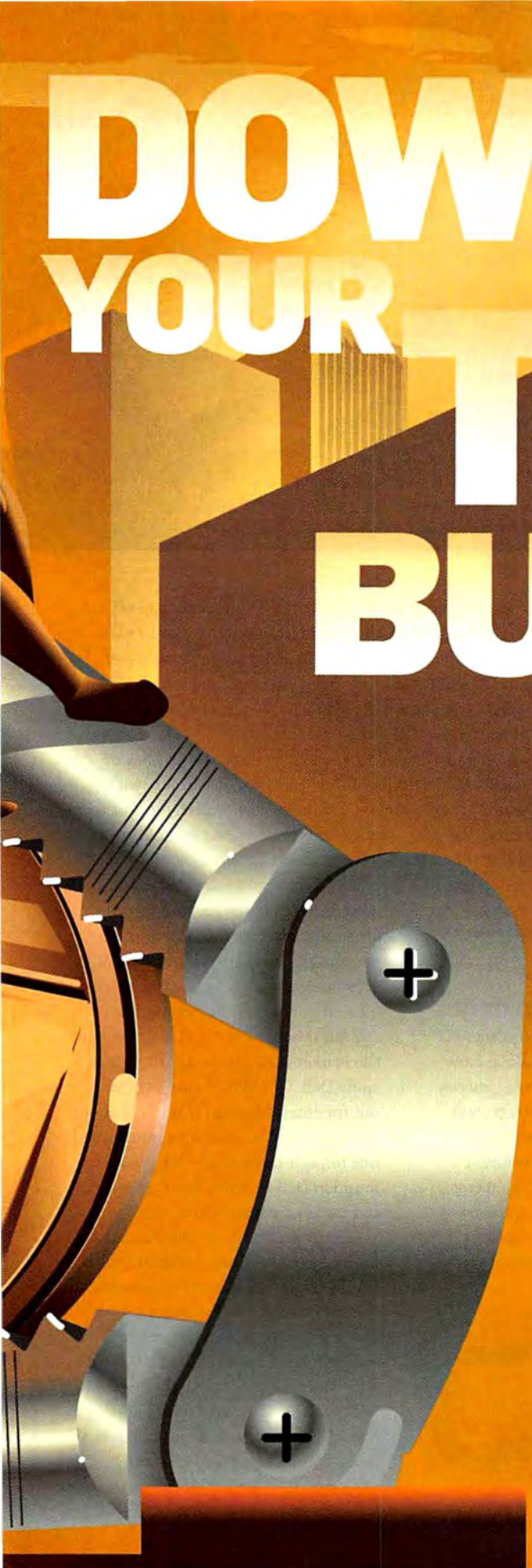
DOWNSIZE YOUR TECH BUDGET



It's always smart to get the most for your tech dollar, but when the economy tanks, everyone has to start pinching pennies. These 31 tips will help you save big bucks.

A FRIEND OF mine recently bought a fancy new MacBook Air. Despite the "Apple tax," he decided that the razor-thin laptop was worth its $1799 asking price. A month later, he discovered that Apple was selling refurbished Airs for just $999. Poking around the company's online store could have left him $800 richer.

I don't like it when shoppers pay more than they have to. And given the economy's parlous state, we all need to be careful with our tech dollars. So it's a good time for a refresher course in the tricks of the cheapskate trade.

Over the course of a year, the 31 tips in this article could save you more than $7500. Granted, that figure is based on my estimates, and I'm a fairly heavy shopper. Your results will likely be different, but still we're talking serious money. You'll also find some tips on avoiding false savings (see "Money Traps" on page 75) and several boxes pointing out particularly good deals on must-have hardware—albeit hardware with few frills. »

BY RICK BROIDA • ILLUSTRATIONS BY JOHN MATTOS

tip 5 » The Web is awash in discounts, promotions, and other ways for smart shoppers to save money.

Save Big Online

Regular Internet shoppers know the advantages of e-tailing: lower prices, larger selection, and the chance to shop in their skivvies. Savings in some categories can be really pronounced, and if you don't sign up for deal newsletters or don't check for coupons before authorizing a transaction, you might be missing out on saving even more.

1. Get a big TV for a small(er) price: Overall, HDTV prices haven't dropped much in the past six months. That's all the more reason to shop online. Pricing a 46-inch Sony Bravia KDL-46W4100 at a brick-and-mortar Best Buy gave me sticker shock: a penny short of $2000, not including sales tax. But Amazon had the same set for $1594, shipping included. And at PC Connection, the price was $100 less than at Amazon: $1494—again with free shipping.

I also priced the Samsung LN46A650, another 46-inch LCD set. Though the price difference in this case wasn't nearly as steep ($1545 at Best Buy, $1487 at Amazon), the latter's freedom from sales tax again made this a no-brainer. Pay extra only if you insist on having a storefront at hand in case something goes wrong. (But with big-box storefronts like Circuit City closing up shop, even that isn't a sure thing anymore.)

Estimated savings: As much as $500 on a 46-inch LCD.

2. Cut your costs on overpriced cables: If you browse the aisles of your local electronics store, you'll likely find a Nyko HDMI Cable for PlayStation 3 selling for $60, a NexxTech Ultimate HDMI to HDMI Cable going for $70, or a Monster Cable 700hd High Speed HDMI Cable priced at a whopping $95. And they're not even jewel-encrusted!

They are, however, very overpriced. At MonoPrice.com, a 6-foot HDMI cable sells for $10. At Meritline.com, you can buy a pair of them for—are you sitting down?—$11, shipped. Okay, but you get what you pay for; and if no-brand cables cost so little, they must be shoddy and unreliable, resulting in a poor-quality picture. Right?

Wrong. *PC World*'s tests (see "The Cable Game," find.pcworld.com/61812) and my own hands-on experience show that $10 HDMI cables work as well as $100 counterparts—particularly at the 6-foot length most home-theater setups use. Bottom line: Don't buy overpackaged, overpriced cables from stores. Ever.

Estimated savings: $50 on a 6-foot cable.

3. Stop buying CDs, start saving cash: If you still buy new CDs, you're paying too much. Consider Coldplay's *Viva La Vida*, one of my favorite albums of 2008. At the mall, you'd pay around $15 plus tax for it. DeepDiscount.com sells it for $11 shipped—but you will have to wait a week or so to get it.

At Amazon's MP3 store (find.pcworld.com/62411), the album costs $9, and it downloads immediately to your iTunes or Windows Media Player library, ready for play or for syncing to your portable jukebox. Audiophiles may disagree, but to my ears a 256-kbps MP3 sounds just as good as a CD.

And don't forget Web services like Pandora.com and Slacker.com, where you can build custom radio stations based on your favorite artists and afterward stream music to your heart's content—all free of charge.

Estimated savings: $70 annually, based on a rate of one album per month.

4. Buy refurbished hardware: Are you in the market for a new laptop? Maybe a spiffy Dell XPS M1530 that's tricked out for entertainment? It starts at about $949, but you can pick up a refurbished one for as little as $729—the price I found in Dell's Outlet Store (www.dell.com/outlet), home to all its refurbs.

Refurbished items are products that flunked a manufacturer's initial quality checks or were returned for some reason. Either way, the hardware gets rechecked (and repaired, if necessary) and restocked, though it can't be sold as new. Hence the often-hefty discounts.

What's the downside? The gear may have dents, scratches, or other physical flaws. Also, it usually comes with a

GOOD DEAL

Multifunction Inkjet

You'll be hard-pressed to identify a multifunction color inkjet printer offering as good a balance between cost (about $150 list, in February) and quality as the Canon Pixma MP620 (find.pcworld.com/61884). With its media slots; USB, ethernet, and Wi-Fi connections; and two 150-sheet input trays, it meets most small-office and home needs.

PHOTOGRAPHS: ROBERT CARDIN

shorter-than-average warranty (90 days is typical). Apple products are an exception: Refurbished iPods, iMacs, and the like have the same one-year warranty as new items. Ditto for Dell hardware.

HP, Lenovo and others sell refurbished PCs from their online stores; you'll find refurb Blu-ray players, universal remotes, GPS receivers, and other electronics at sites like Buy.com, eCost, and Newegg. **Estimated savings:** $220 on a refurbished Dell XPS M1530 PC.

5. Wait for savings to come to you: The Web is awash in discounts, promotions, and other ways for smart shoppers to save money. WishRadar.com, for example, will notify you via e-mail when the price of an Amazon wish-list item has dropped to where you want it. Price-comparison site PriceGrabber.com has a similar tool: Add any product to your personal shopping list and set a "target price alert," and the site will notify you when the item hits that target price. (Full disclosure: PriceGrabber powers PCWorld.com's Shop and Compare feature.)

If you routinely shop at the same stores, sign up for their e-mail newsletters. Borders, CompUSA, and eReader are among the e-tailers with exclusive discounts for subscribers. **Estimated savings:** $100 per year, based on my shopping habits.

6. Clip some online coupons: Have you ever reached the checkout page at an online store and wished that you had a juicy discount code to enter? Why not spend a few minutes looking for one? Just pop open a new browser tab and search for the name of the store and the words "coupon code" (or "discount code" or "promotion code"). Or head directly to a code-collecting site like DealLocker.com or RetailMeNot.com and look for the latest offers for your store. You may come up empty—or land a code that will save you 10 percent or net you free shipping. It works about half the time for me. **Estimated savings:** $50 per year, based on my shopping habits.

7. Save on shipping: Head to FreeShippingOn.com to search Amazon and eBay for items that the sellers are offering without shipping charges. You'll also find free-shipping coupons for stores like Best Buy and Staples. Or get an alphabetical list of all the Web's current free-shipping deals at DealTaker.com. **Estimated savings:** $60 per year, based on my shopping habits.

8. Search (Live) for savings: Microsoft has come up with an incentive program to encourage you to use Live Search for your shopping (search.live.com/cashback): Find the product you want, then compare prices from participating stores. When you make a purchase, Microsoft will give you back a percentage (which varies, depending on the store) in cold, hard cash. **Estimated savings:** A few bucks here and there.

GOOD DEAL

42-Inch LCD HDTV

With excellent image quality overall and a 120-Hz refresh rate for smoother motion, the Vizio SV420XVT (find.pcworld.com/61907) comes in at just under $1000 as of early February. Drawbacks? Most inputs are hard to reach; and it has no quick menu for frequently altered settings, no USB port, and no SD Card slot for photos or music. Still, for a great HDTV picture at a good price, this is it.

Cut Your Printer Costs

Printers blow through ink cartridges as extravagantly as Wall Street bankers blow through bailout money. And your printer may cry "no ink!" when it still has plenty. (See our video, "Is That Ink Cartridge Really Empty?" at find.pcworld.com/62393.) In any case, no one likes to pay for pricey ink supplies, so here are some ways to cut your consumption.

9. Buy no-brand ink: Do you have to buy pricey name-brand ink for your inkjet printer? As we noted in "Cheap Ink: Will It Cost You?" (find.pcworld.com/61892), inexpensive third-party and remanufactured cartridges often yield more prints than their new, branded counterparts—but the quality and fade-resistance of the ink may be lower. Thus, while you'll save some money, you may not be as happy with your printer's photo output.

If you print primarily text, however, choosing the cheap stuff makes sense. This is true for laser printers as well: For years I've used only remanufactured toner cartridges in my HP and Brother lasers, with consistently excellent results. **Estimated savings:** $30 on a black ink replacement cartridge compatible with an HP 45 inkjet printer.

10. Use your printer's economy mode: For a draft of a school paper or business presentation, use your printer's economy mode setting. That setting takes less ink, resulting in lighter (but still readable) output. Before you print, open the printer's preferences settings from within the program's Print dialog box, and look for a setting called Draft Mode, Economy Mode, Toner Saver, or the like. (On some inkjets, the 'Fast' quality setting amounts to economy mode.) And consider making this the default setting, switching to standard (or high-quality) mode only for documents that need it. **Estimated savings:** $25 per year.

11. Print two sheets on each page: Shrink your output and save. Most printer drivers can fit two pages' worth of a document onto a single sheet of paper. Each page gets reduced in size and rotated 90 degrees, so that two pages land side-by-side on one sheet (think: booklet).

Programs like Word and Adobe Reader offer this option in the Print menu. In programs that don't (like Firefox), you can open the Properties menu for the selected printer and look for a 'page layout' or 'page scaling' option. This isn't practical for all printing needs, but it will save both ink and paper. **Estimated savings:** $20 per year.

12. Print to PDF instead: The best way to save paper and ink is not to use them. When possible, "print" your documents »

to PDF files you can store on your PC or e-mail to others. I like CutePDF Writer (find.pcworld.com/56229), a freeware "printer driver" that lets you turn virtually any document into a PDF. So, before you click Print, ask yourself whether you—or the document's eventual recipient—can live with electronic text. **Estimated savings:** $20 per year.

13. Get a laser printer: If you print photos infrequently but like to make hard copies of Web receipts and other text documents, you can save cash by opting for an inexpensive laser printer to do routine jobs and by using online photo printing services when you do want prints. Laser printers still cost more than inkjets, but toner's cheaper per-page cost can make up the difference over time. You can do your own total-cost-of-ownership calculations with a spreadsheet such as the one at Nifty-Stuff.com (click 'Printer Total Cost Of Ownership'). **Estimated savings:** Depends on your printing habits.

Go Green

Save energy. Save the environment. Save money. Sounds good, huh? Savvy use of technology can help you do all three.

14. Don't overcharge your laptop battery: These days it's not at all uncommon for laptops to serve desktop duty. But if you leave the battery inside the system 24/7, it will keep drawing power, even when fully charged. Not only is that a waste of energy and money, but it's bad news for the battery: Constant charging will reduce its capacity to hold a charge and curtail its overall longevity.

There's a fast and simple solution: Pull the battery out. Most notebooks can run off AC power when no battery is present, so take the power cell out of the equation. It will stay in pristine condition and save you a kilowatt or two. **Estimated savings:** A few dollars on your monthly electric bill and $120 on premature battery replacement.

15. Revive old PCs: PCs and landfills go together like oil and water—or more accurately, like mercury (which can leak out of computer circuitry) and groundwater. Unfortunately, more and more unwanted computers and monitors end up in landfills every year, and the environmental impact is considerable.

Before you consign your unwanted system to the dump, consider giving it new life. One option: Wipe the hard drive and install a Linux-based operating system such as gOS (thinkgos.com), which has such modest system requirements that even a six-year-old Pentium 4 feels like a modern Core 2 Duo. The system could then go to a student or tech-challenged senior—anyone with basic computing needs.

Alternatively, if you plug your aged PC into a router, it can double as a file or print server for your home network (see "Get More Out of Your PC," find.pcworld.com/62412). Spring for a TV tuner, and you can install free media-center software like MediaPortal (www.team-mediaportal.com) and transform your old system into a DVR—no monthly TiVo fees required. **Estimated savings:** $120 on a network-attached storage device.

