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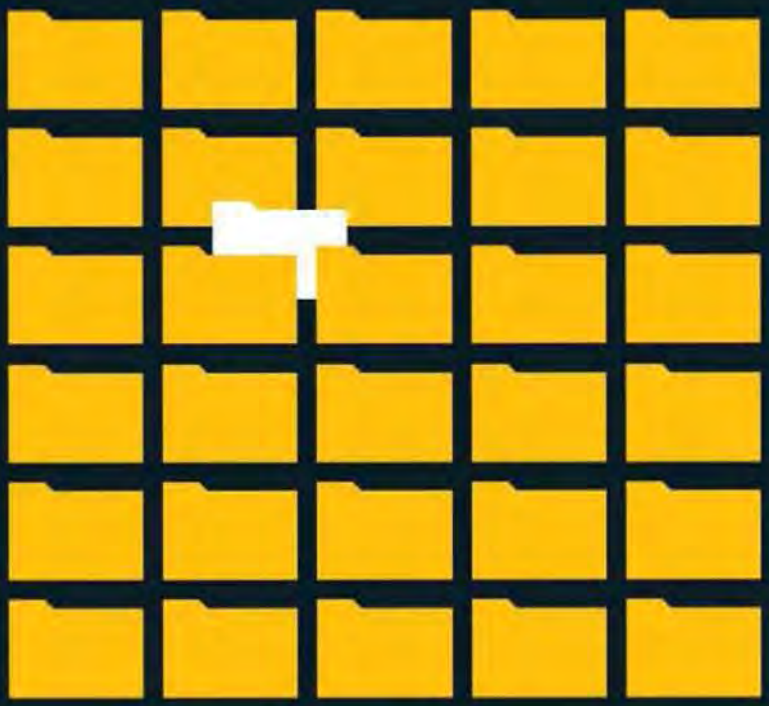

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STEVE FOX

When Smartphones Make Us Feel Dumb

> Go ahead: Embrace your indecision. All the data in the world may not give you much confidence when it comes to choosing a phone.

CAN INNOVATION EVER be a bad thing? My knee-jerk reaction is to say no: As editorial director of *PCWorld*, I know that innovation, particularly as it plays out in the technology marketplace, yields greater product choice for consumers. And choice is good.

Except maybe when it isn't. Take smartphones, for instance. Picking a new one has become so confusing that many prospective buyers are simply waiting on the sidelines.

Here's the problem. First, before you can even think about which smartphone you want, you need to decide on the carrier, generally AT&T, Sprint, T-Mobile, or Verizon. This choice is critical, since a smartphone is only as good as the 3G service your provider can deliver.

Next, there's the operating system. Do you want the iPhone OS, WebOS/Palm, BlackBerry, Android, Windows Mobile, Symbian, or something else? Keep in mind that it's not just the OS's capabilities you need to consider. You also have to think about the ecosystem surrounding the platform, especially whether it has the apps you want.

Finally, you have to research the phone itself, with its myriad considerations: brand, weight, size, keyboard, camera, memory, and so on. To make matters even more confusing, great new phones seem to appear every day, making buyers' remorse nearly unavoidable.

A Two-Year Sentence

It's tempting to say that the smartphone decision is similar to other digital purchases. After all, a typical buyer faces a sea of laptops, desktops, cameras, and HDTVs. But the phone decision comes with an added zinger: the two-year contract lock-in. Pick a bad netbook, and you'll regret it for a few months; pick the wrong smartphone, and in most cases you'll still be paying for it, literally, 24 months later.

Given the complexity of the decision, *PCWorld* is doing what we can to help. Phone guru Ginny Mies and her crew of reviewers do scores of hands-on phone evaluations each year (see, for example, *Top 5 Android Smartphones* on page 50, and our *Top 10 Cell Phones* list at find.pcworld.com/69547). Our wireless expert Mark Sullivan just finished an ambitious 13-city test of the major carriers, "AT&T Roars Back in Round 2 of Our 3G Wireless Network Speed Tests" (page 12). We post daily reviews of iPhone apps in our App Guide (find.pcworld.com/69548) and are getting ready to launch an Android App Guide as well (see "Ten Essential Android Apps" on page 46 for a preview).

Yet despite this wealth of available information, the smartphone decision continues to perplex. This isn't some theoretical crisis I'm writing about here—it's personal. I'm ready to replace my aging smartphone, but I just can't seem to pull the trigger. I think of myself as an analytical and decisive person; give me the relevant data, and I'll take appropriate action. Not this time.

To get an explanation of my dithering, I checked in with Patrick Noonan, a professor at Emory University's business school, whose academic field is decision making. Noonan gave me a pass: "Our brains work nothing at all like our computers do. To the extent that humans have an operating system, it's a simple heuristic engine shaped entirely by survival rules on the savannah, which is why all modern life tends to be perplexing and usually beyond our competence."

Noonan goes on: "We were shaped in an environment that didn't change much from century to century. And now a product life cycle lasts, what...a month or two? We are seriously outmatched by the world we ourselves created!"

Whew! I feel much better now. Instead of beating myself up about my smartphone-related indecision, I'll try to accept it as a natural consequence of 21st-century life. My new hero will be noted wit Oscar Levant, who famously remarked, "Once I make up my mind, I'm full of indecision."

Now that's a position I can really get behind. Or maybe not. ●

Steve Fox is editorial director of PCWorld.

ILLUSTRATION: TYRHEE PALIFKA

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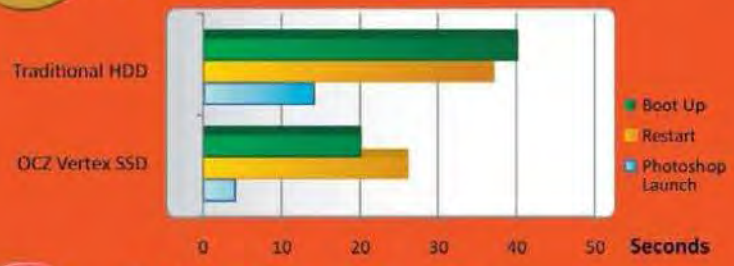

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PCW Forum

Apple's announcement of the iPad tablet in January unleashed a barrage of scrutiny and analysis. To read any article discussed in the letters below, browse to the appropriate Find-It number; and for more articles on the iPad, visit our Apple Product Center at www.pcworld.com/topics/apple.html.

iPad Views, Pro and Con

The content will definitely make or break this device ["The iPad's Five Best Surprises," find.pcworld.com/69502]. If we could get all of our hard-copy magazines on it at a much lower subscription cost, we would switch in a second.

RainyDayInterns, PCWorld.com forums

Despite Dan Moren's enthusiasm ["The iPad Isn't a Third Device, but a Third Revolution," find.pcworld.com/69503], I believe the iPad's sole purpose is to give Apple a device on which customers can view books and magazines—and thus provide an additional revenue stream for iTunes. Since iTunes already is a conduit for music, apps, TV, and movies, the only thing remaining to expand iTunes to is books and magazines.

It's that simple. It also explains the real reason why the iPhone and the iPad don't run Flash: Flash apps would bypass the iTunes apps revenue stream.

Hamilton Davies, Miami

The only reason for me to get an iPad would be to use it as a sketch pad. Otherwise, I can't imagine lugging something like that around when it is limited to apps in the iPhone app store.

jabba52, PCWorld.com forums

Regarding "Hands On With the iPad" [find.pcworld.com/69504]: Travelers buy paperback books rather than hardcover ones because of cost and size considerations. The Kindle, at half the weight and half the book price, wins that race. A netbook that is smaller and lighter than a laptop, yet does most of what a laptop does, wins over the iPad.

My sense is that iPad sales will be far smaller than anticipated, and that many buyers will later regret their decision. Consumers will not like the Swiss army knife that does nothing exceptionally well. No keyboard, no sale.

geek, PCWorld.com forums

The iPad is strictly a luxury, but I think Apple will sell a boatload of them—and netbook sales will suffer. The WAF (wife acceptance factor) will be huge.

bupunana, PCWorld.com forums

Windows 7, Continued

In your article "Fix Four Common Windows 7 Upgrade Problems" [February], you state that a person installing an upgrade version of Windows 7 must do it from inside XP or Vista. This isn't entirely true. If you have already formatted your drive and can't find your XP or Vista disc, there is hope for you.

Simply install a fresh copy of Windows 7, and when it asks for a product key, leave it blank. Then, from inside Windows 7, run the install routine again and this time put in your product key when it asks. This workaround was also in Vista, so Microsoft must not care if you upgrade your PC this way.

Rusty Bourque, New Iberia, Louisiana

More Windows Tips

Regarding "Essential Windows Tricks" [February]: If you use Microsoft Security Essentials, I recommend adding PC Tools ThreatFire for advanced heuristic detection and prevention, and perhaps a scanner such as Malwarebytes. *Then* you're good to go under Windows 7.

rcprimack, PCWorld.com forums

When navigating through a document or on a Web page, I nearly always can go directly to the top or the bottom of the item by pressing **<Ctrl>-<Home>** or **<Ctrl>-<End>**. A great timesaver for me.

Harry S. Rouse, Goleta, California

Regarding the FCC's push for 100-mbps broadband [find.pcworld.com/69522]: In 2020, when we have speeds 10 to 100 times faster than we have now, we'll wonder how we ever lived without it.

dk3d, PCWorld.com forums

Breaking a Botnet

I just read the story regarding the successful effort to bring down the Mega-D botnet [*Security Alert*, February]. As a computer user, for 14 years I was spared the incredible disaster of being infected with malware until one month ago. The infection took a reformat of my system to correct. I want to acknowledge the fine work of those mentioned—FireEye, Atif Mushtaq—as well as all those involved in the fight against this botnet and those whose mission is to undo or prevent hacking attacks from overtaking computer users throughout the »

ILLUSTRATION: HARRY CAMPBELL

world. Until a malware outbreak directly affects you, you cannot fully appreciate these efforts. Thank you very much.

markaz, PCWorld.com forums

Portable Hard Drives

"A Terabyte in Your Pocket" [February] mentions the problem of a USB hard drive that needs more power than a PC's port can supply, with a Y-cable being the only recommended solution. I tried that with my Western Digital Passport drive, which lacks a separate power port, and it was not enough, even when I connected the unit to two USB ports on my desktop computer.

The solution: a RadioShack USB power supply, rated at a full 1 ampere and the size of an egg. It handles all of the drive's power needs when used with a Y-cable. It costs $25 and it will run on any country's AC power.

KHFleischer, PCWorld.com forums

A Cheap Connection

Regarding netbook bundles ["The True Cost of Wireless Carriers' Netbooks," *Consumer Watch*, February]: I needed Internet access from my Verizon Treo smartphone but could not justify the additional fee for netbook connectivity.

So I bought a reconditioned netbook for $189, and now I connect using USB modem software via tether to my Treo. This allows me to obtain Internet connectivity on both the Treo and the netbook simply by paying Verizon for the Treo connectivity. Not buying a Verizon netbook enabled me to avoid having to sign up for a new two-year plan—so I continue to be a "free agent."