16. Pay your bills online: The back-and-forth of snail-mail bills represents a massive waste of resources (for paper, printing, hauling, and postage). Financial institutions have had plenty of time to work out the kinks in electronic bill-pay services, so why continue using paper checks, envelopes, and postage?

Banks do charge for online bill-paying service, but some of them offer it for free if you do enough business with them. Or try MyCheckFree.com, which lets you pay many major billers at no charge. Alternatively, you can set up automated bill pay with the many utilities and banks that can collect payments via direct withdrawal from a bank account. **Estimated savings:** $40 a year, if you can avoid electronic-payment fees.

17. Switch to rechargeable batteries: Game controllers, kids' toys, digital cameras, and other electronics chew through batteries faster than beavers chew through balsa wood. And naturally they chew through your wallet, too: A four-pack of Duracell AA batteries sells for around $6. Buy just one pack per month and you're out $72 a year.

Instead, invest $25 in an Energizer four-slot battery charger (which comes with a pair of rechargeable AAs) and a four-pack of extra rechargeables. Compared with disposable batteries, outlet electricity costs pennies on the dollar. **Estimated savings:** $50 a year and possibly the very earth we live on.

GOOD DEAL

Digital Camera

With all of the new digital camera announcements at the recent Consumer Electronics Show—as well as all the ones coming up at the PMA imaging show in March—now is a great time to buy one of last year's top-of-the-line point-and-shoots at a bargain-bin price. We like the Pentax Optio A40 (find.pcworld.com/61708), a 12-megapixel pocket camera that delivers very good image quality (according to our tests), optical image stabilization, and a DivX movie mode. The Optio A40 cost about $250 when it was released last year, but this February it was selling for as little as $120.

Talk (and Text) Cheap

Woe unto the checkbook of the average household with teenagers. Between landlines, cell phones, and text messages, it's easy to rack up hundreds of dollars in monthly phone-service bills—not counting any overages you incur.

Fortunately, you don't need to cut the

PHOTOGRAPH: ROBERT CARDIN

(phone) cord—you just need to cut your costs. It isn't hard to do, especially if you're willing to make a few minor changes to your chat habits. (For additional ideas, see "Slash Phone Costs With Tech-Savvy Tricks," on page 96.)

18. Ditch your landline: If you've been reluctant to switch to voice-over-IP phone service, which uses your broadband hookup for voice calls, it may be time to reconsider. ViaTalk.com, for example, gives you two phone lines (though not two numbers) and a year of unlimited local and long-distance calls for $199, which comes to $16.58 a month. Vonage charges $25 a month, still quite a bit less than the telcos.

Both services offer voicemail, Caller ID, call-forwarding, and more; and they allow you to keep your existing number. **Estimated savings:** $250 per year on a standard primary phone line—not including long-distance charges.

19. Add a second line for peanuts: Plug a MagicJack device (find.pcworld.com/62413) into your PC, and then plug any phone into the MagicJack. This USB gizmo supplies a new phone number and a year's worth of voicemail, Caller ID, and unlimited calling services for $40 (thereafter, the service costs $20 a year). Note: You must leave your PC running 24/7. **Estimated savings:** $240 or more per year on a second landline.

20. Switch to a prepaid cell phone: Do you rarely use more than a fraction of your allotted minutes? Then steer clear of phone contracts, which usually run at least $40 monthly and lock you in for two years. Instead, consider choosing a prepaid phone and accompanying service such as AT&T GoPhone, T-Mobile Prepaid, TracFone, or Verizon InPulse.

Depending on the service, you either buy minutes in advance (starting at $25 per block) or pay by the day: a buck for each day that you actually use the telephone, plus 10 cents per minute of airtime. These arrangements could be perfect for kids, seniors, and anyone else needing an "emergencies only" phone. **Estimated savings:** Up to $500 per year, depending on airtime consumed. »

Money Traps: 'It Sure Sounded Like a Good Deal at the Time!'

BESIDES ALL THE great deals and freebies we're listing here, you should be aware of some money traps—where you may save initially, but definitely end up paying later.

NOT ENOUGH RAM: Skimping on memory to keep the price of a new PC low, thinking that you'll just add memory later if need be, is fine if the system has open RAM sockets. But many PCs—especially laptops—have no spare room at the memory inn. Consequently, you'll have to discard the existing modules to make room for the new ones; and an upgrade from, say, 2GB to 4GB of RAM will cost you the full price of the 4GB.

So if you plan on equipping your system with 4GB of RAM, buy it with 4GB of RAM. (And remember, you'll need a 64-bit OS to address that much memory.)

CHEAP PRINTER, PRICEY INK: A budget inkjet printer can turn out to be a money sink if you don't look closely at ink prices. Consider, for example, the Epson WorkForce 40: Though this printer sells for a mere $130, Epson charges $17 for a regular-size black ink cartridge that yields only 230 printed pages, which means that the ink costs work out to a whopping 7.4 cents per page. If you print in volume, buying a cheap printer without factoring in the cost of consumables is almost certainly a recipe for regret.

SUSPICIOUSLY CHEAP HARDWARE: You've heard of counterfeit bills and counterfeit diamonds, but counterfeit cell-phone batteries? Yep, they're floating around out there, along with bogus laptops, flash drives, and PC components. Not only are these bargain-priced items unreliable; they are potentially dangerous. A shoddy battery could overheat and fry your phone—and maybe burn you at the same time (for this and other horror stories, see "Fakes!" at find.pcworld.com/62418).

How can you steer clear of counterfeit hardware? The safest course is to buy only from reputable merchants and avoid too-good-to-be-true deals.

'FREE' MONEY: You've seen these come-ons before: After you buy something online, a pop-up promises you, say, $10 off your next purchase if you'll complete a short survey. Sounds reasonable, right? But there's just one problem: To get the credit, you have to agree to receive offers from one or more other companies. Translation: A landslide of spam awaits you. Is a e-mailbox packed with even more junk mail than usual worth a measly 10 bucks? Think twice before you click on that offer.

'FREE' SHIPPING: I'll admit it: I'm a sucker for Amazon's "free shipping on orders over $25" deal. So what if the book I really want is only $10.95? All I have to do is order another $14.05 worth of stuff, and I'll avoid that $3.99 shipping charge!

Yeah, math was never my strong suit. Obviously, $10.95 plus $3.99 equals something well below $25. Don't let the appeal of saving $4 con you into spending an extra $11 (or whatever it works out to be). Stuffing your shopping cart makes sense only if your preshipping total comes to within a few bucks of $25—and you can find a worthwhile item that brings the total to around $25 even. Then it's like getting a freebie.

21. Make dirt-cheap international calls: On a recent trip to the Bahamas, I had two choices for calling home on my iPhone: Pay AT&T's insane $2-per-minute rates for international service, or pay 6 cents per minute to Truphone (www.truphone.com).

This free VoIP app is available now for BlackBerry, iPhone, and Nokia handsets; and it will be offered soon for other models. All you need is access to a Wi-Fi hotspot. That's not always convenient, but for a 97 percent discount on international calls, convenience be darned. **Estimated savings:** $19.40 on a 10-minute call to the United States.

22. Send free text messages: Most carriers charge 20 cents per text message. And most teenagers exchange a gazillion text messages per month—on their parents' dime. That's some ugly math. You could lower the rates by adding a messaging package to your service plan, to the tune of $5 to $20 per month. But we want your bill to go down, not up.

If you are the sender and you're near a PC, you can bypass your phone altogether and send messages gratis via GizmoSMS.com. Enter the recipient's phone number and your message, and click *Send*. For a two-way alternative, go to Cherple.com, whose free program for Mac and Windows lets you receive as well as send text messages. Gmail users can do likewise by enabling Text Messaging (SMS) in Chat (find.pcworld.com/62414), a new Google Labs feature that adds texting capabilities to Gmail.

If you're an iPhone user, you should snap up SMS Touch, a $3 application that enables you to send unlimited messages (find.pcworld.com/62415). Replies land in your e-mail inbox. **Estimated savings:** $5 to $50 per month.

GOOD DEAL

Netbook

Looking for a budget netbook for quick and easy mobility? The Acer Aspire One (find.pcworld.com/61821) could fit the bill. It's not perfect—you might consider splurging for the six-cell battery, since the three-cell battery it comes with won't last much beyond 2 hours on a charge, and the 8.9-inch screen is small. But it has a great, adult-hands-friendly keyboard and a reasonably roomy 120GB hard disk. Finally, its irresistible $350 base price makes the Aspire One a solid candidate to tide you over until a future crop of this fast-evolving class of portables comes along later this year.

Save on Software

PC World readers know that a freeware or open-source alternative exists for just about every pricey application or operating system. For example, OpenOffice can easily take the place of Microsoft Office. GIMP and Paint.Net can fill in for Photoshop. And Linux handily gives Windows the boot.

But here are some lesser-known stars of the free-software universe. Some can even replace expensive hardware.

23. Get a Slingbox without the Slingbox: Like the idea of streaming music, photos, videos, and even live TV from your PC to, say, your hotel room or BlackBerry? You could ferry live or recorded TV across the Net by plugging a Slingbox into your cable box or DVR, but the device is expensive.

Amazingly, a free, software-only alternative exists: Orb.com's Orb. Simply install the application on your system, and then connect from afar using any device that has a streaming media player (laptop, PDA, smart phone, or whatever). If your PC has a TV tuner, Orb can even stream live and recorded shows. **Estimated savings:** $180 to $300.

24. Create diagrams online: You could shell out $559 for Microsoft Visio 2007 Professional, $259 for Visio 2007 Standard—or zero for Gliffy (www.gliffy.com). This Web-based diagramming tool lets you build flow charts, floor plans, and many other kinds of drawings. You can add colors, drop shadows, and gradient fills to your shapes, and collaborate on drawings with other users. You may want to spring for an ad-free Premium account ($5/month), which provides e-mail support and security features. **Estimated savings:** $259 to $559.

25. Read e-books without a Kindle: Much as I love e-books, I'm not a fan of Amazon's $359 Kindle. Your PDA or smart phone can carry mainstream fiction and nonfiction titles from services like Fictionwise.com, eReader.com, and Mobipocket.com. Sure, phone screens are small, but they're also backlit—which makes them great for reading in bed. iPhone users can even download new books on the fly, no PC required, by using the free eReader and Stanza (www.lexcycle.com) apps. **Estimated savings:** $359.

26. Burn CDs and DVDs: To create a mix CD or to archive video files onto a DVD, you don't need a pricey program like Nero or Easy Media Creator. Instead, try InfraRecorder.org, whose simple Explorer-style interface helps you burn, baby, burn.

You can use InfraRecorder to author all kinds of discs. In addition, it can make copies of unprotected discs and burn ISO image files to create bootable CDs and DVDs. And it's open-source, so it does all that without burning any of your cash. **Estimated savings:** $100.

27. Manage your money without spending any: Both Quicken and Microsoft Money put a dent in your savings. An open-source alternative is Gnucash.org. It manages personal and small-business accounts, creates detailed report graphs, categorizes cash flow, and pulls stock quotes from the Web.

Gnucash can import QIF files from Quicken, and it even has online-banking features so you can reconcile your credit-card

PHOTOGRAPHS: ROBERT CARDIN

tip 30 » If you change a few of your viewing habits, you can kiss the cable company goodbye.

and bank statements without entering the data manually. Best of all, Gnucash doesn't "sunset" after two or three years as Quicken and Money do—hence, no forced upgrades.

If you're comfortable going with a Web-based approach instead of a desktop application, check out the latest crop of Web-based personal finance apps. Services such as Mint.com, Rudder, Thrive, and even Intuit's formerly fee-based Quicken Online are free, and do a great job of helping you track your online banking, credit-card, loan, and investment accounts. **Estimated savings:** $20 to $70 per year if you routinely buy the newest version of Quicken or Money.

Build a Thrifty Home Theater

Why spend $60 a pop taking the family to the cineplex when you can make your home your theater? Granted, amenities like HDTVs, Blu-ray players, and cable service add up. But believe it or not, there is such a thing as a thrifty home theater. Here's how to build it.

28. Get a big picture without a big TV: For sports, movies, console games, and *Lost*, bigger is always better. Alas, LCD and plasma TVs currently top out at 65 inches and sell for at least $4000. What would you say to a screen that's nearly five times larger but only half the price?

I'm talking about an HD projector like the Epson PowerLite Home Cinema 1080 Projector. It can create a 1080p image of up to 300 inches diagonally (if you have a 25-foot wall available). It works with cable, Xbox, Blu-ray player, and other sources, and it costs about $2000. Sure, you'll need to have a reasonably dark room to enjoy it, but you'll score bragging rights with the neighbors—and save money. **Estimated savings:** $2000.

29. Skip the Blu-ray player: Blu-ray won the high-definition DVD war over a year ago, but Blu-ray players still cost 200 bucks or so. Despite the victory, Blu-ray movie selection remains limited (about 1500 titles to date), and the discs cost more than their standard-DVD counterparts. What's a cash-strapped HDTV owner to do?

Simple: Forgo Blu-ray for now and buy an up-converting DVD player to give plain DVDs an HD makeover, upscaling the pixels to take advantage of your TV's higher resolution. The results aren't quite on a par with Blu-ray, but they're a definite improvement—and you get to enjoy the movies you already own. These players range from $50 to $100. **Estimated savings:** $150.

30. Ditch cable: If you change a few of your viewing habits, you can kiss the cable company goodbye. It all starts with getting the most out of your Web browser: You can stream the latest episodes of your favorite shows—many in HD—from the networks' sites and from TV hubs like Fancast.com and Hulu.com. These offerings are free, on-demand shows with only brief commercial interruptions. Like sports? Head to ESPN360.com to watch live and recently played games.

To cover your bases on the premium channels, subscribe to Blockbuster or Netflix to get shows like *Dexter* on DVD (on-demand in the case of Netflix—it can now stream movies and TV shows to your PC, Xbox, or Roku set-top box). Packages start at about $9 monthly.

The downside? You'll have to watch everything on your computer (unless you connect it to your TV—a hassle). Plus, now that some cable firms have bandwidth caps, you could run into difficulty if you stream too much content. **Estimated savings:** $600 to $1800 annually.

31. Skip the TiVo: If you want a DVR à la TiVo but not another monthly bill, enlist your PC. Windows Media Center, a component of Vista Home Premium and Ultimate, offers DVR features. All you need is a TV tuner and a cable feed or antenna. A tuner costs $50 to $100, but the program guide is free, so it's a one-time expense. Find out more about this alternative at "Turn Any PC Into a Media Center" (find.pcworld.com/62417). **Estimated savings:** $150 annually. ●

GOOD DEAL

Desktop PC

The best budget, everyday PC could well be Dell's Inspiron 518 (find.pcworld.com/62420). It sports a 2.4-GHz Intel Core 2 Quad Q6600 CPU, 3GB of DDR2 memory, and a 320GB, 7200-rpm Western Digital Caviar SE16 hard drive; it also turned in a respectable score of 108 on our WorldBench 6 tests. A 20-inch widescreen LCD monitor with a built-in Webcam comes bundled. All this for under $700 (as of early February).

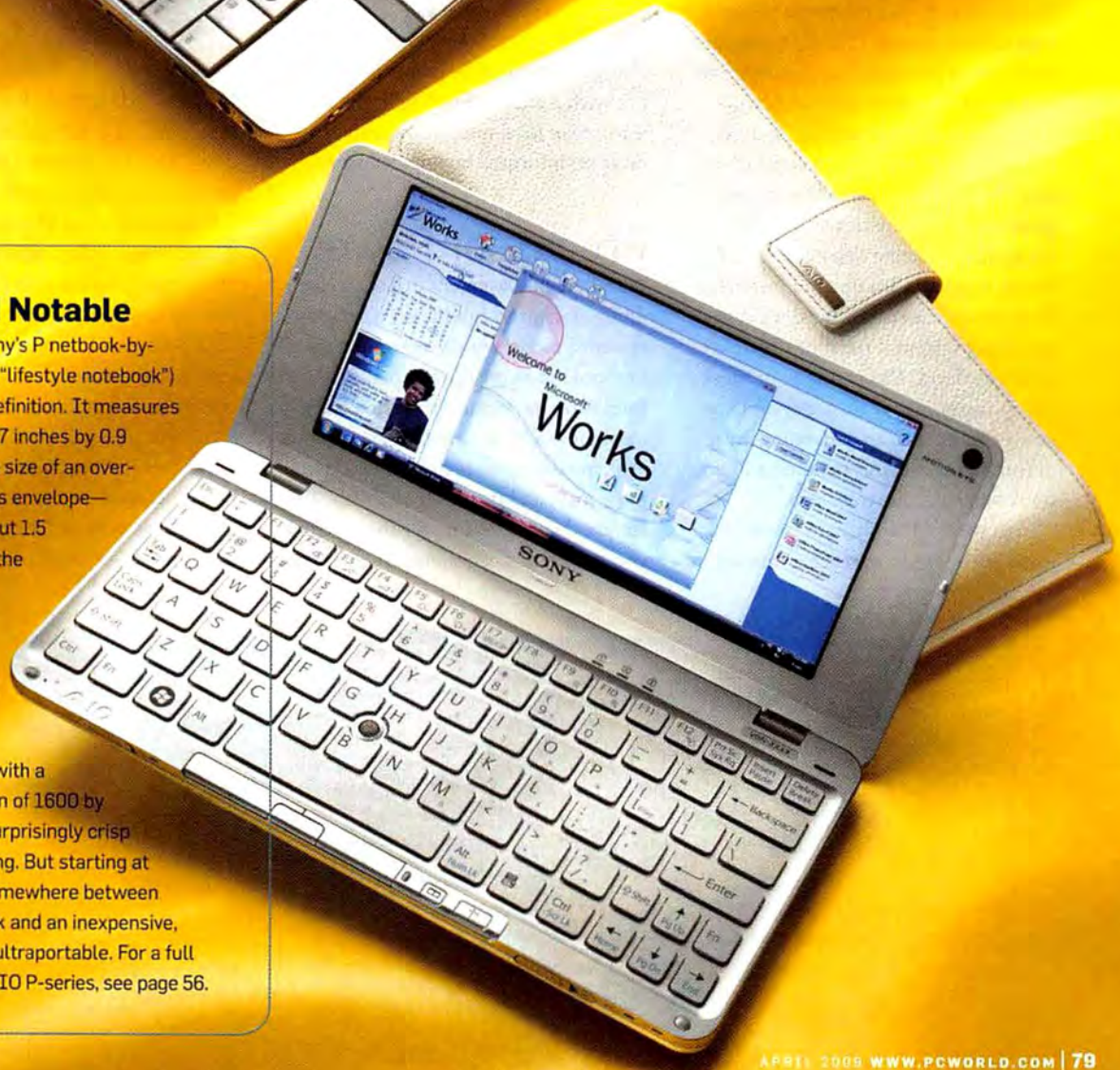
Next-Generation Netbooks: The New Ultra portables

Small, cheap, and surprisingly powerful, netbooks have made portability affordable. But with so many models flooding the market, choosing a mini-notebook that fits your needs isn't as easy as it should be. Here's a look at the upcoming crop, and the advice you need to buy wisely. »

BY DARREN GLADSTONE | PHOTOGRAPH BY MARC SIMON

New and Notable

HP Mini 2140 HP's Mini 2140 netbook is a cool-looking, corporate take on an up-to-the-minute netbook. It has a brushed aluminum lid, spill-resistant keys, and some neat features for serious computing. The most tricked-out version, selling for $629, carries 2GB of RAM and a speedy 7200-rpm, 160GB hard drive. We reviewed the Mini 2140 last month (find.pcworld.com/62407).



New and Notable

Sony VAIO P Sony's P netbook-by-another-name ("lifestyle notebook") defies simple definition. It measures 9.6 inches by 4.7 inches by 0.9 inch—about the size of an over-stuffed business envelope—and weighs about 1.5 pounds. Under the hood it carries Intel's Atom CPU, 2GB of RAM, and a 60GB HDD. Even the unit's 8-inch screen (with a native resolution of 1600 by 768 pixels) is surprisingly crisp for Web browsing. But starting at $900, it falls somewhere between a pricey netbook and an inexpensive, underpowered ultraportable. For a full review of the VAIO P-series, see page 56.

The term *netbook,*

coined by Intel, conveys little useful information about this category of machines. Sure, they all have wireless networking, but so does every other laptop. Originally what the term helped to identify was a class of small, ultralightweight, cheap-as-dirt mobile PCs. Netbooks are tiny—usually between half and two-thirds the size of a garden-variety laptop—and they typically weigh only about 2 pounds. With their cool, slim designs, they outclass some fancy ultraportables. And best of all, these diminutive laptops start at around $200 (in some cases $100, when purchased as part of a mobile broadband promotional deal).

But as the next generation of mini-notebooks emerges—with some examples illustrating this article—the distinguishing characteristics named above are in flux, spurring debate here at *PC World*. Is price still a decisive criterion? What about the size of the device, the operating system it runs, or the CPU under its hood? Ultimately all of these things factor into the category; but as new systems with an expanding array of features arrive, our definition of netbook will continue to evolve.

Then there's the blizzard factor: So many netbooks have reached market in the past year—and so many more are on the way—that selecting the right model can be a daunting task. There is no such thing as perfection in a category that is ultimately defined by compromises, but with a little grounding in the basic features of mini-notebooks, you can make an informed buying decision.

New and Notable

Acer Aspire One AOD150 With a 10.1-inch, 1025-by-600-pixel display, a 160GB hard drive, and a six-cell battery, the newly announced Acer Aspire One AOD150 weighs in at 2.95 pounds. Its relatively high screen resolution and substantial hard drive are a significant improvement over the features of previous Acer One models, while its $350 price tag keeps it well within the realm of traditional netbook affordability.

Processor Power

With bargain-basement prices, svelte dimensions, and full-blown operating systems, models in the current crop of netbooks look great on paper. But the Intel Atom processor powering these machines can't do anything much fancier than editing basic documents, sending e-mail, and browsing the Web. The standard configuration for the machines you'll find on store shelves includes a 1.6-GHz CPU with 1GB of RAM using Intel's 945 chip set and running Windows XP—not exactly a performance powerhouse, but it works.

Making the most of your netbook is all about managing expectations. Don't plan on playing modern PC games, editing huge pictures, or creating 1080p videos on these machines—at least not yet. Later this year, nVidia will release its Ion graphics platform, and AMD will launch its Neo processor. These two mobile chips promise to boost netbook performance significantly, and may very well change the way we think about small computers.

Evolution of the Tiny Notebook

TODAY'S NETBOOK is the most recent in a long line of petite but increasingly functional computers. Too small to be laptops and too big to be handhelds, these machines have quietly evolved as vendors sought an identity and a market niche for them. Here are a few of the milestone systems along the way to the netbook.

1991

Psion 3

Closer to an overpowered personal organizer than to a mini-notebook, the Psion 3 ran various programs and included a modem to handle dial-up Internet.

1996

Toshiba Libretto 20

With a 6.1-inch display, a 486 processor, and Windows 95, the Libretto was cute and impressive for its time.

Top Five Windows XP–Based Netbooks

Based on our PC World Test Center evaluations, these netbooks rule the roost among affordable, bantamweight portables.

	NETBOOK	PCW Rating	Performance	Features and specifications	Bottom line
1	BEST BUY Asus Eee PC 1000H 80G XP $449 find.pcworld.com/62405	86 VERY GOOD	• WorldBench 6 score: 37 Superior • Overall design: Very Good • Tested battery life: 4:32	• 1.6-GHz Intel Atom N270 • 10-inch wide screen • 3.2 pounds	Asus corrects most of the shortcomings of past models in the Eee family with its newest and biggest mini-notebook.
2	Lenovo IdeaPad S10 $449 find.pcworld.com/62406	86 VERY GOOD	• WorldBench 6 score: 41 Superior • Overall design: Very Good • Tested battery life: 2:35	• 1.6-GHz Intel Atom N270 • 10.2-inch wide screen • 2.7 pounds	Faster than its mini-portable brethren, the S10 offers enough perks to make this a top pick for serious travelers.
3	Acer Aspire One $349 find.pcworld.com/61821	83 VERY GOOD	• WorldBench 6 score: 34 Very Good • Overall design: Very Good • Tested battery life: 2:16	• 1.6-GHz Intel Atom N270 • 8.9-inch wide screen • 2.2 pounds	With its bargain-basement price, the Aspire One looks like a steal—until you realize that you need the six-cell battery (a $100 option).
4	HP Mini 2140 $529 find.pcworld.com/62407	81 VERY GOOD	• WorldBench 6 score: 26 Fair • Overall design: Very Good • Tested battery life: 6:50	• 1.6-GHz Intel Atom N270 • 10.1-inch wide screen • 2.6 pounds	The HP Mini 2140 netbook improves on the earlier Mini 2133, but it retains the awkwardly positioned mouse buttons.
5	Asus N10Jc $649 find.pcworld.com/62408	78 GOOD	• WorldBench 6 score: 36 Very Good • Overall design: Very Good • Tested battery life: 5:03	• 1.6-GHz Intel Atom N270 • 10.2-inch screen • 3.5 pounds	As a mobile business machine, Asus's N10Jc is a fantastic choice. But as a mini-notebook, it's on the expensive side.

CHART NOTE: Prices and ratings are as of 2/4/09. Battery life is expressed in hours:minutes.

Growing Displays

When I first encountered the original Asus Eee PC's 7-inch LCD, I had to increase the magnification in my eyeglasses' prescription—and spin the scroll wheel like a manic gerbil—just to read an everyday Web page.

Fortunately, times have changed. Even the smallest machines these days offer about 8 inches of viewable display area, with at least 800 pixels across. That is adequate for Web browsing, though the 10-inch screen available on the largest netbooks makes a real difference in the experience. I've streamed TV shows over Hulu.com onto an HP Mini 2140, and the images look great. But you also need to account for a couple of visual X-factors when selecting a netbook. The screen coating is a critical consideration. The HP Mini 2140's glossy screen may look snazzy indoors, but in broad daylight—where many people would at least occasionally use it—the glare on it can be blinding.

Another characteristic to weigh is native resolution. The default setting for most netbooks is 1024 by 600 pixels. Though this slightly odd aspect ratio will work with most software, some programs require a different resolution to run properly. For compatibility, Lenovo also incorporates a 1024-by-768-pixel-resolution option into its IdeaPad S10. If you intend to run proprietary business apps that demand a specific resolution, make sure that the netbook you buy can support it. »

1998 Casio Cassiopeia

Running Windows CE 1.0, the Cassiopeia set new standards for tiny computers with a 480-by-240 backlit LCD touch screen and a (relatively) usable keyboard.

1999 Psion netBook

The Psion netBook sported a 7.7-inch VGA touch-screen display, offered an optional PC Card modem, and promised 8.5 hours of battery life.

2000 HP Jornada 720

Like the Psion netBook, the HP Jornada had a StrongARM processor and long battery life, though its design was more svelte.

Visit find.pcworld.com/62463 for a more-detailed look at the netbook's forebears.

Better Battery Life

Though the Intel Atom CPU is by no means an energy hog, netbooks aren't known for long battery life. That is partly because vendors typically try to keep costs down by providing a modest three-cell battery. If you're lucky, a battery of that size will last 2.5 hours on one charge, judging from PC World Test Center results. So if you want to stay productive on your netbook while traveling, you'll probably need to buy an oversize, extended-life battery to power your machine.

The best-selling Acer Aspire One is a case in point. As configured, this neat little machine sells for roughly $300; but if you want it to run longer (surviving a cross-country flight would be nice), prepare to shell out another $100 for an optional six-cell battery that effectively doubles its duration. The bigger battery adds a little more weight to the system, too: There's roughly a 0.3-pound difference between three- and six-cell netbook batteries, but the longer life between recharges is worth the extra investment.

So far, Asus has earned the laurels for producing netbooks that have the longest battery lives. One reason for its preeminence in this area is the company's inclusion of an eight-cell battery. Another is its practice of offering both a standard and a larger battery with its netbooks, letting users choose the right battery for their needs.

You get one other bonus when you buy a bigger battery, in some models at least: The double-stuffed power source props up the netbook at a slight tilt, making ergonomic typing on the (usually) tiny keyboard a little easier.

New and Notable

Asus Eee PC T91 Touch You knew it was coming: a touch-screen tablet netbook. Think of this as a second take on the 8.9-inch, 901-series models that appeared in 2008. Like a full-size convertible laptop, this hybrid netbook has a 180-degree rotating lid. The $500 T91 Touch will also offer built-in GPS functionality, a TV tuner, and an FM transmitter for affordable, portable entertainment.

Cramped Keyboards

When you read that a netbook's keyboard is 88 or 92 percent of a full-size QWERTY keyboard, you can pretty much ignore the numbers. The layout and arrangement of those keys counts almost as much as the size of the individual keys. To see whether the layout and shape of a given keyboard will work for your fingers, you need to do some hands-on testing at a store. Of course, bigger keys are better for beefy digits—and netbooks that have 10-inch screens tend to offer the larger keyboards.

That's probably why I keep returning to the HP Mini 1000 or the business-minded Mini 2140. The broad, flat keys on these HP netbooks are large enough for anyone to use, because HP opted to reduce the space between the keys rather than to downsize the keys themselves beyond what was necessary.

You may be surprised at how many netbooks come with serviceable, comfortable keyboards. Asus's Eee PC 1000H, for one, has a spacious setup that's well suited to touch typists. The machine is cozy and includes a slight valley between adjacent buttons. Even smaller netbooks with 8.9-inch screens can pack a few surprises. The Dell Inspiron Mini 9 and the Acer Aspire One, for example, house great keyboards—far bigger and more usable than their tiny frames would suggest.