Racer67, PCWorld.com forums

The Right Photo Paper

In "Five Tips for Better Photo Printing Results" [*Here's How*, February], you state that the two most common varieties of photo paper are glossy and semiglossy (or "matte"). Actually, matte and semiglossy are rather different. Semiglossy (or luster) is semireflective. Matte paper is pretty much nonreflective and relatively smooth.

I think it's weird that many photographers work hard to create supersharp images and then turn around and print on matte or semiglossy paper, virtually destroying their hard work!

If folks are gonna use today's superior lenses, they should print on glossy paper to preserve all that sharpness.

Henry S. Winokur
West Bethesda, Maryland

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Good-bye Sluggomorbus

Hello SuperSpeed USB

Sluggomorbus Symptoms

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Forward

AT&T Roars Back in Round 2 of Our 3G Wireless Network Speed Tests

After a poor showing in tests last spring, AT&T's 3G network ranks as the top performer in our latest 13-city tests, with download speeds 67 percent faster than its competitors'.

BY MARK SULLIVAN

AT&T SAYS IT has upgraded its 3G network in the past eight months, erecting hundreds of new cell towers, improving its wireless spectrum, and souping up its cell sites nationwide. Results of recent 13-city performance tests suggest that the network has gotten significantly better.

In 3G performance tests we conducted in 13 U.S. cities last spring, AT&T's 3G network ranked next to last in average download speed at 812 kilobits per second. In tests we conducted in December 2009 and January 2010, AT&T's download speed averaged 1410 kbps—74 percent faster than before, and 67 percent faster than the average speed we recorded for the Sprint, T-Mobile, and Verizon wireless networks.

In our latest tests (versus the ones last spring), AT&T's download speeds tripled in New York City and increased by 40 percent in San Francisco. In both cities, iPhone users have criticized the carrier's network in the past.

The AT&T network's reliability improved, too. Last spring, PCWorld testers got a usable broadband connection with AT&T only 68 percent of the time; but more recently, they successfully connected to AT&T on 94 percent of their attempts.

Verizon Wireless, which performed best all-around in last spring's 3G network testing, and Sprint, a close second, performed well in our latest tests, too. The

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For a full account of our previous round of 3G service tests, see "A Day in the Life of 3G" (find.pcworld.com/69549). For more on smartphones, visit our Phones Product Center (find.pcworld.com/69550).

ILLUSTRATION: PETER & MARIA HOEY

download speeds we recorded for Sprint's network were nearly identical to those from eight months ago in the 13 test cities. Verizon's download speeds decreased by 8 percent overall.

We tested the T-Mobile 3G network for the first time in December and January; its data transfer speeds were generally competitive with Sprint's and Verizon's.

During December 2009 and January 2010, our testing partner, Novarum Inc., tested the download speeds, upload speeds, and reliability of four 3G networks—AT&T's, Sprint's, T-Mobile's, and Verizon's—from 20 locations in each of 13 U.S. cities (Baltimore, Boston, Chicago, Denver, New Orleans, New York, Orlando, Phoenix, Portland, San Diego, San Francisco, San Jose, and Seattle). In all, we ran more than 51,000 separate tests across 850 square miles of wireless cell coverage for 7 million wireless subscribers (see find.pcworld.com/69545).

Dramatic Changes

In our recent tests, AT&T increased its download and upload speeds in all 13 cities over last spring's numbers. In Baltimore, New Orleans, New York, Portland, and Seattle, its average download speeds in our tests more than doubled. Its 13-city average download speed (1.4 mbps) is as fast as many home broadband connections. None of the other three networks we tested had average download speeds of more than 1 mbps in our study.

WE MEASURED THE 3G networks in each of our 13 cities from 20 testing locations situated in and around the center of the city.

AT&T's upload speeds were a bright spot in its test results last spring, and the network continued to deliver the fastest upload speeds of the Big Four networks in our recent tests. AT&T's upload speeds increased by 41 percent to an average of 773 kbps. That's 339 kbps faster than the upload speeds we clocked from the second-fastest network, Verizon's, which averages 434 kbps.

The iPhone on AT&T

Our smartphone-based tests of the AT&T network told the same story as our laptop-based tests, but revealed the speed limitations of smartphones in general, especially in uploading data to the network.

The AT&T/iPhone combo showed the fastest average downstream and upstream speeds of the four carrier/smartphone combinations we tested, delivering the top speeds in more than three-fourths of the cities we sampled. AT&T connected the iPhone at an average download speed of 1259 kbps and an average upload speed of 215 kbps in our 13 testing cities. The iPhone clocked download speeds of at least 1000 kbps at more than 60 percent of our testing locations, with burst rates often exceeding 3000 kbps. We managed to obtain a reliable connection in 91 percent of our tests.

What Happened?

In a recent conference call with investors, AT&T head of operations John Stankey said the company had finished upgrading its network to HSPA 7.2 technology far ahead of schedule. "We have already turned up the 7.2 software on our 3G cell sites nationwide," Stankey said. He noted that, during 2009, AT&T added 1900 new cell sites and converted its network to the 850MHz band of the wireless spectrum.

These improvements probably account for the large speed increases we saw in our recent tests. "It is clear that at this time AT&T has the highest-performing network with the highest user capacity, based on our sample," says Novarum CTO Ken Biba, who conducted the tests. "With additional investment in more carriers and more HSPA 7.2 base stations [last year], AT&T has room for growth in demand," Biba says.

Verizon: Down a Bit

We measured Verizon's 13-city average download speed at 877 kbps, down 8 percent from its tested average last spring of 951 kbps. Its average download speeds decreased in seven of our testing cities since last spring, and in five of those cities (Chicago, New Orleans, Phoenix, San Jose, and Seattle), Verizon's average fell by 14 percent or more. »

3G NETWORK TESTS

13-City Performance Averages

AT&T clocked the fastest average upload and download speeds in both our laptop- and smartphone-based tests, along with strong reliability scores.

3G NETWORK	LAPTOPS			SMARTPHONES		
	Average download speed	Average upload speed	Average reliability	Average download speed	Average upload speed	Average reliability
AT&T	**1410**	**773**	94%	**1259**	**215**	91%
SPRINT	795	396	94%	851	145	92%
T-MOBILE	868	311	92%	719	134	93%
VERIZON	877	434	92%	1075	116	76%

NOVARUM CHART NOTES: Fastest results are in bold. All speeds are expressed in kilobits per second (kbps). Reliability is expressed as the percentage of our 1-minute performance tests in which the service was available, uninterrupted, and faster than dial-up speed.

In our tests last spring, Verizon was the top-performing network, offering the fastest overall speeds and good network reliability. But our latest results suggest that Verizon may not be keeping up with demand for wireless capacity in some markets.

In our recent tests, Verizon's average upload speed (434 kbps) was little changed from last spring (426 kbps); but in individual cities, the results showed more movement, falling by 21 percent in San Diego, while increasing by 34 percent in Denver and growing by 16 percent in New York.

As for network reliability, Verizon's score fell by 12 percent in Baltimore and San Diego from the spring numbers. Yet in Chicago, Orlando, Phoenix, Portland, and San Francisco, Verizon's reliability scores increased by more than 9 percent.

> AT&T delivered at least 1 mbps of throughput in over 70% of the tested locations; Verizon did so in only 40%, Sprint in 30%, and T-Mobile in just 20% of the locations we used in our tests.

Verizon promises its wireless customers typical download speeds of 600 kbps to 1.4 mbps, and in the vast majority of our tests it delivered. But Verizon also promises upload speeds of 500 to 800 kbps—and only New Orleans had an average upload speed above 500 kbps during our most recent tests.

The Droid on Verizon

In our Verizon/Droid combo testing, the Motorola Droid rarely approached Verizon's promised minimum upload speed of 500 kbps. In 260 testing locations in 13 cities, the Droid registered an average upload speed of just 116 kbps, the lowest average of any carrier/phone combination in our smartphone tests.

With regard to reliability, Verizon delivered an uninterrupted signal at reasonable speed in 76 percent of our tests, far worse than the 90-plus percentage scores of the other three carriers.

Download speeds to the Droid, however, were a very different story. The Verizon network's downlink to the Droid averaged 1075 kbps, near the upper end of Verizon's promised speed range and second to the AT&T/iPhone combo in our tests of service/handset performance.

Sprint Stays Steady

Sprint ranked first in our reliability tests eight months ago, and it did even better this time, raising its percentage of solid connections from 90.5 percent to 94 percent. The network scored perfect reliability marks in Baltimore, Portland, and San Diego, meaning that we got a solid, uninterrupted connection at 20 out of 20 testing locations in each city.

In this round of tests, the Sprint network registered download speeds of 795 kbps on average for the 13 cities—almost unchanged »

3G NETWORK TESTS

Speed and Reliability Results by City

Here are the download speeds, upload speeds, and reliability scores for each service provider in each of our 13 testing cities.

CITY	AT&T			SPRINT			T-MOBILE			VERIZON		
	Download speed	Upload speed	Reliability	Download speed	Upload speed	Reliability	Download speed	Upload speed	Reliability	Download speed	Upload speed	Reliability
Baltimore	**2036**	**1071**	95%	857	407	100%	703	285	90%	818	402	75%
Boston	**1756**	**888**	95%	942	448	95%	728	301	95%	888	396	90%
Chicago	**1568**	**831**	95%	747	384	95%	1047	270	90%	886	425	95%
Denver	879	**669**	90%	599	376	95%	**928**	293	95%	885	478	90%
New Orleans	**1665**	**801**	95%	785	418	95%	570	181	70%	1227	610	100%
New York	**1523**	**779**	95%	790	403	95%	1220	580	95%	1124	463	100%
Orlando	**1206**	**841**	95%	619	350	85%	860	284	95%	1147	477	100%
Phoenix	1190	**697**	100%	797	303	90%	**1201**	288	100%	585	407	95%
Portland	**1276**	**550**	100%	945	398	100%	1090	309	100%	796	398	95%
San Diego	**1228**	**700**	85%	962	449	100%	616	264	95%	671	314	75%
San Francisco	**1193**	**715**	85%	814	405	95%	650	239	85%	729	401	95%
San Jose	**1034**	**655**	90%	714	374	85%	745	444	90%	891	475	100%
Seattle	**1771**	**851**	100%	757	426	95%	929	303	100%	758	400	90%

NOVARUM CHART NOTES: Fastest results are in bold. Speeds are expressed in kilobits per second (kbps). Reliability is expressed as the percentage of our 1-minute performance tests in which the service was available, uninterrupted, and faster than dial-up speed.

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from the 808-kbps average we recorded last spring, and well within Sprint's promised range of 600 to 1400 kbps. Similarly, Sprint uploads averaged 396 kbps in our recent tests, up slightly from its 377-kbps average in the spring, and in line with the promised speeds (350 to 500 kbps).

Sprint says it has added about 11,000 cell sites to its 3G network since 2006, but it won't disclose how many of those were added in the last year. "As customer demand grows, we have to continue to upgrade our network on a cell-site-by-cell-site basis," says Sprint networks vice president Bob Azzi. "I think we've been doing a good job of staying ahead of that growth."