Netbooks Without a Net

IF NAMES MEAN anything, it seems reasonable to expect a "netbook" to deliver wireless broadband and constant connectivity. But that's not quite the way things are today. Most netbooks do offer 802.11 g wireless, which is more than adequate for basic needs around an office, airport, or hotel room. And HP's Mini 2140 has 802.11n on board, so you're good for a little more wireless performance there.

This winter we've started seeing netbooks that offer integrated 3G wireless broadband. It sounds great, but there is one big (and tightly knotted) string attached: A two-year contract will run you somewhere in the neighborhood of $2000 over the life of the deal and will wed you to a device that you might desperately want to replace long before the contract expires. Here's some advice: If you crave wireless broadband performance, make sure that your netbook of choice includes a PC Express card slot. That way you can buy a wireless broadband card and plug it into whatever machine you need. PC Express slots are still rare on netbooks, but USB ports aren't. So even if you opt for a system that doesn't accommodate PC Express, you can add a USB 3G adapter, which you can then use with any computer you own.

Software Choices

Windows XP and some flavors of Linux are the primary operating system options available for most netbooks. Why Linux? Well, for starters, it runs a little leaner than XP, which makes it perfect for a netbook's anemic CPU. Second, it trims a few dollars off the price of these already-inexpensive portables (see "The Linux Option" on page 84 for more details about your Linux OS choices).

For the most part, Windows XP netbooks carry very little onboard software. A few machines we looked at came preloaded with OpenOffice.org—the free Java-based office suite—but few vendors care to match Lenovo, whose IdeaPad S10 provides a handy recovery application called CyberLink OneKey Recovery 6.0 for creating configuration backups, setting partitions, and establishing restore points. Almost all of the other netbooks we've examined require you to download the software you want to use on your own.

Fortunately, some sites make getting great netbook apps easy. The Google Pack Page (pack.google.com), for instance, offers a few top-notch (and extremely popular) free programs to download, sans spyware—everything from Adobe Reader to Real Networks RealPlayer to Google's Chrome browser (of course).

Here (from PCWorld.com Downloads) is a list of other free, downloadable applications that no netbook should be without: CCleaner (find.pcworld.com/62394), Digsby (find.pcworld.com/62395), Fresh UI (find.pcworld.com/62396), Paint.Net (find.pcworld.com/62397), Secunia PSI (find.pcworld.com/62390), Spybot Search & Destroy (find.pcworld.com/62392), and Spyware Blaster (find.pcworld.com/62391).

Expecting Windows Vista to work with a netbook's puny processor is like expecting a baby with one hand tied behind its back to push a Buick up a hill. Nevertheless, HP originally packaged its 2133 netbook with Vista Business Edition—and no one was terribly surprised when its unimposing Via C7-M processor ran like an out-of-shape sprinter in a swimming pool full of Jell-O. Now Sony thinks it can get its new Atom-processor-based VAIO P mini-notebook (which it insists on calling a "lifestyle notebook" rather than a "netbook"; see page 56) to run Windows Vista Basic. This is probably still a bit of a performance stretch, but advances in future netbook CPUs should eventually make either Vista or Windows 7 an acceptable option.

As we prepare to go to press, rumors are circulating that Google's Android OS will find its way into netbooks this year. We'll just have to wait and see.

Work or Play

The first generation of netbooks targeted nonbusiness consumers—especially students. After all, you can stuff one of these affordable task-specific portables in a bag, and it can take a beating. But machines of this class make sense for corporate users, too. Why lug a huge laptop through the halls of an office complex when all you need is a good keyboard and a wireless connection? Such thinking has led vendors to divide netbooks into business and consumer subcategories.

Corporate netbooks pack more premium components than their consumer counterparts. HP's rugged Mini 2140 comes with 802.11n Wi-Fi instead of the usual 802.11b/g. A built-in accelerometer protects the hard drive if the system is dropped, and a spill-resistant keyboard keeps it dry. Asus's N10Jc was the first mini-notebook to include a discrete graphics processor (nVidia's GeForce 9300M GS) that the user could toggle on or off. Of course, premium gear is expensive, and corporate netbooks command prices above $600. »

New and Notable

MSI Wind U115 Can't decide between a netbook with a solid-state drive and one with a beefy hard disk? Then how about getting one that has both? In MSI's latest Wind, a small but speedy solid-state drive hosts the OS and programs, while the hard-disk drive provides space for file storage. The Wind U115 boots quickly; and when you don't need the hard drive, you can disable it to increase your unit's battery life. We didn't have exact pricing at press time, but it should cost less than $600.

The Next Generation

Netbooks won't stay as they are for very long. By the end of the year, they will have emerged as a major computer category, with diverse options to augment similar basic features.

Sony's new $900 VAIO P, for instance, relies on a 1.6-GHz Intel Atom processor to run Vista Basic and gives users an 8-inch screen (a little smaller than a DVD case) to work with. The company's marketing people may cringe when you call it a netbook, but it sure looks like one. Another company pushing the Atom CPU to new heights is MSI, with its X320—a 13-inch portable with the style of a MacBook Air but a price of only $1000.

Other chip makers hope to get in on the ultraportable action, too. nVidia has been making some noise about its Ion platform concept, which will likely consist of a GeForce 9400M GPU married to an Intel Atom CPU on a tiny motherboard. The Ion has performed well on basic tests, but who knows whether it will gain any traction with vendors (or whether Intel will ever support the idea of a different company's chip set working with its Atom CPU)?

Meanwhile, AMD is aiming for yet another tweener category of laptops: ultraslim and affordable. The company's Athlon Neo processor is designed to run reasonably powerful ultraportables that start in the vicinity of $700—just a hair more than the amount some companies are charging for their high-end netbooks—and run as high as $1400. In AMD's case, the baseline configuration has a 1.6-GHz CPU working with ATI Radeon X1250 graphics processor on the motherboard. Though this arrangement is faster than Intel's integrated option, it hasn't set the world on fire yet. Partner a Neo with an ATI Mobility HD3410, however (as the company is proposing), and it can offer 1080p high-definition playback and reasonable game performance. AMD already has a proof-of-concept model shipping this March: the HP Pavilion dv2, a 12.1-inch machine priced at $600 to $800.

Our focus on netbooks here shouldn't lead you to ignore the rest of the notebook market. With the economy in extended decline, prices for full-size laptops are sinking. You'll soon be able to find last year's gear in newer, cheaper notebooks. Toshiba plans to release a low-end all-purpose laptop, the Satellite L305, for around $550. And that machine will have an optical drive.

In short, no one portable is perfect for everyone—but you'll soon be able to find the perfect set of options for just about anyone. ●

The Linux Option

DUE TO THEIR underpowered Atom processors, minimal RAM, and (usually) tiny solid-state hard drives, netbooks generally don't do Vista. And though they can run Windows XP, they don't do it very briskly. Linux, on the other hand, runs extremely fast by netbook standards. And its low overhead helps keep the retail price low on these little machines. But not all Linux distributions are created equal, and not all netbook deployments of Linux are winners.

Each netbook vendor deploys Linux differently on the systems it sells, and most vendors include a customized menu interface to streamline the user experience. At their best, as on the Dell Mini 9 netbook with Ubuntu, these interfaces manage to be unobtrusive and yet provide full access to the Linux operating system underneath. When they're more obtrusive, they can restrict your mobility in the system, limiting productivity.

For your first netbook, unless you're already interested in Linux, you may want to go for a model with Windows XP preinstalled. The cost difference is usually minimal, and you can always install Linux on it later if you want to. If you are a fan of Linux, pick a device you like, regardless of the distribution it offers, and then install your favorite Linux flavor later.

New and Notable

EMTEC Gdium Liberty This Linux-based box has a roomy 10-inch screen with 1024 by 600 resolution. Under the hood, you'll find a modest 900-MHz STMicroelectronics Loongson CPU and 512MB of DDR2 memory—but where's the hard disk? You plug it in. The $400 Liberty will ship (in April) with a bootable USB storage key—the G-Key—containing Mandriva G-Linux and more than 50 preinstalled open-source applications, including OpenOffice and Firefox.

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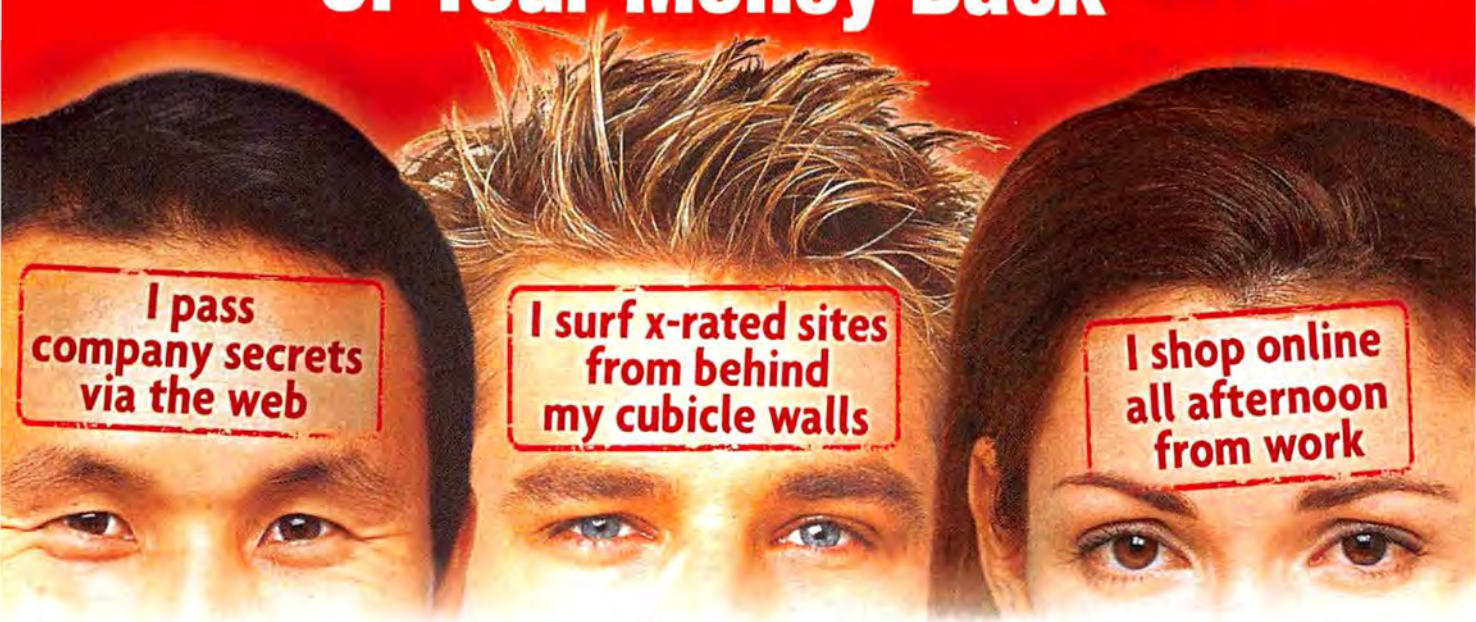

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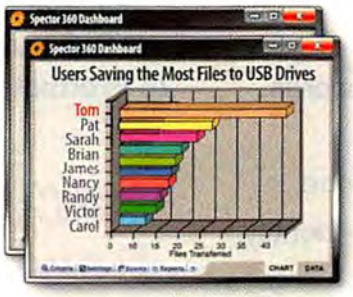

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From Blu-Plate to Blu-Chip

We tested ten of the latest players, including several cheapies and a few pricey units. Though you can get good to great high-definition pictures from any of them, we identified a few standout models.

Who gets the blu ribbon? >>

PCW Test Center

INTRODUCTION BY MELISSA J. PERENSON
PHOTOGRAPHS BY ROBERT CARDIN

Blu-ray Players

BLU-RAY'S STAR IS RISING FAST, for good reason. The high-def video format remains the best and most consistent way to take full advantage of a 1080p high-definition TV.

The ten current players we tested for this roundup illustrate why now is a good time to jump into Blu-ray Disc. Lower prices, a greater movie selection (1000 titles and counting), and a wider array of features make Blu-ray more attractive than ever. There's a reason why Blu-ray has enjoyed momentum since late 2008, even as the full impact of the economic downturn hit.

The Blu-ray players we reviewed a year ago (find.pcworld.com/62421) cost $400 to $1000. Now, players are also coming from Chinese manufacturers and other OEMs that specialize in midrange and budget-priced electronics. The trend has led to a more diverse selection of Blu-ray players, and has contributed directly to Blu-ray's breaching the $200 barrier—the point that often marks when a new technology has gone mainstream. The cheapest unit we tested this time was the $175 Memorex MVBD2510, with the $220 Sharp BD-HP21U close behind. Analysts expect to see a $150 Blu-ray Disc player this year.

When we evaluated our batch of ten players in the PC World Test Center, we noticed a surprising trend: Yes, an inexpensive model can produce great-looking high-def images. Howev-