HTC's Hero on Sprint

In our tests of the Sprint/HTC Hero combo, we saw fairly consistent network performance across the 13 cities. Download speeds typically ranged from 700 kbps to 1000 kbps, for an overall download speed average of 851 kbps. That figure is well below the 1000-kbps or better average we recorded for the AT&T/iPhone and Verizon/Droid combos; Sprint delivered download speeds exceeding 1000 kbps to the Hero in just 30 percent of our testing locations.

The Sprint network managed upload speeds from 100 kbps to 200 kbps, for an average of 145 kbps—in line with the uplink performance of the other phones in our study. In our reliability testing, Sprint and the Hero established a solid connection in 92 percent of all attempts, the second-best mark we recorded on this measure.

T-Mobile: Major League

T-Mobile's 3G network delivered download speeds that were as fast as Verizon's and Sprint's in our tests, and it produced surprisingly speedy transfers in New York. Across our 13 test cities, T-Mobile's network had an average download speed of 868 kbps—very close to Verizon's average speed of 877 kbps—and an average upload speed of 311 kbps. T-Mobile tells subscribers that they can expect upload speeds in the "hundreds of kbps" as well as download speeds of up to 1 mbps.

T-Mobile clocked its fastest average download speeds in Chicago (1047 kbps), New York (1220 kbps), Phoenix (1201 kbps), and Portland

(1090 kbps). During one of our 1-minute performance tests in Manhattan, the T-Mobile network averaged a download speed of 3 mbps, as well as registered burst speeds of up to 3.5 mbps. Download speeds in the vicinity of 3 mbps typically occur only in 4G networks.

HTC's G1 on T-Mobile

The T-Mobile/HTC G1 combination established a solid connection between the network and the device in 93 percent of the attempts we made; that's the strongest reliability score we recorded for any of the four wireless service/cell phone combinations we put to the test.

But the T-Mobile network delivered an average download speed of only 719 kbps to the G1 in our 13 testing cities—the slowest average we saw—and it connected at speeds exceeding 1000 kbps in only 13 percent of our testing locations. Upload speeds were lackluster, too, at an average of 134 kbps.

Making the Call

U.S. consumers pay a lot for the convenience of mobile communications and computing. They spent about $4.8 billion on wireless devices and service in 2009, and will likely spend even more during 2010.

Regardless of the type of connected device you purchase, you'll almost surely end up paying more for the wireless service that connects the device than you will for the device itself. That's why choosing a wireless provider is a big decision, and an unwise choice can be a costly mistake. We hope our study gives you some real-world information to help you pick a wireless carrier that's right for you.

3G NETWORK TESTS

Which Smartphones Are Fastest in Which Cities?

We tested the AT&T network using an iPhone, Sprint using an HTC Hero, T-Mobile using an HTC G1, and Verizon Wireless using a Motorola Droid, to find out which carrier/smartphone combination had the fastest download and upload speeds in each city.

CITY	Best download speed	Best upload speed
Baltimore	AT&T/iPhone: 1686	AT&T/iPhone: 262
Boston	AT&T/iPhone: 1356	AT&T/iPhone: 242
Chicago	AT&T/iPhone: 1550	AT&T/iPhone: 229
Denver	Verizon/Droid: 1078	AT&T/iPhone: 193
New Orleans	Verizon/Droid: 1380	AT&T/iPhone: 216
New York	AT&T/iPhone: 1233	AT&T/iPhone: 220
Orlando	Verizon/Droid: 1257	AT&T/iPhone: 233
Phoenix	Sprint/Hero: 909	AT&T/iPhone: 211
Portland	AT&T/iPhone: 1327	AT&T/iPhone: 221
San Diego	AT&T/iPhone: 1075	AT&T/iPhone: 196
San Francisco	AT&T/iPhone: 1172	T-Mobile/G1: 147
San Jose	AT&T/iPhone: 1228	AT&T/iPhone: 210
Seattle	AT&T/iPhone: 1751	AT&T/iPhone: 230

NOVARUM CHART NOTE: All speeds are expressed in kilobits per second (kbps).

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Hachette Dumps Amazon $9.99 E-Books Model

THE FUTURE OF the $9.99 e-book is in danger. A major publisher, Hachette, is opting for Apple's agency model to sell e-books for up to $14.99 apiece, a company memo to agents revealed.

Following Amazon's public dispute with Macmillan in early February over e-book prices, Hachette wants to shift to the agency model—where publishers set prices for e-books, and retailers keep 30 percent of the sales.

HarperCollins made a similar move earlier. Its owner, Rupert Murdoch, says, "We don't like the Amazon model of $9.99...We think it really devalues books and hurts all the retailers of hardcover books...And now Amazon is willing to sit down with us again and renegotiate."

In the memo to agents, Hachette says that it will make less money on each e-book sale under the new model: "the author will continue to be fairly compensated and our e-book agents will make money on every digital sale."

So two of the five biggest publishers have denounced the Amazon model, and a third is pushing price renegotiations; the other two major publishers, Penguin and Simon & Schuster may soon follow suit.

Unlike Amazon, which buys e-books from publishers at around $15 and subsidizes them to sell for $9.99, Apple will let the publishers set e-book prices while Apple keeps 30 percent of the sales (as with its App Store).

Apple also announced deals with the five major publishers for its iBookstore.

Earlier, Amazon had retaliated against Macmillan, the first publisher to abandon the wholesale model, by removing the company's books from its inventory. Macmillan now advertises its books as "Available at booksellers everywhere except Amazon."

If Amazon loses its battle with the publishers, consumers will have to shell out several extra bucks apiece for their e-books.

Amazon's earnings grew by 40 percent in 2009, the company recently revealed.

—Daniel Ionescu

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CompareMyDocs.com: Group Editing

It's the curse of collaborative writing: You send your document to colleagues for feedback. Soon, you have e-mail responses from Tom, Dick, and Harry, each with its own comments and amendments, which you now have to reconcile. Or you can upload each of the versions to CompareMyDocs.com. This free service displays your original document with colored blocks that show your collaborators' suggestions. You can accept or reject their ideas, or hide or move comments. Once you're done, you can download the completed document. The site doesn't handle special formatting, like hyperlinks or images, but it works well for simple word files. comparemydocs.com

Babbel: Lingua Web

If you're lucky enough to be traveling to Rome, but you don't have the time for formal language lessons, try Babbel. The site offers interactive lessons in English, French, German, Italian, and Spanish for as little as $6.62 a month. In the Italian course I tried, a native speaker read three sentences slowly, while I saw both the Italian text and the English translation. On the next screen, the site asked me to match the Italian sentence to the right translation. Babbel may not help your pronunciation, but it's a fun way to learn vocabulary and grammar. Babbel.com

Genieo: Algorithmic News

The dead-tree newspaper format may be on its death bed, but that hasn't stopped people from re-creating the experience online. The latest attempt is Genieo, a free plug-in for Firefox or Internet Explorer on Windows systems. After examining your browsing history, Genieo builds a newspaper-like page filled with news tailored to your interests. Genieo's algorithm did a good job of figuring out what I'd been reading about. But if you develop a sudden interest in slack-key guitar, you'll have to start reading Web pages about it and hope that Genieo takes the hint. Genieo.com

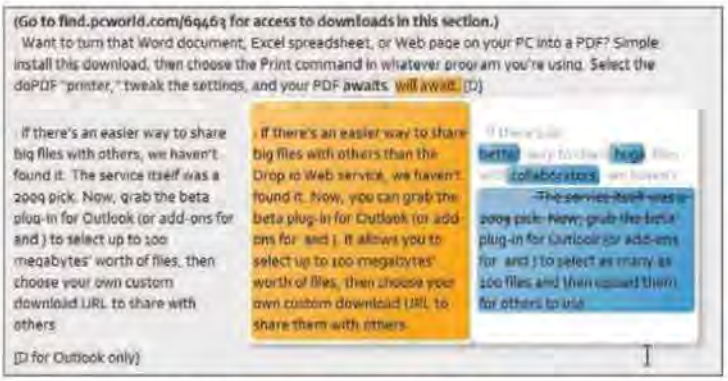

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ILLUSTRATION: JASON SCHNEIDER

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Study Finds Widespread Log-in Reuse

AN ANALYSIS of real-world online behavior indicates that far too many people reuse the same log-ins for more than one site.

Using statistics gathered from bank log-in protection software that currently runs on 4 million PCs, security vendor Trusteer found that

73 percent of users had employed the password for their online bank sites to access at least one other Website; 65 percent had used the same ID, and nearly half had reused both.

Recently, a note posted on the Twitter Website alerted users to an attack on its accounts that involved log-ins harvested from a network of scam Torrent file-sharing sites and reused on Twitter.

According to Trusteer—which markets a password enforcement system—the inability to create and remember multiple passwords and log-ins leads people to reuse the same ones.

At a minimum, the company says, users should create three separate log-ins: one for financial sites, a second for any site holding sensitive data, and a third for sites that hold nothing of value.

—John E. Dunn

GEEKTECH

nVidia Optimus: Switchable GPUs Done Right?

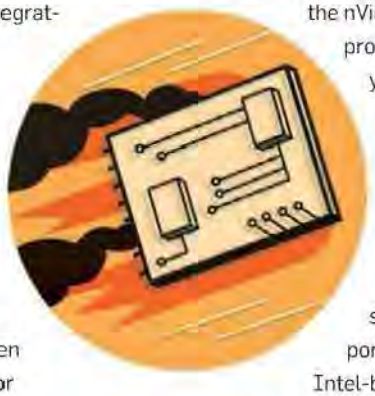
DOES YOUR LAPTOP have switchable graphics? You know—both an integrated graphics chip that sips energy and supports long battery life and a discrete GPU (graphics processing unit) that offers better 3D graphics and video performance? Laptops with switchable graphics have been shipping for years, but they haven't lived up to user expectations. nVidia hopes to change that with its new Optimus technology.

> Switchable graphics aren't new, but nVidia's Optimus technology could make it more practical.

The first notebooks with switchable graphics included a physical switch for toggling between the integrated and discrete GPUs; and to switch from one to the other, users had to reboot the system. More recently, you could change between the integrated and discrete GPU with software, using a small tool-tray icon or changing the power profile in Windows. The screen would then blank out for a few seconds, and you'd have crossed over from the discrete GPU to the battery-saving integrated graphics, or vice versa.

Less Obtuse

Optimus promises to simplify this process. When the system detects a 3D application or video that uses DirectX Video Acceleration decoding (as most do), the GPU simply turns on. When you're done with the 3D app or video, it goes back to the integrated GPU. The screen doesn't blank, and there are no buttons to hit or switches to flip. The technology promises to deliver the level of GPU power you need, when you need it, automatically.



In older switchable graphics setups, the integrated graphics and the discrete GPU were totally separate, and you had to instruct the OS to stop using one and start using the other. In response, the system essentially restarted the entire graphics software stack, switching from displaying the contents of one graphics system's frame buffer memory to showing the other's. A series of hardware switches called multiplexers (MUXes) supported hooking up the two graphics systems to the display, adding cost and complexity to the laptop's design.