Panasonic's Blu-ray Player Offers Superb Image Quality

	MODEL	PCW Rating	Performance[1]	Features and specifications[2]		Bottom line
1	BEST BUY Panasonic DMP-BD55K $400 find.pcworld.com/62450	85 VERY GOOD	• Overall: Superior • Color quality: Very Good • Detail: Superior • Brightness and contrast: Superior	• BD-Live • Up to 7.1 channels of audio • Dolby TrueHD and DTS-HD Master Audio decoding	• SDHC card slot • Plays AVCHD high-def camcorder video from SD Card	Though the DMP-BD55K costs a bundle, it delivers top-grade image quality and features for the price.
2	Samsung BD-P2500 $350 find.pcworld.com/62452	83 VERY GOOD	• Overall: Very Good • Color quality: Superior • Detail: Superior • Brightness and contrast: Superior	• BD-Live • Up to 7.1 channels of audio • Dolby TrueHD and DTS-HD High Resolution decoding	• Streams videos • Plays AVCHD, JPEG, MP3, and WMA • USB port	Images look terrific, but the player lacks DTS-HD Master support (except via bitstream audio output).
3	Sony PlayStation 3 $400 find.pcworld.com/62464	80 VERY GOOD	• Overall: Good • Color quality: Good • Detail: Good • Brightness and contrast: Good	• BD-Live • Up to 7.1 channels of audio	• 80GB hard drive • DLNA-compliant media server • USB port	Sony's game console is a great Blu-ray Disc player, too, but images routinely appeared too bright in tests.
4	Sony BDP-S350 $300 find.pcworld.com/62449	78 GOOD	• Overall: Very Good • Color quality: Good • Detail: Very Good • Brightness and contrast: Very Good	• BD-Live • Up to 7.1 channels of audio • Dolby Digital Plus and Dolby TrueHD decoding	• Plays AVCHD and JPEG • USB port	The BDP-S350 is an exceptional Blu-ray player that packs in all the most important features.
5	Insignia NS-2BRDVD $230 find.pcworld.com/62443	76 GOOD	• Overall: Good • Color quality: Very Good • Detail: Good • Brightness and contrast: Very Good	• Blu-ray Bonus View • Up to 5.1 channels of audio • Dolby Digital Plus and DTS-HD High Resolution decoding	• Plays AVCHD, MP3, and WMV • USB, ethernet ports (for future use)	The NS-2BRDVD offers terrific high-def visuals and excellent design, but its DVD upconversion is poor.
6	LG BD300 $350 find.pcworld.com/62447	74 GOOD	• Overall: Good • Color quality: Good • Detail: Good • Brightness and contrast: Very Good	• BD-Live • Up to 7.1 channels of audio • Dolby TrueHD and DTS-HD Advanced Digital decoding	• Streams videos • Plays AVCHD, JPEG, MP3, and WMA • USB port	LG's BD300 has all the features you expect; its images, however, aren't as good as they should be.
7	Memorex MVBD2510 $175 find.pcworld.com/62459	74 GOOD	• Overall: Good • Color quality: Good • Detail: Good • Brightness and contrast: Good	• Blu-ray Bonus View • Up to 5.1 channels of audio • Dolby TrueHD and DTS-HD High Resolution decoding	• Plays JPEG, MPEG-2, and WMV 9 • USB port	This no-frills player is an acceptable performer on Blu-ray, but it stumbles when upconverting DVDs.
8	Sharp Aquos BD-HP21U $220 find.pcworld.com/62448	73 GOOD	• Overall: Good • Color quality: Good • Detail: Good • Brightness and contrast: Very Good	• Blu-ray Bonus View • Up to 7.1 channels of audio • Dolby Digital Plus and Dolby TrueHD decoding	• Plays AVCHD, JPEG, and MP3 • USB port	Though this low-cost Sharp player has high-end audio decoding, it fails to deliver a consistently great picture.
9	Sharp Aquos BD-HP50U $290 find.pcworld.com/62451	70 GOOD	• Overall: Good • Color quality: Very Good • Detail: Good • Brightness and contrast: Very Good	• Blu-ray Bonus View • Up to 7.1 channels of audio • Dolby Digital Plus and Dolby TrueHD decoding	• Plays JPEG • USB port	Sharp's overpriced Aquos BD-HP50U player is slow, and clumsy to use. Its Blu-ray images are decent.
10	Sherwood America BDP-5003 $250 find.pcworld.com/62446	69 FAIR	• Overall: Good • Color quality: Good • Detail: Good • Brightness and contrast: Good	• Blu-ray Bonus View • Up to 7.1 channels of audio	• Plays Divx, JPEG, and MP3 • USB port	The moderately priced BDP-5003 lacks advanced features, but it produces adequate Blu-ray images.

FOOTNOTES: [1]We conducted performance tests via HDMI, with video output to a 50-inch Pioneer Elite PRO-FHD1 plasma TV at its pure/bit-by-bit setting. [2]Features lists are not exhaustive. Audio output depends on the audio encoding on discs and the chosen audio-output connection (HDMI, S/PDIF, coaxial, or analog). CHART NOTES: Prices are as of 2/18/09. All players output at 1080p over HDMI 1.3. All Blu-ray players can play standard DVD movies. All models support 24p output, which matches the frame rate of film (details on 24p at find.pcworld.com/56792).

er, the low-cost players all had serious issues with upscaling standard-def DVDs. If you plan to use your Blu-ray player for DVDs, too, you should choose a more expensive model.

Future Directions

The obituaries written for packaged media still appear to be premature. Blu-ray not only offers a tangible good that consumers still appreciate, but also provides optimal visual quality. Take, for example, what we saw from the LG BD300 and the Samsung BD-P2500—both stream movies from Netflix, but the image quality over our office's T1 connection was not even remotely comparable with that from a Blu-ray Disc.

Recent estimates from research firm Media Control GfK International project sales revenue from Blu-ray titles to increase this year by 150 percent, to $2.9 billion. That represents about 11 percent of the packaged media sold in 2009, nearly triple Blu-ray's piece of the pie in 2008. According to DisplaySearch, 10.7 million Blu-ray players (including Sony PlayStation 3 game consoles) shipped in the format's first two and a half years. In comparison, DVD had shipped 5.4 million players (per the Consumer Electronics Association's numbers).

Manufacturers are eliminating some of the more confusing points of differentiation among players, too. For example, 14 of the 19 players introduced so far for 2009 support BD-Live for interactive content. More players can now decode Dolby TrueHD and DTS-HD Master Audio. And besides LG's BD300 and Samsung's BD-P2500, look for other streaming-enabled players from LG, Panasonic, and Samsung to arrive this year.

1 Panasonic DMP-BD55K

At $400, the Panasonic DMP-BD55K is expensive. But its superb image quality, excellent design, and wide feature set make it tempting for shoppers with deep pockets.

This player received no grades worse than Very Good from our judges. In *Mission: Impossible III,* I noted that columns in the background of a scene looked sharp. *Cars* appeared so vibrant on this unit that the same scene on the Sony PlayStation 3 seemed washed out. In *Good Night and Good Luck,* one judge noted the player's pleasing handling of film grain. And in *The Phantom of the Opera,* images exhibited great dimensionality. As for upscaling standard DVDs to 1080p, it had no issues—in fact, it bested all comers in this respect.

The sleek unit measures less than 10 inches deep. The programmable remote's buttons are well placed, with the playback controls done in blue (but they're not backlit). You won't have any trouble figuring out the attractive setup menu. Although the menus don't elaborate on everything, they do explain the complicated audio options.

And while it is no record breaker, the DMP-BD55K is fast. It took just over a minute to start playing a disc, and it lagged only slightly when skipping chapters and barely at all when pausing a movie.

SONY PLAYSTATION 3: Good image quality, and games too.

BEST BUY

PANASONIC DMP-BD55K: Tops in image quality, features, and design.

SAMSUNG BD-P2500: Terrific Blu-ray and standard-def playback.

The player can take DivX, AVCHD, and other media formats. An SD Card slot sits in front (you can use it to view photos, but when I tried it, images stretched horizontally). This BD-Live model also has an ethernet port, but you must bring your own memory in the form of an SD Card. For audiophiles, it has 7.1-channel analog and HDMI audio-out, and it can decode Dolby TrueHD and DTS-HD Master Audio. *—Lincoln Spector*

2 Samsung BD-P2500

When you first turn on the $350 Samsung BD-P2500, you see a low-resolution, jagged Samsung logo. Fortunately, with one exception, it's the last disappointing thing you'll see.

Its images were simply amazing in our tests. Our grades included a few Goods, many Very Goods, and a lot of Superiors. Day-for-night scenes—shot during the day but processed to look like night—are especially hard to resolve digitally, as the scene has to look dark, but faces and details must be visible. Our tests have two such scenes, on the DVD of *The Lord of the Rings: The Return of the King* and the Blu-ray of *The Searchers.* In both I noted more detail, without loss of darkness, on this Samsung than I typically spy. Another judge said its colors were brilliant on the *Phantom of the Opera* Blu-ray, and that film grain looked as it ought to in *Good Night and Good Luck.*

The BD-P2500 is one of two players we've tested that can stream video from Netflix. (The other is LG's BD300. A third such player, Samsung's BD-P2550, is a Best Buy–only version of the BD-P2500.) With an ethernet connection and a Netflix account, you use a PC to queue up 480p and 720p streams, which you access via the player's Netflix option. But you can forget about great image quality when you stream. Our standard-def stream of *Gandhi* was extremely blotchy, and even our *Pan's Labyrinth* HD stream failed to measure up to the best that standard-def discs—let alone high-def ones—can offer.

This player supports BD-Live. Regrettably, the USB port is in the back, and it supports only BD-Live, not your own media files. Another gripe: The player decodes Dolby »

TrueHD but not DTS-HD Master Audio, a surprising shortcoming for such a feature-laden, expensive model. The remote also disappoints, as the playback buttons are placed awkwardly. They glow in the dark, though (no other buttons do).

The BD-P2500 was reasonably responsive, loading a disc in 56 seconds, but sometimes it lagged when skipping chapters. The on-screen setup menu is well organized and easy to use, although it fails to provide explanations. *—Lincoln Spector*

3 Sony PlayStation 3

Sony's $400 PlayStation 3 game console is one of the most capable Blu-ray players around. The 80GB unit has gigabit ethernet and supports both BD-Live and Bonus View.

In image quality, the PS3 is somewhat less impressive than it was when we judged it last year. The Panasonic and Samsung, and even Sony's BDP-S350, bested it in this roundup, rendering sharper images with superior color and contrast. In particular, images from the PS3 seem especially bright compared with those of the best dedicated players out today.

The console doesn't come with a remote control for video. Sony sells a remote for $25, and you'll want to buy it: Using two hands on the game controller to perform basic playback functions is ungainly and imprecise. Pressing the controller's triangle button produces a menu on the left side of the screen that provides quick access to certain settings and awkward access to software movie-playback controls. I found some operations, such as fast-forward, particularly frustrating.

The elegant pop-up info display is unobtrusive yet easily readable. (The best path to this display is to press the game controller's Select button.) You'll be invoking it a lot: The

The State of Extra, Connected Features

WITH THE JUMP to Blu-ray, people expect more extras with their movies than gag reels and deleted scenes. That means taking advantage of the medium in new ways—and making BD-Live live up to the hype.

On last year's players, BD-Live was a premium feature. This year, it's still an option, but an increasingly less costly one; in fact, most players coming out in 2009 support BD-Live. To do so, a player must have an ethernet connection and at least 1GB of flash memory, either on board or via a USB flash drive.

Though BD-Live promises interactivity and online connectivity, so far it has been off to a shaky start. Between the first BD-Live disc, *Walk Hard: The Dewey Cox Story* (released in April 2008), and others issued last fall, the features boiled down to a couple of lame Java games, access to barren message boards, downloadable clips, and—wait for it—trailers for other movies. Still awake?

Now, though, BD-Live is maturing to the point that you might want to try it out. Over 20 titles have shipped with BD-Live content. Social networking looks like the studios' magic bullet: Disney and Pixar, for example, are pushing interactivity. With the 50th-anniversary edition of *Sleeping Beauty*, Disney introduced Movie Chat, in which you text friends while watching the film, and Movie Mail, where you record a video message and embed it within a scene. Disney also offers access to an online trivia game, Movie Challenge; here, viewers compete in real time for Disney Movie Rewards points (credits toward discounted Disney gear). *Wall-E* has all of those features and heaps on even more, including four video games, a digital storybook, and fly-bys of the film's digital sets.

Warner has gotten into the act, too. *Batman: The Dark Knight* supports user-generated, picture-in-picture video commentaries. Just fire up your Webcam, and upload your two cents (and your impressive Bat-knowledge) to share with the whole world.

It's still early in the life of Blu-ray discs—and the rollout of BD-Live—but one thing is for sure: The pristine picture and dazzling audio aren't the only things that will determine the format's future. We expect to see more from BD-Live: All Twentieth-Century Fox titles, for example, now ship with a gateway to BD-Live functionality dormant on the disc; whenever that studio so decides, it can launch extra features, even if they're just trailers for soon-to-be released films. *—Darren Gladstone*

DISNEY'S MOVIE CHAT lets you converse with pals while you watch a film.

ALL BD-LIVE players have a USB port for adding a drive.

pop-up is the only way to figure out where you are in the disc, since the console lacks an LCD screen. Starting up a movie is pretty fast: Our test disc took just 3 seconds to physically load, and the total elapsed time from disc insertion to the start of the film was a respectable 24 seconds. *—Melissa J. Perenson*

SONY BDP-S350: Excellent player offers pleasing results.

INSIGNIA NS-2BRDVD: A nice bargain, with good high-def images.

LG BD300: Images looked okay, but should be better for the price.

4 Sony BDP-S350

The $300 Sony BDP-S350 is an excellent player, and it's well designed and easy to use, too. Our judges gave it scores of Good and Very Good for its image quality. When it upconverted DVDs to 1080p, I thought it had better colors than the PlayStation 3 did. I wasn't quite so taken with its colors on Blu-ray discs, which seemed duller than the PS3's in *The Searchers* and *Mission: Impossible III,* and just a tad off in *Cars.* I thought it had better gray and black detail in *Good Night and Good Luck,* where there was no color at all. Another judge disagreed, saying that *Good Night* lost some detail in the blacks, and that reds and greens were off in *Cars.* Even so, its images were pleasing overall; if you don't have another player side by side with it, you're unlikely to notice such things.

Like all BD-Live players, it has USB and ethernet ports, but they're limited to BD-Live capabilities (and firmware updates). It can decode Dolby TrueHD and Dolby Digital Plus audio.

Sony's menu design, which I find pretty but difficult to use on the company's TVs and PlayStations, works better here, probably because Blu-ray players have inherently simpler menus. The menu also offers good explanations of the features.

The remote control is well designed, and it felt comfortable in my hand, but it is neither programmable nor backlit. The player is reasonably responsive to commands; it loaded a disc in 63 seconds. I noted a slight lag when pausing playback, and a longer one when skipping chapters. *—Lincoln Spector*

5 Insignia NS-2BRDVD

The $230 Insignia NS-2BRDVD, the Best Buy chain's house-brand Blu-ray player, is your typical glossy black box, with a glowing blue Blu-ray Disc logo, playback buttons on the front, and a large, easily readable display. The long and thin remote, however, is anything but typical—and more important, it's intelligently designed. Frequently used buttons are all easy to reach, and the playback controls glow in the dark. Unfortunately, Fast Forward, Rewind, and Skip aren't logically arranged, and I often pressed the wrong button by mistake.

The remote's Setup button takes you to a well-organized and attractive menu. The menu sometimes explains the choices, but that doesn't happen nearly as often as it should: For instance, it offers no explanation for the audio options.

The NS-2BRDVD bombed in upconverting standard DVDs to 1080p: In both *The Lord of the Rings: The Return of the King* and *The Phantom of the Opera,* images looked dull and muddy, with a distinct lack of detail. In contrast, on Blu-rays (at their native 1080p resolution) the player performed superbly, our panel awarding marks of Very Good and Superior. One judge said that images looked soft, but she also praised the terrific contrast and skin tone. In the black-and-white *Good Night and Good Luck,* I noted the really good grayscale and the image's nice dimensionality.

This player can decode Dolby Digital Plus and DTS-HD High Resolution audio, but it lacks multichannel Dolby TrueHD decoding. It supports Bonus View, and it has ethernet and USB ports (a pleasant surprise). Insignia's Web site promises a firmware upgrade that will add BD-Live and USB-based multimedia playback. This model was reasonably responsive, too, loading a Blu-ray disc in 71 seconds. *—Lincoln Spector*

6 LG BD300

The $350 LG BD300 and the Samsung BD-P2500 are the only two Blu-ray models we've tested that can handle Netflix streaming. The capability requires ethernet, since the player has no Wi-Fi. You use a PC to queue up streams, which are then available via the player's Netflix option. Unfortunately, our HD stream of *Pan's Labyrinth* looked considerably worse than a standard DVD. The standard-def stream of *Gandhi* looked so bad that one judge joked it made her seasick.