Optimus is much simpler. When needed, the discrete GPU powers up in a split second and begins rendering the content of the screen, but the content does not go directly to the display. Instead, it gets copied over the PCI Express bus back to the integrated GPU's frame buffer memory. So technically, only the content of the integrated GPU's memory gets shown, and only the integrated GPU gets hooked up to the display. This prevents the screen from flickering or blanking out—as used to happen during a switch—and renders the MUXes obsolete.

Software Does the Rest

The driver detects certain apps and fires up the discrete GPU as needed. This feature relies on the nVidia drivers' having application profiles for the games or apps you wish to run, of course. Fortunately, the Optimus driver's cloud-based approach permits small application profile updates to be pushed to users automatically, without any need to download and install new drivers. Optimus supports most currently shipping Intel-based laptop platforms, including Core i3, i5, and i7 "Arrandale"; Core 2 Duo; and the new Atom N4xx "Pine Trail" for netbooks. Optimus-enabled GPUs from nVidia will appear in GeForce 200M, 300M, Ion, and future-generation laptop GPUs.

If it works as advertised, Optimus will be a huge boon to laptop users, in part because it may finally deliver on customer expectations. And without the MUXes needed in older switchable graphics, it's cheaper to implement, too.

We're now testing the Asus UL50Vf, one of the first laptops to feature Optimus technology. Stay tuned for our assessment of how well the new technology performed in that model.

—Jason Cross

Visit the GeekTech blog at go.pcworld.com/geektech for more hacks, tweaks, and tips.

ILLUSTRATIONS: JASON SCHNEIDER (LEFT); HARRY CAMPBELL (RIGHT)

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Printer Makers Clash Over Advertising Claims

BY JEFF BERTOLUCCI

FOR NEARLY TWO years, Kodak has promised consumers that they can save big bucks by switching to Kodak all-in-one inkjet printers. Unsurprisingly, the company has encountered some opposition. HP is the most recent competitor to challenge Kodak's claim that consumers can "save on average $110 per year on ink" by buying a Kodak printer.

According to both HP and an independent consulting firm, consumers would have to print four pages per day to save that much money with a Kodak printer—far more than most home users actually do. Last year HP lodged a grievance against the Kodak ads. In December, the Federal Trade Commission ruled that Kodak could continue the advertising campaign if it slightly changed the wording. As a result, Kodak's revised ad copy now reads: "Save on average $110 per year on ink based on just four pages per day."

HP is challenging Kodak's promises that consumers can save money by purchasing a Kodak printer. Who should you believe?

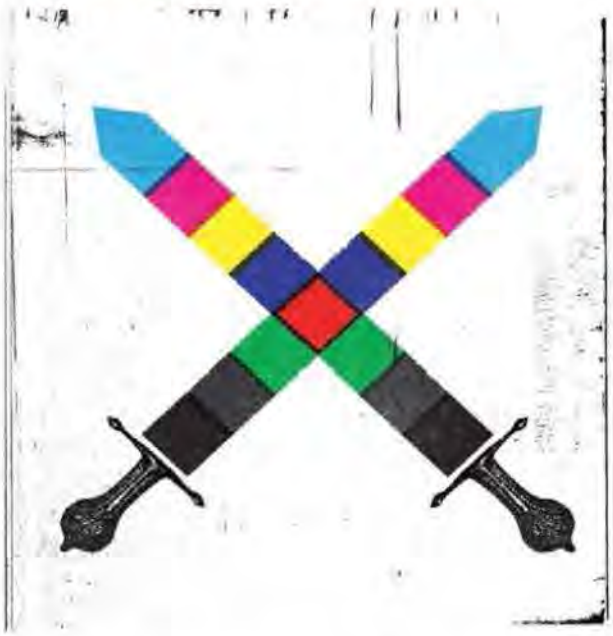

ILLUSTRATION: THE HEADS OF STATE

Ads Still Misleading?

Even with the tweaked text, however, Kodak's claims are still beguiling to consumers—according to HP, at least. "The average user in the United States prints about half of what Kodak is using as the basis for their cost-savings claim," says Andy Binder, HP Inkjet & Web Solutions marketing director.

But how do we know whether HP is telling the truth? For one thing, HP is basing its assertion on studies conducted by Lyra Research, a respected consulting firm in the printing industry. According to Lyra senior analyst Andrew Lippman, Kodak's cost-savings claims are far-fetched.

In fact, few consumers would achieve the promised cost savings. "You have to be printing 1500 pages per year—well above average for most people—to get the $110 savings that Kodak claims," Lippman says.

Kodak points out that its revised ads are essentially the same these days, albeit with a minor rewrite. "It's not anything different than consumers have always heard for the last three years," says Paula Balik, worldwide communications line manager for Kodak inkjets. The only FTC-mandated change that Kodak had to make, Balik says, was to move "four pages per day," previously buried in the ads' footnotes, closer to the headline.

Quality, Cost Concerns

According to Senior Editor Melissa Riofrio, who oversees printer testing for *PCWorld*, Kodak's inks may be cheaper than those of competitors, but the print quality on plain paper is not as good. On photo paper, the quality is excellent, but the money you save on ink is eaten up by the cost of photo paper.

As for the printers themselves, HP was at the bottom of the list among printer makers in our 2010 Reliability and Service survey (find.pcworld.com/69409); Kodak finished slightly higher. We asked our readers, among other questions, whether their printer had problems upon arrival, how satisfied they were overall with the device's reliability, and how well the company solved any problems that cropped up. Kodak printer owners said that they had good experiences with the company's tech support, but they gave the printers poor marks for reliability. HP received five below-average ratings—two in »

PCWORLD.COM

Shopping for an inkjet or laser printer that offers budget-friendly ink or toner costs? See our suggestions of several models to consider—as well as certain printers to avoid—at find.pcworld.com/69427.

reliability, three in service categories.

Perhaps Kodak's biggest offense, at least from its competitors' perspective, is its willingness to call attention to the high cost of printer ink, the industry's cash cow. "[Printer vendors] charge quite a bit for the ink, and discount the printer hardware," says Lippman.

The practice, in fact, has led to outrageous situations in which consumers could save money by buying a new printer rather than replacement ink for their current model. Last December, *PCWorld* contributor Ian Paul spotted a Deskjet D1660 inkjet model for just $30 on HP's shopping site (find.pcworld.com/69406). The printer came bundled with a black cartridge and a tricolor cartridge offering 200 and 150 pages of output, respectively. In contrast, the replacement-ink pack, which promised a slightly higher yield (165 pages) for the color cartridge, cost $32—two bucks more than the printer itself.

Kodak Hikes Ink Prices

Since entering the consumer printer market in 2007, Kodak has undercut the competition on ink costs. The company's advantage may be shrinking, however, as it recently raised the prices for its new line of cartridges.

But the change isn't all that obvious to consumers. The company's new 10B black cartridge, for instance, costs the same as its predecessor ($10) yet contains less ink. And the new 10C cartridge is $3 more than the $15 tank it replaces, but one Kodak ad implies that consumers are getting a better deal than before: "Now prints 10% more pages," the text reads. The ugly truth? "The 10C color cartridge has a 9 percent higher cost per page, and the 10B black cartridge has a 25 percent higher cost per page" than the cartridges they replace, Lyra's Lippman says.

Even so, despite the cost increases on the new cartridges, Kodak remains the low-price leader. "There's no debate that Kodak's ink is cheaper on average," Lippman adds. "The debate is over how much you can potentially save."

SKEPTICAL SHOPPER GINNY MIES

Score Deals With Your Mobile Phone

Bargain hunting can be a wearying experience, but these six mobile apps will save you time and money.

SMARTPHONES ARE costly investments, but they can save you money, too. Did you know that you can use your phone as a bar-code scanner while you are out shopping? Or that you can find in-store coupons through your phone? Dozens of free applications that can help you save cash are available across the major smartphone platforms. Here are the best of these no-cost, must-have apps.

ShopSavvy (Android, iPhone, Symbian): Let's say that you see a gadget you want, but you're fairly sure you spotted it at another store for a lower price. ShopSavvy allows you to scan the bar code of any product, using your phone's built-in camera. The program then searches for the best prices, locally and on the Internet. Instant comparison shopping has never been easier.

Dealert (WebOS): Currently, the Palm App Catalog is pretty sparse when it comes to shopping apps, but Dealert is an indispensable tool for Palm Pre and Pixi owners. With Dealert you can track specific products on many of the major deal sites around the Internet. The app takes advantage of WebOS's multitasking capabilities, too, as you can set it up to run in the background. It will also alert you via WebOS's notifications system when products you're tracking go on sale.

Frucall (all phones): Just because you don't own a smartphone, that doesn't mean you can't get in on the deal-hunting action. Frucall works with all phones—even if you don't have mobile Web access. The service uses a combination of technologies (SMS, Web, and phone calls) to deliver price-comparison data. You simply text or call in a product's UPC or ISBN, or enter the information at Frucall's mobile Website (www.frucall.com/m).

Point Inside (Android, iPhone): I often wish that Google Maps worked indoors as well as outside—especially in malls. Point Inside to the rescue: This app eases the pain of navigating the labyrinth known as the American mall by providing directories and maps for just about every major shopping center in the United States and Canada. And because Point Inside's maps are stored within the program, they will work even when no cell or Wi-Fi signal is available. Another perk: You can record the location of your car. You'll never get lost in a parking garage again.

Coupon Sherpa (iPhone): Sure, you can find quite a few coupon-wrangling apps out there, but Coupon Sherpa is by far the best. Before making an in-store purchase, you can search Coupon Sherpa for relevant coupons, by category or by store name. Then, at the checkout counter, the cashier can scan the coupon directly from your phone. If you prefer, you can send the coupons to your e-mail account, print them out, and bring them into a store.

Postabon (iPhone, mobile Website): Postabon is one of my favorite new deal-finding Websites, so I was happy to hear that it also had an iPhone app. Sort of a cross between Foursquare and deal-of-the-day sites such as Woot.com, Postabon lets community members list deals that they've spotted around their city—from retail-store sales to dining specials. Not an iPhone user? You can still find posted deals by going to the mobile version of the site (postabon.com/iphone) on your handset. Postabon says that it is developing an Android app, as well.

ILLUSTRATION: HARRY CAMPBELL

Cybercriminals are smart.

good thing we're smarter

Cybercriminals have gotten good. How good? Now, their attacks can lay dormant, fooling many anti-virus products. Then, when your computer is vulnerable... they attack.

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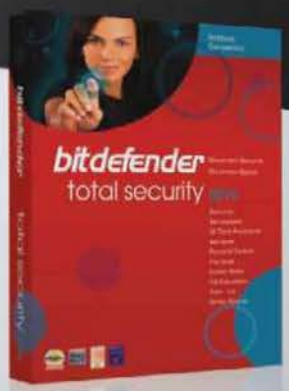

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Consumer Watch

ON YOUR SIDE

MARLA MIYASHIRO

WHEN MY DELL XPS 730 desktop system kept crashing, Dell offered to replace it. The replacement also had problems, so Dell offered to send another. When I realized that the PC would arrive while I was away, I called Dell to delay the delivery, since they'd charge me for a new PC if I didn't send the old one back within five business days. Unfortunately, the computer arrived just before I was to leave for the airport. I told the FedEx driver to take it back, and I called Dell. We arranged for FedEx to hold the PC and deliver it after I returned, but it was sent back to Dell during my vacation. Dell is convinced I still have it. Can you help me?

Mark Miller, New Fairfield, Connecticut

OYS responds: After we contacted Dell about Miller's issue, a company representative got in touch with him directly. Dell has discontinued the XPS 730, so the representative sent Miller an Alienware Area-51, which has a faster CPU and a better video card.

If you need something delivered before or after a certain date, we recommend that you go over the shipping schedule with the vendor and later reconfirm it. Ask the company to notify you as soon as your item has shipped, and to give you a tracking number so that you can follow your package's progress online.

Hotmail Hindrance

G. Ashkan of Rockville, Maryland, contacted us when his Hotmail password stopped working and he was unable to sign in to his Hotmail e-mail account. Because his messages forwarded automatically to his BlackBerry, he could read e-mail and respond to it from there, but he could not access his account or address book from his PC. His attempts to reset his password failed, and the queries he e-mailed to Microsoft's Hotmail tech support went unanswered.

After we contacted Microsoft about Ashkan's problem, a Hotmail support representative called him and helped him reset his password and regain access to his account. We were unable to learn why Ashkan had been locked out of the e-mail account in the first place.

A Microsoft spokesperson advises Hotmail customers to have an alternate e-mail address and an updated secret question and answer on file to ensure

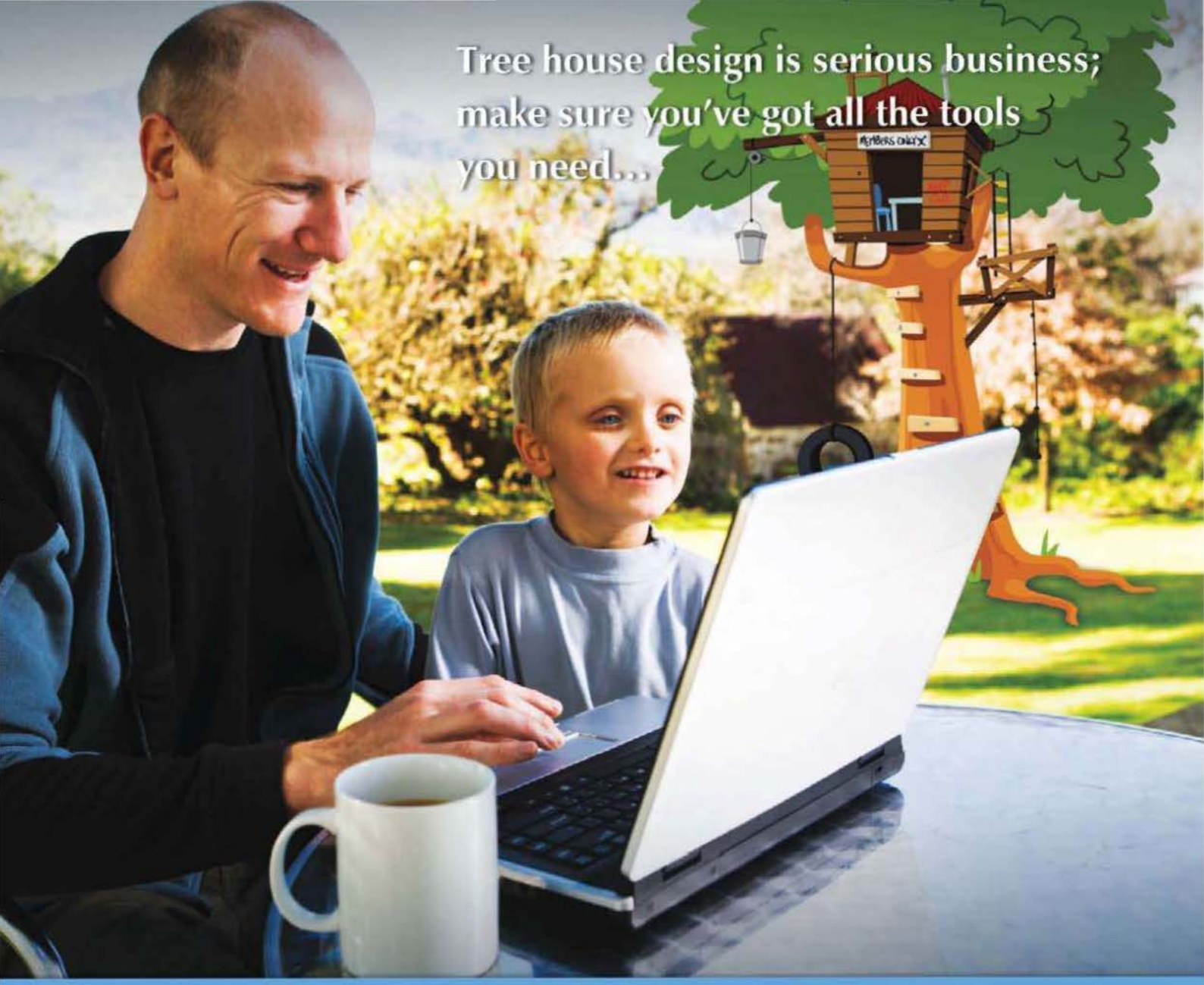
that they can easily reset their password if necessary. We recommend also storing a copy of your e-mail address book somewhere outside your e-mail account, such as in a file on your desktop or even as a printout to be stored near your computer.

Acer Notebook Recall

Acer, in cooperation with the U.S. Consumer Product Safety Commission, is recalling about 22,000 notebook PCs. An internal microphone wire under the palm rest can short-circuit and overheat, posing a burn hazard. The recalled models are the Acer Aspire AS3410, AS3410T, AS3810T, AS3810TG, AS3810TZ, and AS3810TZG. Not all units are affected.

Acer has received three reports of computers short-circuiting, resulting in slight melting of the external casing, but no reports of injuries. Consumers should immediately stop using these laptops and contact Acer to determine whether their unit is included in the recall, and, if so, to receive a free repair. For more information, call Acer toll-free at 866/695-2237 or visit www.acer.com.

ILLUSTRATION: HARRY CAMPBELL



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Should You Move Your Business to the Cloud?

BY JAMES A. MARTIN

Is it time to kiss desktop software goodbye? Here's what every small or midsize business should know about cloud computing.

THE TERM *cloud computing* refers to free or subscription-based services delivered in real time over the Internet. It may involve software as a service, such as Salesforce.com; file storage, synchronization, backup, or other utility computing, such as Dropbox; or infrastructure as a service, such as Amazon's Elastic Compute Cloud.

We queried dozens of small businesses about the cloud services they regularly use, and received multiple recommendations for Basecamp, Box.net, Google Apps, Google Docs, Highrise, QuickBooks Online, and Skype (see find.pcworld.com/69423).

Cloud Pros and Cons

Cloud-based services can dramatically reduce a small business's computing costs. For example, Microsoft Office 2010 Home and Business will cost $199 for a downloadable version and $279 for a boxed version; but Google Docs, which offers office productivity tools via the cloud, is free.

Other benefits include secure, reliable file storage and backup; ease of use; freedom from maintenance costs; and easier collaboration among colleagues in distant locations.

The biggest misgiving that most businesses have about the cloud involves security, according to two recent surveys.

In a December 2009 Forrester Research survey, 51 percent of SMB participants said that security and privacy concerns were their top reasons for not using cloud services.

It's not difficult to find instances of security breaches in cloud computing, of course. But you can't entirely eliminate risk from any computing environment. Here are some other commonly cited concerns about cloud computing.

Privacy: How much data are cloud companies like Google collecting about you, and how will they use that information?

Availability: Will your cloud service go down unexpectedly, leaving you without access to customer records, e-mail, or other critical information for hours or even days?

Data loss: What would you do if (as has happened on occasion) your online storage site shut down abruptly, giving you perhaps only 24 hours' notice to recover your data?

Data mobility and ownership: Will you be able to share data among different cloud services? If you decide to stop using a cloud service, can you get all of your data back? What format will it be in? How can you be sure that the cloud service will destroy all of your data after you sever ties with it?

Tool robustness: Are available cloud-based tools powerful enough to meet your business's needs, given that such tools tend to be less robust than standard software applications?

Tips for Moving Into the Cloud

After weighing the pros and cons, you may be ready to take your first steps into cloud computing. Here are some tips from small businesses that have already made the transition.

Start small: Cloud computing is a different way of working from what most people are used to, and building familiarity and trust takes time, says Trevor Doerksen, founder and »

ILLUSTRATION: MICHAEL WERTZ

PCWORLD.COM

Read about Microsoft's forthcoming Azure cloud-computing platform and its 'Dallas' cloud-computing project, at find.pcworld.com/69430. And see find.pcworld.com/69432 for more on cloud privacy concerns.

CEO of MoboVivo, a 12-person video content portal/software company. So consider having two or more employees start with a simple task such as collaborating on a Google Docs file. Once team members gain confidence with the new work environment, you can add more cloud services to the mix.

Think big: Can you scale the service to meet your requirements as your business grows? If not, keep looking.

Check the available data export formats: You should be able to export, in standard formats, the business apps (such as Word and Excel) you use, so you can back up and access your data locally, or move it easily to another service later.

Read the agreement closely: To use a cloud service, you'll probably have to accept an endless service-level agreement or other contract at the outset. Read it carefully so you know what you are paying for, what the service provider's privacy policy is, whether there are fees for early termination, and so on.

Get creative: Look for ways to adopt free or low-cost cloud tools instead of more-expensive ones. For example, you might use free Google Docs spreadsheets, rather than a paid CRM cloud service, as a basic CRM system.

Evaluate more than one service before deciding: Most services offer a free trial, and it shouldn't take you long to figure out whether the service's user interface is pleasant or painful to work with.

Consider open-source cloud services: Open-source arrangements encourage third-party developers to build add-ons that enhance the service, and they let you create tools for using the service that are unique to your business.

Don't be afraid: Any big change in how you do business requires caution, and that certainly applies to moving to the cloud. But the business world is already making the transition to cloud computing, and—given the lousy economy—now is a great time to do so.

"I can't think of any company that shouldn't try it," says Doerksen. "If you don't, you're missing an opportunity to prepare your business for the future."

NET WORK MICHAEL SCALISI

Analyze Network Problems With Wireshark

Wireshark captures the activity on your network so you can sort through it later.

ETHERNET NETWORKS can run problem-free for a long time. But a disaster can occur without warning, debilitating an underequipped network.