Physical discs—DVDs as well as Blu-rays—looked much better. Our judges gave scores of Good and Very Good, but we still noticed some issues. For example, I thought *The Searchers* showed too much contrast, while another judge spotted artifacts in the sky. The BD300 did its best with the black-and-white *Good Night and Good Luck* and the animated *Cars,* and its worst when converting standard DVDs to 1080p. I noted in the DVD tests that the image didn't pop, while another judge complained that the colors appeared lifeless.

The BD300 took less than 40 seconds to load and start a Blu-ray disc. I saw no lag from the player when pausing a movie, and only a slight one when skipping chapters. The »

unit natively supports Dolby TrueHD and DTS-HD audio, too.

The on-screen setup menu is bright, colorful, and reasonably easy to use. (It would be even easier if it explained its options.) The remote control is fairly well designed, and it is programmable, but it doesn't glow or light up in the dark.

Other extras include BD-Live support, as well as a convenient USB port in the front panel for viewing pictures and playing music, plus storing BD-Live data. —*Lincoln Spector*

7 Memorex MVBD2510

At $175, the Memorex MVBD2510 is the least expensive Blu-ray player we've seen. Like the Insignia NS-2BRDVD, this unit did better on Blu-ray discs than on standard DVDs. Its Blu-ray results were mixed, however. Its best scores came on the Blu-rays of *The Phantom of the Opera* and *Good Night and Good Luck*. The *Good Night* scene looked pleasing to me; on the same test, another judge said that it had better contrast than the Sony PlayStation 3, but less sharpness. I liked how this player handled the colors in *Cars*, too. Overall, though, to me the images were often too bright. *The Searchers* was disappointingly rendered; one judge said the Memorex had less detail and "three-dimensionality" compared with the PS3.

The remote looks cool—in use it's anything but. The tiny buttons are poorly placed, with some important ones far from the midpoint, where your thumb is most likely to rest. Play and Pause are identified by small labels, rather than by the common symbols. Like the Insignia, the Memorex has a Resolution button on its remote for changing the output resolution, but in this case it doesn't work if you're playing a disc.

The on-screen setup menu is attractive, but the icons and

MEMOREX MVBD2510: Inconsistent quality, but a very low price.

SHARP AQUOS BD-HP21U: Image quality is mixed, and loading is slow.

text are small and it doesn't explain much. The menu is sluggish, too, with a noticeable lag between remote command and response—strange, considering that the unit was reasonably fast in responding to commands while playing a movie.

On the player's front is a USB port for enjoying your stored photos and music. (I noted some strange artifacting on the photos I tried, though.) The player offers no support for BD-Live interactivity. It can, however, decode Dolby TrueHD and DTS-HD High Resolution sound tracks. —*Lincoln Spector*

8 Sharp Aquos BD-HP21U

When you grab a movie to play on the $220 Sharp BD-HP21U, grab a book, too: This player takes an agonizing 2.5 minutes to load a Blu-ray disc. Fortunately, once the disc is playing, the player responds to the remote as well as any.

What do you see during playback? Our judges found extremes of good and bad. On our tests of both *The Phantom of the Opera* and *The Searchers* in Blu-ray, I noted that the Sharp wasn't, well, sharp. Our *Phantom* standard-def DVD didn't look too good, either—another judge said its images were dull and flat. She also found the faces too red in *The Searchers*. On the other hand, the player did very well on our *Mission: Impossible III* and *Good Night and Good Luck* tests. The latter showed notably good contrast, according to one judge.

Though this player has some drawbacks, I found it easy to use. The small, programmable remote control fit comfortably in my hand, and the important buttons were all easy to get to; it lacks a backlight, unfortunately. The on-screen setup menu is logically arranged and displays useful explanations, but the icons look low-resolution and amateurish.

As you'd expect for its price, the BD-HP21U is light on extras. It supports Blu-ray Profile 1.1 (which all players must), but not the fancier Profile 2.0 features (such as BD-Live interactivity). The machine natively supports Dolby TrueHD and Dolby Digital Plus audio. —*Lincoln Spector*

9 Sharp Aquos BD-HP50U

As the $290 Sharp Aquos BD-HP50U starts up, two annoyingly large and bright lights, showing the DVD and »

Legal Digital Copying Expands

WANT TO MAKE a legal portable version of your flicks? Just look for the Digital Copy logo on your DVD or Blu-ray Disc.

Digital Copy has come far since Twentieth Century Fox and Warner Bros. introduced it in late 2007. Last year it gained a common logo across participating studios, including Disney, Fox, Lionsgate, Paramount, Sony, Universal, and Warner.

Over 50 titles have shipped with a Digital Copy version; typically it's on an extra disc, but sometimes it fits on the same DVD as other content. Blu-ray Digital Copy editions are appearing, but to use them you must have a PC with a Blu-ray drive.

Thanks to studio support, Digital Copy is going gangbusters (gaining more traction than iTunes movie downloads in some cases), while Managed Copy, a similar concept that would function within Blu-ray's copy-protection scheme, remains mired in development hell. For more on how Digital Copy works, see find.pcworld.com/62458. —*Melissa J.Perenson*

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SHARP AQUOS BD-HP50U: Clumsy design, decent Blu-ray playback.

SHERWOOD BDP-5003: No frills, but offers passable image quality.

Blu-ray logos, begin to blink. Insert a disc, and the correct logo glows, as if to help you recall what kind of disc is inside (fortunately, you can turn these lights off). A huge flap, with windows for the lights, covers the front of the player. When you open the drive tray, the flap lowers automatically; but when you close the tray, this flap remains down, giving you something you could scrape your shin against.

The lack of attention to design extends to the setup menu. Whether you're controlling the main menu on the left or the submenu on the right is not always clear. Also vague is what buttons you should use to switch between the two.

Pop a disc in, and you'll have to wait nearly 3 minutes before it starts playing. Skipping a chapter takes about 5 seconds. (Most players do the same in less than 2 seconds—the difference feels like an eternity.) The remote control has limitations, too. You can't program it or see its buttons in the dark. The playback controls are big, but they're placed too low.

The BD-HP50U doesn't upconvert standard DVDs well. Our DVD of *The Lord of the Rings: The Return of the King* looked contrasty and disappointing; one judge said that the image seemed smudged, with indistinct detail. In *The Phantom of the Opera*, a woman's face was an absolute mess—the worst quality we've seen from an upscaled DVD. Performance improved with Blu-ray titles, where its grades were mostly Goods and Very Goods, with a few Fairs and Superbs. The same *Phantom of the Opera* scene on Blu-ray appeared very close to that rendered by the Sony PlayStation 3, with the BD-HP50U having slightly better contrast. On the other hand, in *The Searchers* I saw a fake sharpness that made things pop but sacrificed detail.

The player has no ethernet port, and therefore no BD-Live capability (though it does support Bonus View). The USB port in the back is only for firmware updates and won't work for photos or music. On the plus side, the player can decode both Dolby TrueHD and Dolby Digital Plus audio. *—Lincoln Spector*

10 Sherwood America BDP-5003

The $250, feature-free Sherwood America BDP-5003 lacks BD-Live and native Dolby TrueHD and DTS-HD Master Audio support. Of course, such omissions might be forgiven if the player could deliver outstanding image quality.

Its images aren't outstanding, but they are acceptable—most of the time. It did the worst on regular DVDs. In *The Lord of the Rings: The Return of the King*, the image (a night scene) was overly bright. On our *The Phantom of the Opera* DVD test, one judge noted that the faces seemed to "burn together." As for Blu-rays, one judge said that in *The Searchers* the image was softer and less three-dimensional than on the Sony PlayStation 3. For *Mission: Impossible III*, the same judge said that the colors seemed duller and the image appeared softer. Altogether, we gave the Sherwood mostly Good scores for Blu-ray image quality, with a few Very Goods and Fairs.

The player is responsive, loading a Blu-ray disc in a decent but unexceptional 76 seconds. It paused playback almost instantly, and we saw only a slight lag when skipping chapters.

The unit's design is fairly attractive and has physical buttons for movie playback. The on-screen menus are less appealing; they're also unintuitive, as they offer no explanations, and an action that you'd expect to show an option instead selects it.

I found the remote control lightweight and comfortable, but it is neither backlit nor programmable. The Play and Pause functions share a rocker button, making them easy to find. But the Menu and Pop-Up Menu buttons are difficult to find and press, located too high up from the core navigation buttons.

Unfortunately, our test machine's power button had a way of getting stuck; sufficient fiddling would eventually prompt it to work. After a couple of experiences like that, you're likely to give up on that button and use the remote's energy-wasting Standby button. A Sherwood rep told us that ours was "the first report of this problem." *—Lincoln Spector*

Blu-ray on the PC: A Slow Start

BLU-RAY DISC PLAYBACK on PCs appeared to be a no-brainer. Thanks to powerful processors plus high-resolution (even fully 1080p-capable) screens, as well as the increasing viability of putting a PC at the center of an entertainment system, Blu-ray seemed destined for great things on the PC. After all, you could play a movie and burn up to 50GB of data with the technology.

The reality has proven somewhat different. While we are seeing a larger percentage of desktops and entertainment laptops with Blu-ray Disc drives, the drives typically just read Blu-ray content, and cannot write to the discs. Blu-ray media remains pricey (25GB single-layer media ranges from $10 to $15, even if you buy a spindle; 50GB media costs $30 to $40), and burners are still expensive, too. For more about Blu-ray's limited growth on PCs, and why your next computer should have a Blu-ray drive, see find.pcworld.com/62460. *—Melissa J. Perenson*

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Here's How

Slash Phone Costs With Tech-Savvy Tricks

BY LINCOLN SPECTOR

By reviewing your phone bills for unnecessary options and by using VoIP for long-distance calls, you can reduce your telephone expenses.

WANT TO HEAR a shocker? My family ran up nearly $2700 in phone bills over the last 12 months. And that doesn't include new cell phones, or our landline-based DSL Internet access.

Why so much? We have two adults and two adolescents. That's four cell phones and lots of text messages. We also have two landlines—one for the family and the other for my home office.

Like just about everyone else these days, I need to save money any way I can, so I researched how to lower our telephone expenses. Here's how I did it, and how you can do the same.

Focus on Cell Phones

Cell phones are the biggest expense in our family—and probably in your household, too. Our bills tally more than $160 most months.

But before you can reduce your cell phone costs, you need to know what you're paying for. Start by examining your last cell bill, but it won't be easy—our most recent Verizon bill ran 34 pages and required a translator.

I found more information, in easier-to-read form, on Verizon's Web site. If you're a Verizon user, you can log in to the site with your user name and password. Click the *My Bill* tab, stay on the Bill Summary tab, and click the *Voice* link. A pop-up will identify how many minutes each family member used during that month, plus the total. You can check other past bills, as well.

This information led me to an important discovery: Our family was regularly using 500 to 600 anytime minutes per month—far less than the 1400 we were paying for. Right there was a way to save money. But how much? That wasn't on the bill.

This brings us to the translator I mentioned earlier. To obtain really detailed cost information, you have to call your carrier and slog through push-button hell until you reach an actual, knowledgeable human being.

The human being I reached (who was very nice and who understood my need to cut expenses) told me that I would save $20 a month by going down to 700 minutes. She said that I could save another $30 by eliminating our unlimited texting.

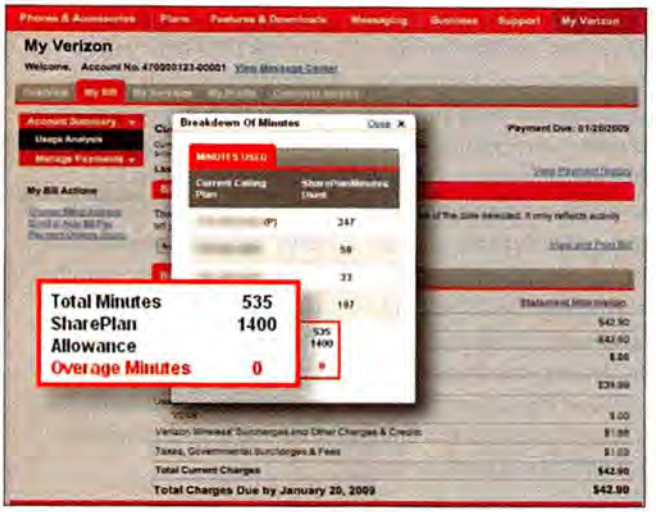
Taking $20 off a $160 telephone bill may not sound like much, but it's a start. You can also reduce your cell phone costs by attacking the usage charges that vary every month. Here are a few tips.

Keep an eye on the minutes: Most companies give you several ways to track the minutes you've used during a billing cycle. For example, Verizon users can dial #646 for a free text message.

Block music downloads and applications: Kids may learn that they can download music and play games on their phone, but they don't consider that it will show up on the phone bill. And anyone can accidentally access the Internet and incur a charge.

Shop for better rates: Comparing plans is easy, but moving an entire family to a new carrier can be expensive. If you've added family members to your current plan at different times, each phone number may have a different contract end date, which means that moving en masse to another carrier would incur multiple termination fees. For a family of four, the charges could run into hundreds of dollars. The solu-

ILLUSTRATION: JASON SCHNEIDER



IF YOU ARE NOT using your full allotment of minutes every month, you should consider stepping down to a cheaper monthly plan.

tion? Don't make changes (that is, stick with your current phones) until everyone's contract expires. Then everyone will be in sync.

Consider a prepaid plan: If you use fewer than 200 minutes a month, a prepaid plan is probably the best option.

Watch who you call: Toll-free (800) numbers aren't toll-free when called from a cell phone, except on weekends. And international calls, even to Canada, are outrageously expensive. But calls to other cell phones attached to the same carrier may be unlimited.

Make sure everyone knows the rules: Ban long, casual phone calls before 9:00 p.m. on weekdays (or whenever your service's peak time ends). Keep texting to a minimum, too. (I admit that we had to give up on that one.)

Keep the Landline?

Here's a big question: If you have cell phones, do you still need a landline? A lot of people don't bother with them.

And yet my family has two landline phones. We keep the home phone because my wife doesn't want to give it up and because she's reluctant to make our friends learn a new phone number for personal calls. Meanwhile, I need my home-office phone so that I can keep my work and home lives separate. I give my office number to all sorts of people that I wouldn't want to share my home or cell numbers with.

> Because most landline phones now depend on AC power to work properly, they tend to be less reliable than cell phones when the power goes out.

Despite what some folks think, you don't need a landline to be able to make 911 calls. Cell phones work just fine in an emergency. And if the electricity goes out, they are actually better than most of today's landline phones, which require AC power.

It's true that a landline gives you unlimited local, incoming, and toll-free calls, and lower per-minute charges in many situations. And another consideration is DSL, which comes over the phone line. If that's your source for Internet access, you'll have to switch either to cable service or to a so-called naked DSL account that doesn't involve analog phone service. Either alternative would be costlier. AT&T would charge me $10 a month more for the DSL package I have now if our house were stripped of landline phone service.

So if you intend to keep your landline, how do you lower its costs?