One danger is a broadcast storm, in which a defective or misconfigured network device forces your network to shut down by flooding it with traffic. Another common threat is a malware-infected computer, which may send a barrage of e-mail or try to replicate to computers on your LAN or across the Internet. Such a computer can slow down Internet traffic and put you on bad terms with your ISP. And finally a single user may consume so much bandwidth—for streaming audio or video, say—that it adversely affects other network users.

Jump to Wireshark

Fortunately, a general IT person can track down these problems with Wireshark (wireshark.org; formerly Ethereal)—a freeware tool that captures network packets, analyzes them, and displays detailed packet data. Wireshark is very powerful, with myriad options, but you can get started with it after learning a few basics.

First, you need to identify the traffic you're monitoring. Back when hubs were common, networks transmitted all traffic to all ports—an arrangement that scaled badly. Unlike hubs, switches discover the hardware addresses associated with each port and transmit only relevant traffic between ports. So if you plug a PC running Wireshark into any available switch port, you'll see only traffic to and from your system and broadcast/multicast traffic—interesting, but not always useful.

To monitor traffic from an ethernet port other than the one your PC is plugged into, you need to mirror your ports. Depending on the situation, you may want to mirror all ports on a switch or just one (the port your Internet connection is plugged into, say). Consult the documentation for your particular switch; on my 24-port Netgear switch, I used only a simple browser interface to mirror the necessary ports.

After installing and launching Wireshark, you'll want to capture some network traffic. Click *Capture•Options* and select the correct interface; to focus on a specific type of traffic, choose *Capture Filter* and select or create a filter. To tell Wireshark how much time or data it should collect before stopping, check the appropriate *Stop Capture...* box and select a suitable drop-down menu value. (If you let Wireshark run for an extended period of time, file sizes can become unmanageably large.) Next, click *Start*, and you'll see traffic flowing in real time. If you haven't set up an automatic ending point, stop Wireshark when you've captured as much data as you want.

Making Sense of the Data

Now you need to figure out how to interpret the data. If you're investigating a network slowdown, you'll want to pinpoint the source of traffic. Choose *Statistics•Conversations*, and select the *IPv4* tab; from there, you can sort by such criteria as 'Bytes' (for a reading you can use to pinpoint a computer that's generating too much traffic). To search for a particular type of traffic, click *Analyze•Enabled protocols*, and check the protocols you want.

Wireshark is an incredibly flexible tool for locating network problems, and for analyzing the kinds of traffic you're getting. Though it can be a handful at first, it's well worth learning to wield properly.

ILLUSTRATION: HARRY CAMPBELL

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TECH AUDIT

How an Up-to-Date Virtualized Server Saved One Small Business

EVEN TECH COMPANIES need an IT overhaul from time to time. Case in point: Last year, a Canadian software developer called my team at Microtek to upgrade its server room. The tech company was a six-person operation responsible for developing an application suite that enables various small businesses to locate and acquire specialty parts; the company needed a new server to host a home-built CRM system it uses to manage 100 client accounts.

The people responsible for the company's internal IT infrastructure had departed, leaving scant documentation to guide current staff. The server used aging hardware and was rapidly running out of disk space. The developer needed to upgrade the CRM server, add disk space, establish a backup option for Internet service, upgrade the network, give the owner remote access, and maintain updated documentation on the network—all on a tight budget.

The company's data center consisted of a generic white-box Windows Server 2000 server powered by a 2GHz single-core Xeon processor with 1GB of RAM and a 3x36GB RAID 5 stripe, connected to the network via a 16-port Linksys 10/100 ethernet switch, and to the Internet via a D-Link broadband router with cable Internet service from a local telecom. It was an ad-hoc solution that was destined for failure and, fortunately, bound for the scrap heap.

The Solution

To bring the company's data center into the 21st century, we built up the network, replacing the outdated 16-port 100-mbps switch with a D-Link DES-1024D 24-port gigabit switch. We left the cable Internet service in place, but added a wireless ISP as a secondary service to keep the company connected in case the cable connection went down. We also installed a Fortinet Fortigate 60 firewall appliance to support VPN remote access for the company's owner, who frequently travels to visit clients.

D-LINK'S DES-1024D 24-port gigabit switch replaced a 16-port, 100-mbps Linksys unit.

We replaced the underpowered server box with a Dell PowerEdge 2900 III equipped with a quad-core Xeon 8 CPU, 8GB of RAM, and a 4x400GB SAS 15,000-rpm RAID 5 array. Using VMware ESXi vSphere 4.0, we virtualized the old Windows Server 2000 system on the new hardware, making the transition seamless for the six-person staff; the restored network was up and running after only 2 hours of downtime.

To protect the company's data from loss, we deployed a layered backup arrangement. For file-level backup of the server, we implemented full-server imaging with support for bare-metal restores and more-granular file-level restores. First, we installed an amazing $40 program called Image for Windows, to handle backups.

An IT overhaul yields a speedier, more stable, more secure network with lots of room to grow.

THIS DELL POWEREDGE 2900 III carries a quad-core Xeon 8 CPU, 8GB of RAM, and a 4x400GB SAS 15,000-rpm RAID 5 array.

We also implemented a free, ESXi-supported script called GhettoVCB, which runs in the VMware service console, and does a snapshot and clone for a full hot backup of the server. Finally we set up another file-level backup using MirrorFolder to synchronize a full copy of the company's critical files to external USB hard drives every 2 hours. Connecting the same make and model of external USB drive to the same USB port yields the same drive letter. It works for rotational backups and basic archiving.

The Payoff

As soon as we brought the system back online, the company's six workers saw huge performance gains. They could access files and their CRM on the server much faster than before. The programmers could quickly access their files directly on the server, and keeping the files on the server ensures that stray copies don't escape the backup schedule. The network has more storage space, too.

The owner can access important customer data securely as he travels to visit clients, and his business has a disaster recovery plan. The revamped network and equipment are robust enough to ensure trouble-free operation for the next three to five years. Workers have had to use the backup Internet service a few times, and it has helped keep productivity high.

—David Papp, President, Microtek Corporation

MEET THE PROS

Microtek Corporation

DAVID PAPP IS president of Microtek Corporation, a full-service technology solution provider certified for CISSP, CISA, and VCP. Microtek offers working solutions for all aspects of technology, ranging from IT strategies, networking, Internet, and Web hosting to custom Web application design, and graphic-design marketing solutions. Contact the firm at 780/409-2525.

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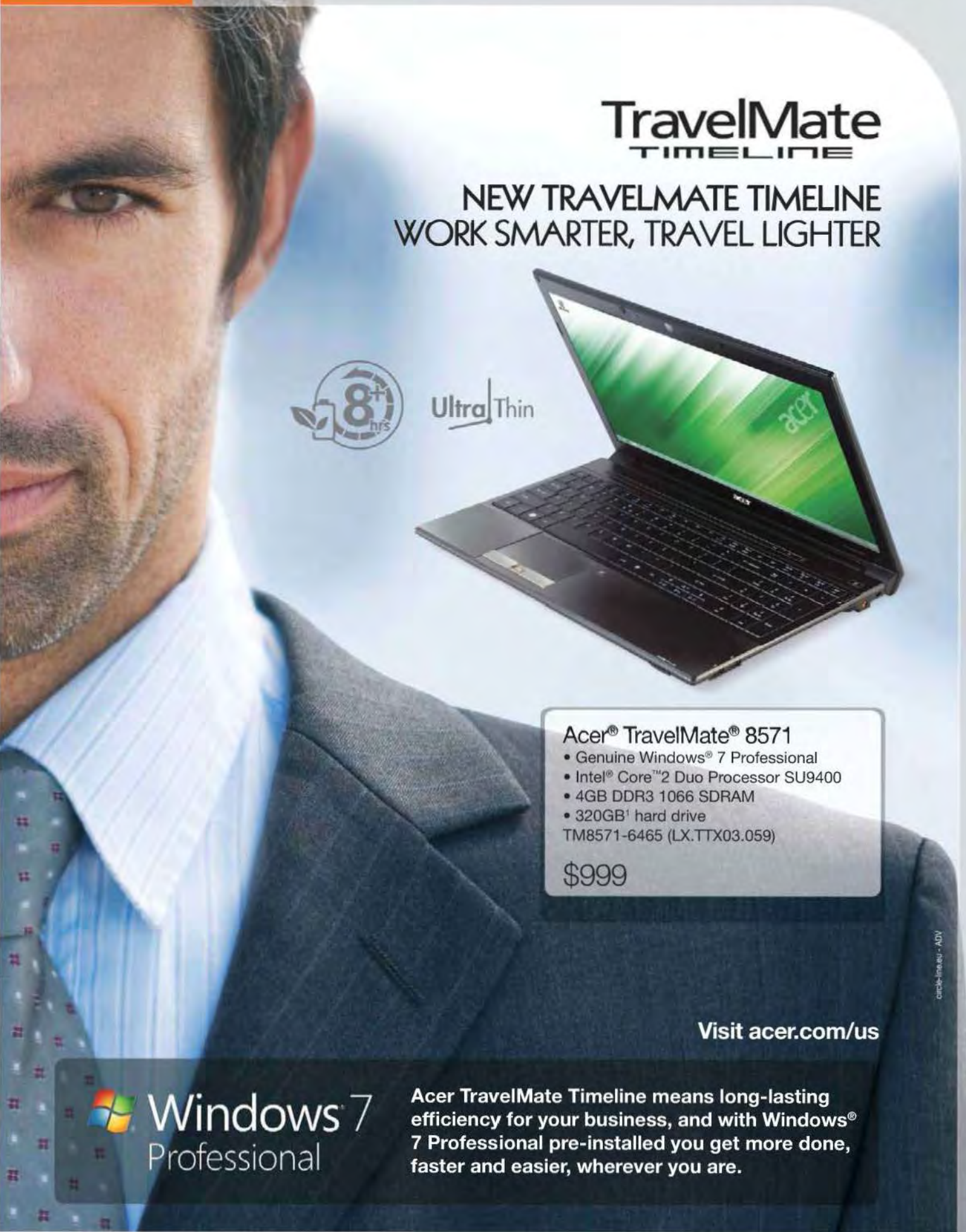

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- 802.11a/b/g/Draft-N WLAN, Bluetooth®, gigabit LAN, V.92 modem
- Integrated webcam
- Fingerprint reader
- Optional docking station available
- One-year limited warranty[2]

Acer TravelMate 5530
- Genuine Windows® 7 Professional
- AMD Turion™ X2 Dual-Core Mobile Processor RM-75
- 4GB DDR2 667 SDRAM
- 320GB[1] hard drive

TM5530-5155 (LX.TQ903.004)

$749

Acer TravelMate 5530
- Genuine Windows® 7 Professional
- AMD Athlon™ X2 Dual-Core Processor QL-65
- 3GB DDR2 667 SDRAM
- 250GB[1] hard drive

TM5530-5369 (LX.TQ903.006)

$649

Protect Your Investment with an Acer Notebook Service Upgrade

Acer notebooks come with a one-year or three-year standard limited warranty.[2] For extra protection and peace of mind, consider the Total Protection Upgrade, which covers the cost of a replacement unit if, as determined by Acer, your covered notebook cannot be repaired. On-site service is available, too, for TravelMate notebooks.[6]

2-Year Extension of Limited Warranty (146.AB820.EX2)
For TravelMate and Aspire Notebooks with 1-Year Limited Warranty
$99

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

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

3-Year Limited On-Site Service (146.AD362.003)
for TravelMate Notebooks with 3-Year Limited Warranty
(Runs concurrently with limited warranty.)
$99

2-Year Extension of Limited Warranty + 3-Year Limited On-Site Service (146.AD362.001)
for TravelMate Notebooks with 1-Year Limited Warranty
(On-site service runs concurrently with limited warranty and limited warranty extension.)
$149

2-Year Extension of Limited Warranty + 3-Year Limited On-Site Service + 3-Year Total Protection Upgrade (146.AD362.002)
for TravelMate Notebooks with 1-Year Limited Warranty
(On-site service and Total Protection Upgrade run concurrently with limited warranty and limited warranty extension.)
$299

3-Year Limited On-Site Service + 3-Year Total Protection Upgrade (146.AD362.004)
for TravelMate Notebooks with 3-Year Limited Warranty
(On-site service and Total Protection Upgrade run concurrently with limited warranty.)
$249

[1] When referring to storage capacity, TB stands for a thousand gigabytes and GB for one billion bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.
[2] For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.
[3] The alternate operating system can be installed in place of, not in addition to, the pre-loaded operating system.
[4] 3D content, 3D glasses and an appropriately equipped PC are also required to display 3D images.
[5] Touch-screen capability requires appropriate software installed on the PC connected to the display. This software does not come with the display.
[6] On-site service applies to the continental U.S. and Canada only and may not be available in all locations. In those areas where on-site service is provided, a technician will be dispatched, if necessary, following efforts to resolve the problem by telephone support.

acer.com/us

For the name of a reseller near you or further information, please visit our Web site or call **800-571-2237**

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On-the-Go Drive Encryption Can Protect Data

BY ROBERT VAMOSI

IN JANUARY, THE health organization Kaiser Permanente acknowledged the theft of an external hard drive from an employee's car. The hard drive contained data on about 15,500 Northern California patients, including their full names, medical record numbers, and, in some cases, care records.

The 2009 HITECH Act, among other things, requires reporting healthcare-related data breaches to the Department of Health and Human Services. Kaiser informed local, state, and federal authorities on December 8, but the employee who lost the drive had waited one week to tell her employer.

About the same time as the Kaiser breach, researchers from the German penetration-testing firm SySS GmBH discovered a weakness in how the passwords for several encrypted USB drives are stored on the host system.

When a user types a password for an encrypted USB drive, the host computer authenticates the password and sends an unlock code to the USB drive. The German researchers found that they could create a script to bypass the host system and send the unlock code to the device, no matter what password the legitimate user had chosen.

> Whether on a USB drive, an external hard drive, or a mobile phone, data is going out the door—but what if the device is lost?

ILLUSTRATION: SEAN McCABE

USB Vendor Recalls

After the release of the SySS white paper, which focused on Kingston encrypted drives, Kingston announced a recall of three of its encrypted USB drive models: DataTraveler BlackBox, DataTraveler Secure–Privacy Edition, and DataTraveler Elite–Privacy Edition. Users of these devices should browse to www.kingston.com/driveupdate for more information.

Two other manufacturers soon followed suit. Verbatim said that its 1GB, 2GB, 4GB, and 8GB Verbatim Corporate Secure and Verbatim Corporate Secure FIPS Edition USB flash drives were vulnerable without a firmware update. Sandisk said that the 1GB, 2GB, 4GB, and 8GB versions of its Cruzer Enterprise CZ22, CZ32, CZ38, and CZ46 drives were affected and required a firmware download.

One USB manufacturer, IronKey, reported that its drives were not affected, because IronKey stores its passwords within the device hardware, not on the host PC as other brands do. "Every IronKey device has unique random AES encryption keys that are generated on the device when a user initializes it," the company said in a press release.

Some of the recalled Kingston, Sandisk, and Verbatim drives had been certified by the U.S. government as cryptographically secure. But such certification means only that the product fulfills the minimum requirements.

Missing Media

Encrypting an external drive, no matter how small, makes sense. In 2009 British security company Credant published its annual USB survey and found that 4500 USB drives (encrypted and not) were left in pockets at dry cleaners in the UK. That's actually good news: The figure is down from 9000 the previous year. The decrease comes from the growing use of mobile devices. However, »

PCWORLD.COM

Good news: Some netbooks can have whole-disk encryption (find.pcworld.com/69493). Bad news: Cracking GSM encryption on cell phones—and eavesdropping—is now easy (find.pcworld.com/69494).

Credant conducted an earlier study in London and New York that determined 12,500 laptops, iPods, and memory cards are left in taxis every six months.

A few years ago, an unencrypted laptop and external hard drive containing sensitive personal information for 26.5 million veterans and military personnel from the U.S. Department of Veterans Affairs was lost. The equipment was recovered, and an investigation found that the records had not been accessed.

This incident prompted the Office of Management and Budget to require the U.S. government to deploy encryption on laptops, as well as strong authentication on all remote access.

In Nevada, by law, businesses may not transfer the "personal information of a customer" without "encryption to ensure the security of the electronic transmission." And in Massachusetts, a new law requires monitoring and encryption of all portable devices for "all persons that own, license, store or maintain personal information about a resident of the Commonwealth."

Encryption Solutions

If some encrypted drives are suspect, what choices do you have? For starters, Microsoft's BitLocker to Go in Windows 7 Ultimate and Enterprise extends drive encryption to external storage devices.

Another solution: Encrypt any USB drive using the open-source TrueCrypt (find.pcworld.com/69479). This free program doesn't encrypt the entire drive; rather, it allows you to create an encrypted folder on an external, internal, or USB hard drive. Simply drag the sensitive documents to that folder.

For data on a mobile phone, one option is Lookout Mobile Security (find.pcworld.com/69480), an app that's free for personal use. It doesn't encrypt the data, but if the phone is lost or stolen, it lets the owner locate the device from any Web connection and sound an alarm (like a car alarm for a mobile), or remotely wipe the personal data from most popular mobile devices. It also offers antivirus, firewall, and backup features.

BUGS & FIXES

ERIK LARKIN

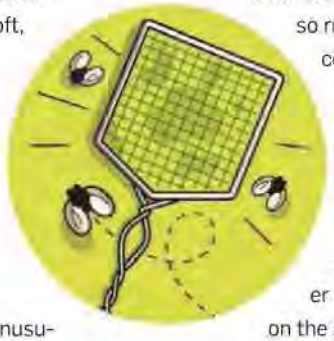
Google Attack Based on Unpatched IE Flaw

Close the hole that Chinese hackers used. Plus: an essential Adobe update.

GOOGLE ANNOUNCED IN January that it and numerous other companies had been hit by successful hacker attacks (find.pcworld.com/69481). The hackers' means of access: a critical unpatched hole in Internet Explorer.

The invasion originated in China, and according to the company, the hackers tried to break into Gmail accounts and steal information about human-rights activists. The IE flaw was exploited to install a Trojan horse that would allow full remote control over a PC.

Though the hole affects IE 6, 7, and 8, the only known attacks were on IE 6. According to Microsoft, security measures (Protected Mode for IE 7 and 8, and Data Execution Protection for IE 8) stopped attackers from using this zero-day flaw in the later IE versions.



In response to the assault, Microsoft took the unusual step of releasing a fix—which it had already been working on—outside of its normal monthly patch cycle.

The cumulative IE update addresses other serious security holes in addition to the aforementioned flaw, which can trigger an attack if you view a malicious Web page or poisoned banner ad. The MS10-002 update (find.pcworld.com/69482) is rated critical for all supported versions of Internet Explorer, from IE 5 on Windows 2000 through IE 8 on Windows 7. Run Windows Update to make sure that you have picked up the patch.

This latest major attack should prod anyone who has yet to upgrade from IE 6 to take that essential step. It's a safe bet that another hole will be found that causes the now-decrepit browser to throw open the doors of your PC to hackers. If you're stuck using IE 6 at work because of some legacy Website or company program, you might want to use IE only for that old program, and use an alternative browser such as Firefox for your everyday browsing instead.

A Ho-Hum Update for Most

Microsoft's regular Patch Tuesday in January included only one patch, shoring up a flaw with Embedded OpenType fonts that was rated critical only for Windows 2000. Without the MS10-001 update (find.pcworld.com/69483), a vulnerable Windows 2000 system could be taken over by a successful attack, so run Windows Update to be certain that you've nabbed this patch as well.

Adobe Fixes Own Zero-Day Flaw

Adobe released an essential fix for its Reader and Acrobat programs on the same day as Microsoft's regular monthly patch. Pretty much everyone will need to check that they have the Adobe Reader and Acrobat 9.3 update. It shores up a security hole that malicious .pdf files have been exploiting since December, and it is required for version 9.2 (or earlier) of both programs on Windows, Linux, and Mac systems.

Click *Help•Check for Updates* to make sure you have the latest version, and click the *Preferences* button on the resulting pop-up to confirm that you've enabled Adobe's automatic updates. For more details on the update, see find.pcworld.com/69484, and head to get.adobe.com/reader to download the full version.

BUGGED?

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ILLUSTRATION: HARRY CAMPBELL

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Security Alert

Scammers Hop on the iPad Bandwagon

IF YOU'RE INTERESTED in Apple's recently announced iPad—and who isn't?—beware: Search results for articles on the iPad may contain poisoned links that lead to rogue antivirus software, as fraudsters unleash a favorite malware-pushing tactic.

Antivirus makers Trend Micro and Panda Security, along with the threat-tracking Internet Storm Center, have posted warnings about malicious results for iPad-related search terms such as "apple tablet announcement." Crooks have for years used such SEO poisoning to snare unwary surfers.

According to Trend Micro, clicking one of the malicious links could lead to rogue antivirus software, an online scam that uses fake but professional-looking applications to warn of nonexistent infections. The fake app then exhorts victims to purchase a license for the software so as to clean up the supposedly discovered malware. Go to find.pcworld.com/69499 for more information on these sorts of attacks.

Trend Micro posted a screenshot of a malicious result that it says appeared on a first page of search results (find.pcworld.com/69500); when I recently conducted a similar search, however, I didn't see that particular link. Let's hope that means Google and other search engines are now filtering out these scams—but watch out for new ones, regardless.

—Erik Larkin

PRIVACY WATCH ERIK LARKIN

Digital Thieves Dominate Data Breaches

Theft by hacking is now the top cause of companies' reported data losses, but a few steps can mitigate the damage.

FOR THE FIRST time, hackers have become the biggest cause behind publicly reported data breaches, according to a recent report.

The Identity Theft Resource Center began tracking the cause of reported breaches three years ago. For the first two years, the top cause was what the ITRC calls "data on the move"—typically a lost laptop with unencrypted data, or even a lost briefcase. That changed in 2009, when about one out of every five data breaches had a hacker behind it.