Examine your bill—both local and long distance—for extra, optional charges. If you're unsure what a charge means, don't hesitate to call the phone company and ask.

I found a few things on our bills that once must have seemed like good ideas—but no longer do. On our local bills, for instance, we were being charged $7 each month for something called WirePro, which is insurance to cover home wiring problems. As is true of an extended warranty on a new TV set, not having it is something of a gamble, but the money saved is worth the risk.

On the long-distance bill, we were paying $9 a month to lower our national and international by-the-minute fees. But even with the higher fees in place, we weren't making enough long-distance calls to total $9 a month.

That's $16 saved monthly, as long as our wires hold out and we don't go overboard on long-distance calls.

Into the VoIP

Luckily, we have another option for long-distance calls: Voice over Internet Protocol (VoIP). It's dirt-cheap, with nearly unlimited minutes.

Once too difficult and unpleasant to listen to, VoIP now offers improved quality and makes a great alternative to landlines or a good supplement to cell phones. And you're not limited to talking with other VoIP users.

Not that it's a total win-

PHONE POWER, a Voice over Internet Protocol provider, lets you use your ordinary landline phone in conjunction with an Internet-connected adapter.

win option. The audio is improved, but it still sounds worse than that of a landline. And you must either keep a computer on to make and receive phone calls or use special hardware.

Despite these various drawbacks, VoIP seemed like a good alternative to my landline office phone. I looked »

at two very different services.

You probably think of Skype as a free service for talking and instant messaging with other Skype users, possibly with video. That's all the free service does, but for a price Skype will connect you to telephones all over the world, and it'll give you a phone number so other people can call you.

If you don't phone internationally a lot, Skype's most attractive offer gives you unlimited calls within the United States and Canada for $3 a month, or $30 a year. Well, sort of: It isn't really unlimited. You get 10,000 minutes per month, which could be a problem if you're on the phone more than 6 hours a day. And it isn't really $30 a year if you want to use it to replace a landline. Maintaining a real phone number costs you another $30 a year, and voicemail $20 more. But that works out to an overall monthly average of less than $7—still a tempting rate.

Skype's Limitations

Unfortunately there are bigger issues. For one thing, Skype offers no 911 emergency support, though that shouldn't be a problem if you have a cell phone. In addition, you can't simply plug a regular phone into Skype. To get around that problem, you can install Skype's free software on your PC and plug in a microphone (or better yet, a headset); of course, you will have to keep your PC on all the time to receive calls. Alternatively you can buy a stand-alone Skype phone that connects to your computer (which means that you still have to leave it on) or to the Internet directly.

DON'T WANT TO talk to people through your computer? Several manufacturers offer VoIP phones that are designed to work with Skype's Internet-based service.

I tried two different Logitech USB headsets, one wired, the other wireless. Both worked. I also tried Belkin's cell-like Wi-Fi phone, which currently sells at Skype's site for $130. I liked it despite its quirks (it tends to make odd sounds as it finds and loses signals), but it doesn't work with hotspots that require Web authentication, such as at Starbucks coffeehouses.

Also, Skype's technical support is all but nonexistent. You don't get any phone or chat support, and the service doesn't seem to answer e-mail queries quickly, either—if it answers them at all.

The biggest problem for people who would like to use Skype as a landline replacement involves the selection of phone numbers. You can't transfer your existing number, and you may not be able to get a new number in your area code. But keep trying; on my second attempt, the service reported that it did have some phone numbers in my area code available.

Phone Power, another VoIP provider, offers a more landline-like experience than Skype. You can use your regular phone and transfer your existing phone number to the Phone Power system. But this service is nowhere near as cheap as Skype's is, and I found setting it up to be quite a challenge.

When you sign up, Phone Power sends you a gadget to daisy-chain between your modem and your router (you can plug it directly into the router if the preferred setup doesn't work). Then you plug your phone into the gadget and use the phone as you normally would. It includes voicemail (which you can have forwarded to your e-mail address) and 911.

IN ADDITION TO offering low-cost voice calling, Skype supports free video calls over the Internet—a nice perk that no landline phone company can match.

The best plan (3000 outgoing minutes, unlimited incoming) is $23 a month after the discounted first three months—considerably more than Skype, but less than a regular phone with voicemail and long-distance fees.

Setup Hassles

During my setup of Phone Power, I would have given up if not for the company's excellent tech-support staff. I talked to several support representatives as we struggled to get both the phone signal and my Internet connection working. They all proved to be both polite and knowledgeable, and were truly concerned with helping me fix these glitches.

Nevertheless, despite the phone number problem and the lack of support, I'm going with Skype for my office phone. Not only is Skype cheaper, but having an office phone that travels with my computer suits my work habits.

After all those changes, how much have I cut our phone bills? Halving the allocation of cell phone minutes saves us $20 a month. Dropping the landline extras is another $16. Switching to Skype would save me about $33. In the end, that's close to $70 a month, or over $800 a year. Not a bad reduction when you're trying to save money in this unpredictable economy.

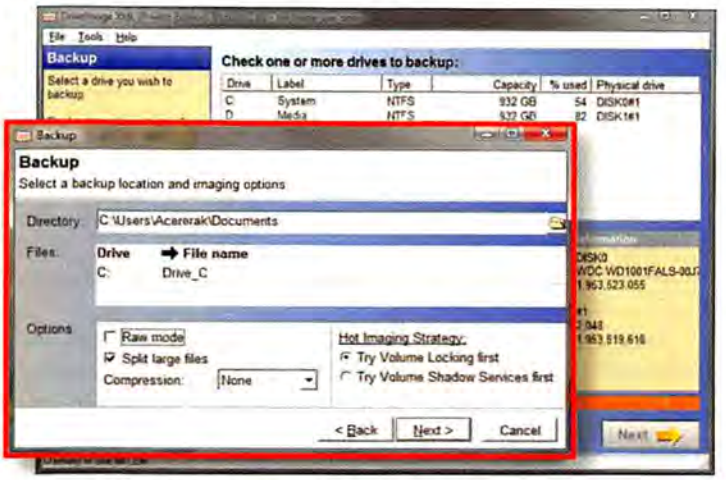
Copy Everything From Your Old Drive to Your New One

Whether you need to replace your existing hard drive or add a second one to expand your storage, the right software tools will make putting all your files where you want them easy.

BUYING A NEW hard drive with lots of storage space can give your PC a new lease on life and can improve your system's performance. But you need to make some decisions before you start transferring your data. I'll show you some smart tricks for moving your apps and files from their old home to their new one, so you can get back to work fast.

I'll assume that you've installed your new drive in your machine as a secondary hard drive (if not, see "How to Install a New Internal Hard Drive in Your Desktop PC" on page 100), and that you've successfully booted up onto your normal (old) Windows partition. The operating system has recognized the new, empty drive, and you've formatted the drive in Windows. Now how do you get your data from point A to point B?

You might think your final destination is but a drag-and-drop away—and it is, from a certain point of view. But if you want your new hard drive to be the primary storage device for your system, you need a suitable tool to handle the transfer. Moving the entire contents of your current drive to the new one isn't a task for Windows Explorer, by any means.



DRIVEIMAGE XML, a free download, lets you create an exact backup of your entire hard drive, which you can then copy to a new drive.

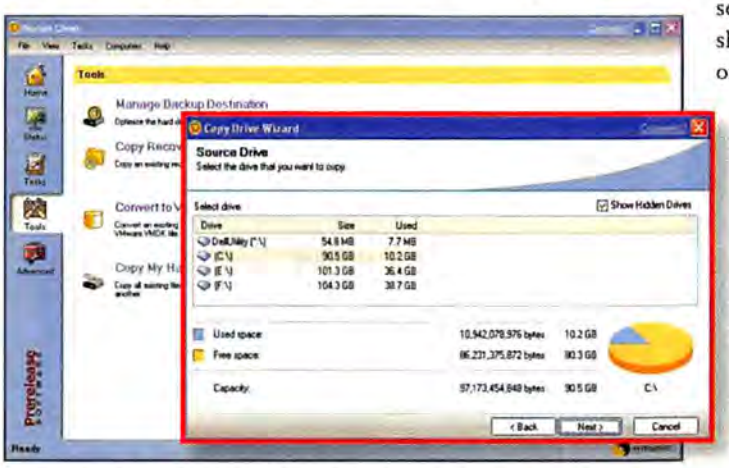
If you're satisfied with the storage you have, and you want to use your new drive as extra space for your PC, you can just drag and drop the files you want to store on your new drive. But if the files you're moving reside in their default Windows location (such as the Documents, Music, or Videos folder), your operating system will default to its original folders in all of the applications you run—unless you alter some of your XP or Vista settings to instruct the OS otherwise.

Set Up the New Drive as the Primary

You can't just drag and drop the contents of your primary hard drive to a new hard drive. For starters, Windows doesn't run in a void. The operating system itself is composed of a bunch of files on your hard drive. Also, depending on whether you've set up your machine to show Windows' hidden or critical operating system files, you may not be able to select and drag all of the files on the old drive anyway. In short, you will need some help.

One option is to buy commercial software. Norton Ghost ($70, find.pcworld.com/62353) does an admirable job of backing up files, and it has a cloning feature that lets you create a one-to-one replica of your primary drive. After creating this clone (outside the Windows environment), you can pull out your old drive, slap in your new drive, and get right back to work.

You can use a free application called DriveImage XML (find.pcworld.com/62355) to perform the same task as Ghost. It lets you create an archive of your entire hard drive in two simple files: an XML file containing the backup information, and a DAT file representing a compressed copy of all your files. You can extract this archive on a new hard drive by booting off a Live CD with DriveImage XML preinstalled.

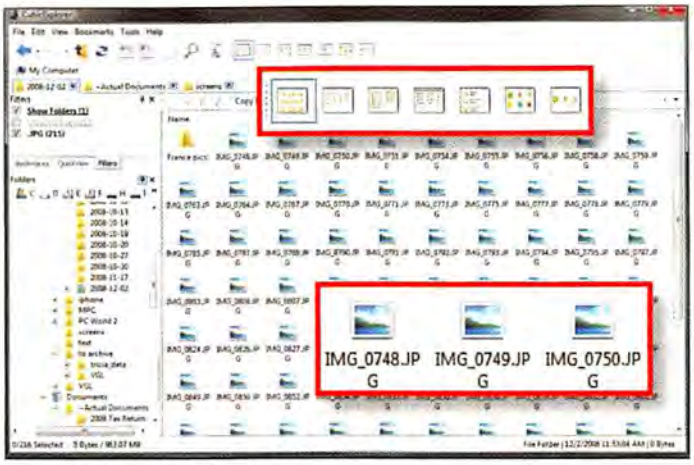


SYMANTEC'S NORTON GHOST is the ultimate drive-cloning software, making it easy to move all your files to a new drive with no mistakes.

Set Up the New Drive as the Secondary

If you're content with your primary hard drive's size and speed, and you want the new drive to supplement your existing storage setup, the job is easier. After installing the new hard drive, use an app like the free Cubic- »

Explorer (find.pcworld.com/62356) to transfer files. This Windows Explorer replacement has tabbed windows, bookmarking, and session-saving in its file management window. You can easily switch between different file directories without having to open lots of Explorer windows at once. A powerful filtering tool lets you drill down and view the exact file types that you want to work with.



CUBICEXPLORER LETS YOU filter specific files in and out of the Explorer window. In this case, we've selected only JPG files to appear. It's an easy way to segregate what you want to work on in a folder full of files of different types.

Once you've set up the folders on your new drive—Documents, Downloads, Videos, and so on—find the original location of each of those user folders on your XP or Vista drive, right-click, and select the *properties* option. In XP, look for the Target tab; in Vista, find the Location tab. Click that, and then look for the box that details where the folder currently resides on your primary Windows partition. Enter the location of the new folder on your new hard drive, and click *OK*. As easy as that, you have established the new hard drive as the primary location for each of Windows' default folders.

A final note: This trick works only for media-themed folders such as My Pictures and My Videos that are created for any new XP or Vista user. Unfortunately you can't use this technique to remap your Program Files folder. If only it were that simple!

—David Murphy

HANDS-ON ADVICE

How to Install a New Internal Hard Drive in Your Desktop PC

INSTALLING A NEW hard drive in your desktop computer is a fairly straightforward task that an intermediate user can typically accomplish in about 20 to 30 minutes. Follow these simple directions to get your new hard drive up and running quickly.

First, be sure to obtain a new drive that uses the same connector interface as your existing drive. In most current models, this will be a SATA connector. With your new drive in hand, disconnect your PC's power supply, and open up the case.

If the new drive is going to be your system's only hard drive, remove the old one by detaching the power and data cables from it, unscrewing the screws (usually two or four) that mount it to the case, and then sliding the drive out of its cage. Once the old drive is out of the way, screw the new one into the drive cage and attach the power and data cables just as they were on the old drive.

If the new drive is an addition to the existing one, leave the old drive in place and screw the new drive into an empty spot in the cage. Then use the SATA cable that came with your new drive to connect the drive to the motherboard's SATA port, according to the motherboard maker's instructions. Finally, attach an appropriate hard-drive power connector from your power supply to the drive.

Once you have connected your new hard drive to your motherboard and power supply, boot up the PC to confirm that the system BIOS recognizes the new drive. If it doesn't, recheck your connections and consult your drive and motherboard manuals. As soon as the system BIOS recognizes everything, close up the case and follow the advice in the story above to configure your drive.

BEFORE YOU HANDLE any of your PC's internal components, you should completely disconnect the PC from its external power source, by removing the main power cable from the power supply.

REMOVE YOUR OLD hard drive by unscrewing it from the drive cage in the system case. Once it's out of the way, slide in the new drive, screw it into the cage, and then attach the power and data cables.

PHOTOGRAPHS: ROBERT CARDIN

Manage Your E-Mail Safely While Driving

WHO HASN'T occasionally longed to check e-mail while sitting in the driver's seat during a commute or road trip? Of course, actually doing that can be extremely dangerous and (in some states) illegal. But a couple of Web-based voice services let you manage messages through spoken commands while you keep your hands on the wheel. Despite some rough edges, these services can pay off if you're patient.

We have covered Jott (jott.com) a few times in the past. You call a number and dictate a short message for up to 15 or 30 seconds, depending on your account level. Jott transcribes it and sends it to whomever you want. It's a useful way to send messages from any phone, hands-free, but it doesn't help you receive messages via your phone.

A newer service, Voice on the Go (voiceonthego.com), takes the concept further. For $6 per month, Voice on the Go lets you send and receive messages via voice command. You call in and listen to new messages. Though the service works with many types of e-mail, currently it doesn't support Exchange servers.

VOICE ON THE GO permits you to configure special alerts so that you'll know at once when important messages reach your inbox.

Listening to Voice on the Go's mixture of recorded prompts and a synthetic message-reading voice can be tiresome, but it's a quick, effective way to get e-mail messages through any dumb phone. Parts of the service still feel young: The Web interface is sparse, and it gives you no option to ignore signatures or quoted text when reading back. But international travelers will appreciate local dial-in numbers in a handful of major cities.

Voice on the Go records your outgoing messages as audio files that it then passes along to your recipients as e-mail attachments. Just ask recipients to watch for the messages; my mail reader thought they were spam.

At this writing, Voice on the Go lacks an option for text conversion similar to Jott's, but the company promises the feature (and Google Calendar access) for March 1. Check out the free Voice on the Go trial to see whether it fits your mobile message needs. The service has room to improve, but its core functionality is strong.

—Zack Stern

ANSWER LINE **ASK YOUR QUESTION AT FORUMS.PCWORLD.COM**

Can someone steal my Windows product ID?

—Ahmed Olatunde

OLATUNDE ASKED ME this question after reading my online tip "Find Your Windows Product ID" (find.pcworld.com/62354), so you might consider the present tip something of a sequel.

My first reaction to the possibility of Windows product ID theft was this: If a dishonest person found the opportunity to turn over a laptop and write down the number without getting caught, they'd probably just steal the whole computer.

But there is a practical consideration, too: A criminal really can't do much with just the product ID number. The very fact that the ID is on a sticker means that it's for an OEM version of Windows intended for one particular computer. Those aren't transferable to another PC.

What if you have a retail copy of Windows on your PC, and the thief uses software like Magical Jelly Bean's Keyfinder (find.pcworld.com/62357) to steal your product ID? I still doubt it would do them much good or you much harm. They would not be able to activate Windows without first calling Microsoft and offering an explanation.

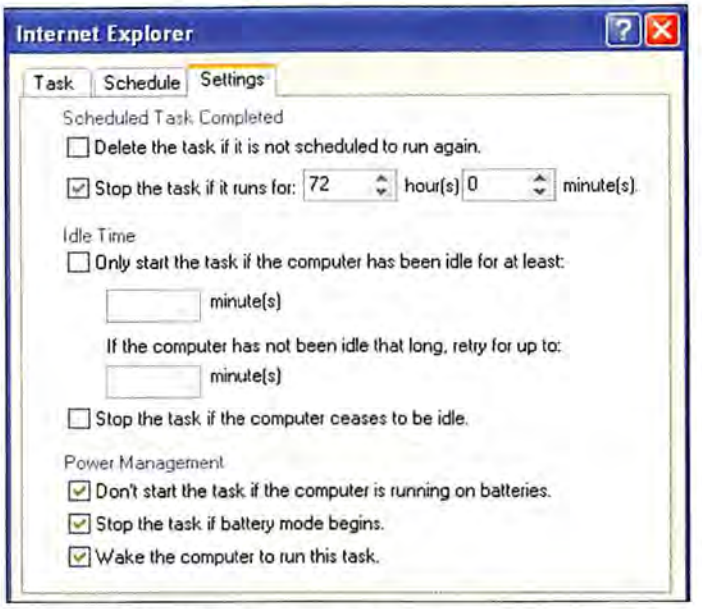
—Lincoln Spector

SHOULD WE HARBOR grave concerns about the fact that the product ID for our OEM copy of Windows XP Home Edition has gone on public display? Let's just say that we're not losing any sleep over it.

Teach Your Windows XP PC to Start Up Automatically

TIRED OF WAITING for your computer to boot up when you get to work in the morning? Try setting it to wake up or to power on just before you arrive. You can also configure your PC to launch your most frequently used applications automatically at boot time.

Some PCs can start up automatically on a schedule; this ability depends on the BIOS. At boot-up, look for the prompt to enter the BIOS, and then press the appropriate key. If your PC supports this feature, you'll adjust the settings inside, before loading Windows.



SCHEDULE AN APPLICATION to launch at an appointed time, and then select 'Wake the computer to run this task' to start your PC automatically.

Alternatively, set your PC to wake on a schedule within Windows XP. Open the Scheduled Tasks Control Panel and click *Add Scheduled Task*. Click *Next*, and select the application you want to open. Fill out the scheduling information that the wizard requests, and check the box marked *Open advanced properties for this task when I click Finish*. Click *Finish*, and then click the *Settings* tab. There, check the box marked *Wake the computer to run this task*.

Two different Startup folders govern items that launch at boot-up. Items inside C:\Documents and Settings\All Users\Start Menu\Programs\Startup will launch for every user of the computer. Items inside C:\Documents and Settings*Your-Username*\Start Menu\Programs\Startup will open only for your particular user account.

To place shortcuts to your favorite programs inside one of those folders, drag an application icon over while holding down the right mouse button, and let go; then select the *Create Shortcuts Here* option. Repeat the process with the other apps that you always use: your e-mail software, Web browser, instant messenger, and anything else.

To disable your startup items temporarily, hold down the **<Shift>** key while you boot. Delete the aliases to eliminate their automatic-launch feature permanently.

—Zack Stern

ANSWER LINE — ASK YOUR QUESTION AT FORUMS.PCWORLD.COM

The Show Desktop icon has vanished from my Quick Launch toolbar. How do I get it back? *—Rusparadox, Answer Line forum*

AS IS OFTEN the case with Windows configuration tricks, the correct answer to this question depends on whether you are using XP or Vista. But since I'm running a full-service kiosk here, I'll provide solutions for both operating systems.

In Windows XP, select *Start* • *Run*, type **regsvr32 /n /i:u shell32.dll**, and press **Enter**. A little dialog box will tell you that the process succeeded.

Unfortunately, the lost Show Desktop icon still won't be in the toolbar. To restore it, you have a choice of either rebooting or performing the following procedure (which, surprisingly, is actually faster than rebooting): Select *Start* • *Run*, type **"%appdata%\microsoft\internet explorer\quick launch"** (be sure to include the quotes), and press **<Enter>**. That will bring up the contents of the Quick Launch bar as a folder. Drag the *Show Desktop* icon (which XP re-created in response to the first command you tried) to the actual Quick Launch bar.

AFTER YOU'VE CORRECTLY entered the command string in Windows XP, you should see this friendly little pop-up message indicating that all is well.

In Windows Vista, download the file labeled 'ShowDesktop.zip' from HowToGeek.com (and thank you to those good geeks for showing me this trick). Then open the .zip file, and drag the only file it contains to the Quick Launch bar.

Want to learn more details and background about these Windows fixes? Check out the original discussion prompted by Rusparadox's question at our Answer Line forum (find.pcworld.com/62359). There you can join in the conversation or start a new topic to ask a question of your own.

Take the Frustration Out of Moving Old Content to a New PC

Ease the transition by eliminating duplicate files and rounding up product keys for your apps.

IF YOU'VE BEEN settled into your old PC for a few years now, chances are you have accumulated a whole lot of stuff. Moving all those files and programs to your next system will be quite a bit easier if you clear out some of the clutter before you begin. And of course, when the time comes to install your applications on the new computer, you'll want to have all of your product keys within reach. Here are a few tips to make quick work of these tasks.

Remove Duplicate Outlook Records With ODIR

The longer you use Microsoft Outlook, the likelier duplicate records are to creep into your calendar and contact list. Who knows why these things happen (I'm looking at you, ActiveSync), but they do.

I'm happy to report that there's a fairly painless way to purge the copycat records. Outlook Duplicate Items Remover (find.pcworld.com/62360)—ODIR for short—eliminates duplicate contacts, calendar entries, tasks, notes, and e-mail folders.

After installing the free program, fire up Outlook and find the newly added ODIR menu. Click it, and then choose *Remove Duplicate Items*. Select the folder that you want ODIR to scan; it will detect duplicates and relocate them to a subfolder (without actually deleting anything, so you're safe against accidental matches).

I've used this tool many times; it's fast, simple, and effective. ODIR is compatible with Outlook 2000 and later.

OUTLOOK DUPLICATE ITEMS Remover helps cut down on the amount of data you need to move, by deleting redundant entries.

Use VisiPics to Weed Out Duplicate Photos

Just as duplicate entries arise in Outlook, duplicate images show up in photo collections. The usual culprit is human error: You download the same batch of photos from your camera more than once.

In any case, duplicates are a nuisance. But a great freeware utility can find and remove them: VisiPics (find.pcworld.com/62361).

To get started, select one or more drives and/or folders that you want VisiPics to scan. Then set the Filter slider to 'Strict', 'Basic', 'Loose', or some setting in between. The slider position determines how hard the program will seek out differences in your photos.

VisiPics doesn't just look for duplicate file names. It examines the contents of each photo and hunts for similarities. The results appear in a column on the left side of the VisiPics window; just mouse over a photo and its duplicate(s) to see a preview. To mark a duplicate for deletion, click it. (The program can also move duplicates to a separate folder, in case you'd rather not delete them.)

I turned VisiPics loose on my My Pictures folder, which contains more than 4000 photos. The program took about 40 minutes to complete its scan, but it did an amazing job. I definitely recommend this useful app to anyone who has a large photo library.

THE FREEWARE VISIPICS utility identifies duplicate photos by examining the actual images, rather than looking at just the file names.

Find Product Keys for Installed Software

As part of my recent migration to a new PC, I had to find the product keys for the programs I wanted to reinstall. Easier said than done. (When, when will I organize this disaster area of a home office?)

Fortunately, Magical Jelly Bean's Keyfinder (find.pcworld.com/62357) quickly and efficiently finds the product keys for installed programs, and lets you print them for safekeeping. (Lincoln Spector refers to this same program in his *Answer Line* item on page 101. Like any powerful tool, it can be used for good or for evil.)

Keyfinder is compatible with all versions of Windows and can dig up the keys for your OS, Office apps, and other programs. On my PC it found keys for Windows XP and Office 2003, and for Command and Conquer: Generals (best RTS game ever, in my opinion).

Keyfinder is fast, free, and incredibly handy. You don't even have to install it on your system. I recommend it not just to people who are faced with migrating to a new PC, but to anyone who wants to keep a hard copy of important product keys.●

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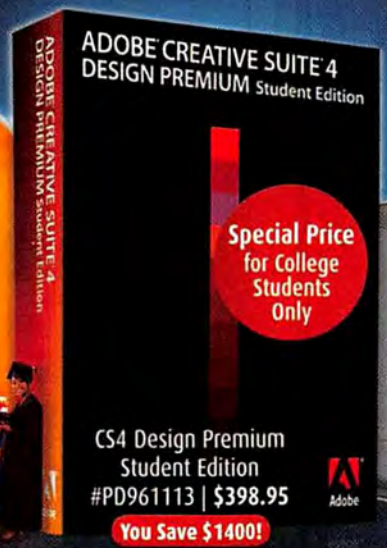

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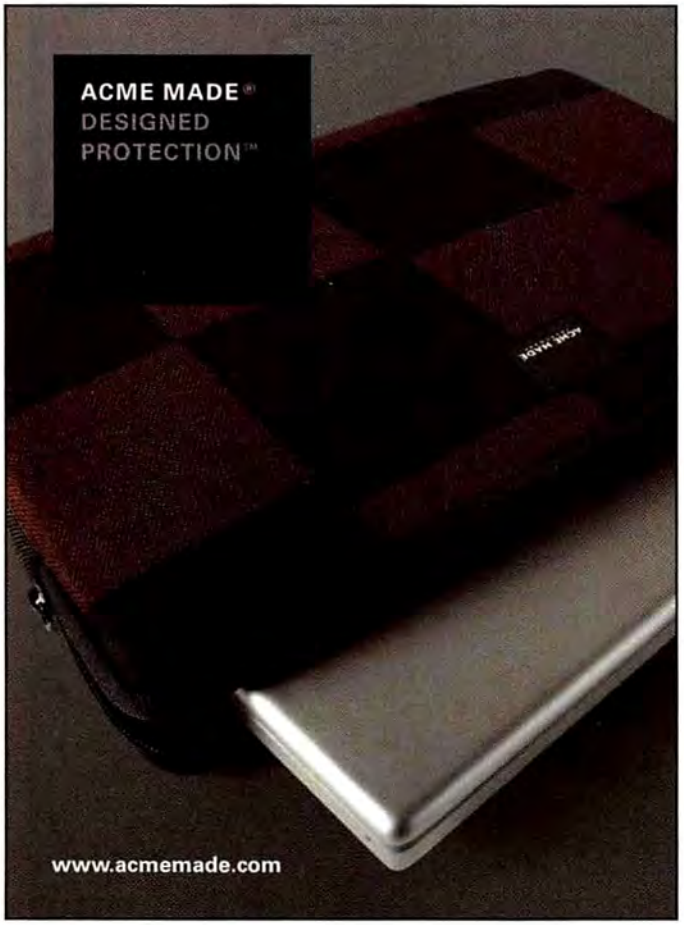

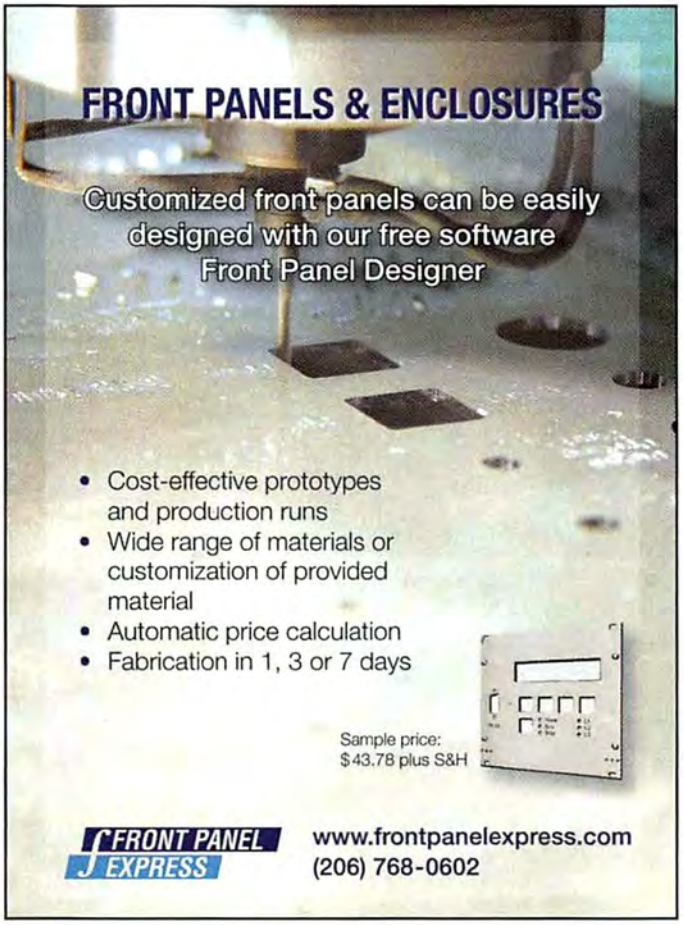

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PORTRAIT/BOOK MODE

Borrowing liberally from the OLPC XO-2's design, our concept can sit sideways to provide dual portrait screens ideal for reading e-books or getting more done at a desk. On the road, we'd want quick-resume technology, a solid-state hard drive with a drop sensor, and an embedded Gobi wireless-data chip that makes it easy to select any wireless carrier for accessing the Web or for using the device's built-in GPS features.

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