A thief who walks away with a laptop is likely more interested in wiping its hard drive and selling it than in selling its data. But a hacker who invades a company's network and swipes a trove of credit card numbers is sure to use them, or sell them to someone else who will.

The ITRC notes that its study (find.pcworld.com/69485) is based only on reported breaches. Because state laws and policies vary, not all breaches or their causes are reported. The number of data breaches dropped from 657 in 2008 to 498 in 2009 (in 2007, there were 446).

But the number of hacker-launched thefts rose. And that's bad news.

Assume Your Data Is Stolen

The upshot? As security gurus I talk to like to put it, assume that your information has been compromised, and be ready to catch it when it's used.

That's Wade Baker's approach. He is a researcher and coauthor of a data-breach report for Verizon Business, a Verizon subsidiary that investigates information theft. According to Baker, hacker thieves are typically after credit card and debit card numbers, as well as other types of personal information that someone can use to turn a fraudulent buck.

While you can't improve the security of obscure credit card processing companies, you *can* stay vigilant to quickly catch attempts to use stolen information.

Traditionally, you carefully scan your credit card and bank account statements. But, hey, this is *PCWorld*—we're all about high-tech timesavers. Here are four.

1. Most banks let you set alerts if a charge above a certain amount hits your account. Some will even automatically send an e-mail or an SMS message if a charge from overseas shows up.

2. Mint.com can pull in data on your disparate credit cards, checking and savings accounts, and even investments and loans for you to view in one place. The company says it carefully encrypts its data, and the site allows only information viewing. But using it still requires trusting the service with your financial accounts' usernames and passwords. For more on automatic account alerts and Mint.com, see find.pcworld.com/69486.

3. Check your credit reports regularly. The free annualcreditreport.com allows access to your Experian, Equifax, and TransUnion reports once a year, for a total of three reports per year. (The much-advertised freecreditreport.com requires you to pay $15 a month.)

4. Consider using virtual credit card numbers, which some banks and PayPal offer. Such numbers (typically a free service) are valid only for the company you give them to. See find.pcworld.com/69487 for more on using the services.

ILLUSTRATIONS: GORDON STUDER (LEFT); HARRY CAMPBELL (RIGHT)

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Reviews & Rankings

Ten Essential Android Apps

We scoured the growing Android Market and rounded up the very best that Google's app store has to offer for Android OS phones.

NO MATTER WHAT your area of interest, the Android Market (android.com/market) probably has an app that matches your needs. And if it doesn't now, just wait: One is likely on the way.

We've combed the shelves of the Android Market and culled the ten choicest items that were available as of this writing. The result is a list of must-have Android apps, arranged in alphabetical order.

And the best part? All but one of these apps are free.

Tell us your favorites at find.pcworld.com/69536.

AppManager

Category: Tools/Utilities
Price: Free
Developer: zx128
Compatibility: Android 1.5 or later
Rating: ★★★★☆

AppManager puts several key file-management features at your fingertips: It serves as an app backup tool, and it can either selectively copy individual apps or copy every app that's on your phone to your microSD card. In addition, it displays valuable information about installed apps, including each app's version number, installation date, and protection status, and both the total and the free storage space remaining on the phone and on the microSD card.

AppManager lets you sort the list of apps by name, by size, or by app installation date. In AppManager's main window, accompanying the icon and name of each installed app, are its version number, its installed size, and its date of installation.

APPMANAGER CAN back up and sort your Android phone apps.

AppManager's greatest strength is its backup feature: You can choose to back up only the new applications, or everything. This versatility helps if you aren't sure whether a new feature in an app's upgrade is going to cause a problem. Back up the existing app before you upgrade, and then revert to the older version if you don't like what you find.

Astrid Task/Todo List

Category: Productivity
Price: Free
Developer: We <3 Astrid
Compatibility: Android 1.5 or later
Rating: ★★★★½

A useful tool designed to sync not only with your calendar but also with the popular online task manager Remember the Milk, Astrid Task organizes your to-do list by prioritized colored tabs and lets you check off items once they're finished.

When you open Astrid, you immediately encounter an entry field for introducing tasks. Once added, tasks appear in a list that's organized by the date and time you set for them to be completed. Astrid offers quite a few options for each task entry: You can set the importance of the assignment, add any necessary tags, estimate how long it will take to complete the job, and attach notes to the new task.

ASTRID TASK USES colored tabs to prioritize to-do items.

The organization was reasonably intuitive; in use, we

INSIDE

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found it best to complete all editing on a task first and then press the Save button (pressing Save always takes you back to the original task list, not back to the previous editing screen).

Though we did find some minor flaws in Astrid Task, this application provides a wide enough array of options that even procrastinators can get things done.

Google Sky Maps

Category: Reference
Price: Free
Developer: Google
Compatibility: Android 1.5 or later
Rating: ★★★★½

A virtual planetarium at your fingertips, Google Sky Maps may be the coolest app in the entire Android Market.

Using both GPS and your Android phone's internal accelerometer and compass, Sky Maps determines the position in which you are holding the phone and then displays a live map of the planets, stars, and constellations on the phone's screen.

GOOGLE SKY MAPS is like having a planetarium in your hand.

Simply hold the phone as if you were taking a picture of the sky, and Sky Maps will display the portion of the sky directly behind the phone on the screen.

Can't figure out the name of a particular constellation? Point the back of the phone toward that part of the sky, and Sky Maps will identify it for you. If you've ever gazed up at a bright celestial body and wondered, "Is that a star or a planet?" Sky Maps will clear up your confusion as easily as if you were carrying a little stellar cartography department in your pocket.

The app does get confused occasionally when it can't determine whether the phone is being oriented horizontally or vertically (such as when you point it straight up at the zenith of the sky).

Google Voice

Category: Communication
Price: Free
Developer: Google
Compatibility: Android 1.6 or later
Rating: ★★★½

Google Voice for Android is the mobile phone interface for a free Google service that merges voice telephony into Google's near-instantaneous information delivery system.

With the Android app in place, you can use Google Voice to make phone calls or send SMS messages via your Google Voice phone number. Google Voice has lots of nifty features that a typical phone service doesn't. For instance, if you receive a call to your Google Voice number on your handset, you can opt to send the call to voicemail—and then listen to the message as it is being recorded in almost real time. When the caller finishes the voicemail message, the service sends both a transcript containing the text of that message and an audio file to the Google Voice app.

GOOGLE VOICE IS an excellent tool for handling your calls.

Messages you save on your Android phone can't survive a factory reset, but they remain available on the Web-based service. It's a drawback, but a small price to pay for free U.S. phone calls.

Last.fm

Category: Music
Price: Free
Developer: Last.fm
Compatibility: Android 1.5 or later
Rating: ★★★★½

Music geeks and Android lovers, unite! Last.fm is an across-the-board great application, and it comes filled with pleasant surprises to boot. For example, during our testing of the app, when Last.fm played a Sonic »

MORE ONLINE

See our Phones product center at find.pcworld.com/63260. For iPhone apps, see our App Guide at find.pcworld.com/69513.

IF A GROUP is on tour, Last.fm's button will pull up more info.

Youth song, a banner superimposed on the upper right corner of the album artwork declared, "On Tour." The On Tour button leads to an artist bio, a similar artist tab, tags, fans, and events. The events information displays all nearby shows where the artist is playing, along with relevant dates and venues.

Last.fm also supports background streaming, so you can continuously listen while you use other features of your phone. It lacks a pause button, but that's the only shortcoming we found.

Meebo IM

Category: Communication
Price: Free
Developer: Meebo
Compatibility: Android 1.5 or later
Rating: ★★★★☆

As a Web-based tool, Meebo IM gives you the flexibility that client-based tools like Android's own IM app can't.

The Meebo Android app lets you add a subset of your IM accounts—including AIM, Google Talk, ICQ, and Yahoo Messenger. The Web-based Meebo, however, supports 54 different instant messaging services and social networks (at last count). If you want to use more accounts, you'll have to log in to Meebo through a regular Web browser on a computer and add your other IM accounts from there. Then, the next time you log in to the Meebo Android app, all of your accounts and friend lists will appear in the mobile app.

Faced with spotty network coverage, you may find that your IM accounts constantly lose connection and log you out. But if you need to stay in touch over IM, Meebo is among the best of the Android IM clients—free or paid—that you can use.

MEEBO IM is one of the best Android IM clients available.

My Maps Editor

Category: Navigation/Travel
Price: Free
Developer: Google
Compatibility: Android
Rating: ★★★★½

Location-based apps have been booming lately, and Google's My Maps Editor is one of the best. A free app that allows users to create and share personalized maps, My Maps Editor is intuitive, smooth and useful.

MY MAPS EDITOR allows you to share your personalized maps.

When we used the app to create a map for a fictitious pub crawl through San Francisco, My Maps Editor made it easy to add markers at the starting point, draw lines between locations, and add details for each marker.

The only trouble we encountered was in trying to add a photo to a marker—none of the ones we tried would load. Other aspects of this app make it indispensable, however. For one, it syncs automatically with Google Maps, which makes taking your desktop maps along with you very easy.

SplashID

Category: Tools/Utilities
Price: $10
Developer: SplashData
Compatibility: Android 1.5 or later
Rating: ★★★★½

SplashID acts as a universal, secure data storage utility for Web user accounts and passwords, frequent flyer programs, birthdays, e-mail accounts, and myriad other data types. You can create accounts and then group them together under categories with names like "Serial Numbers" or "Web Logins" and further classify them into Business, Personal, or Unfiled subcategories.

We did have a gripe with regard to its synchronization: Wireless syncing with a PC isn't an entirely automatic process, and it requires you to know the IP address of your desktop or laptop. But that's a minor technical hurdle; it shouldn't cause most users to stumble.

SportsTap

Category: Entertainment
Price: Free
Developer: Mobile1Sports
Compatibility: Android 1.5 or later
Rating: ★★★★☆

A solid combination of slick graphics and snappy functionality distinguishes SportsTap as a sports fanatic's mobile companion. Once downloaded, it provides frequent score and results updates for major sports, all within an interface that's fairly easy to navigate.

The main screen provides icons for prominent sports leagues as well as shortcuts to leading college and »

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international professional sports. In addition to installing the Android app itself, you can embed a SportsTap widget for scrolling through scores and schedules from your phone's desktop.

You can choose favorite teams, and selection promotes them to the top of your screen when you view a list of scores. If you're on the road, selecting LocalTap will take advantage of your phone's network and/or GPS locator capabilities to list scores and schedules of sporting events within 50, 100, or 200 miles of your location. We found that most of the functions and settings in SportsTap work just fine, but some smaller text-only links may be hard to poke if you have large fingers.

SPORTSTAP puts sports scores and game info in your pocket.

Tweetcaster Beta

Category: Social Networking
Price: Free
Developer: Handmark
Compatibility: Android 1.5 or later
Rating: ★★★★½

How many Twitter applications do you actually need to have? The answer: One—Tweetcaster Beta. This app does everything that a Twitter user could want, and its interface is both intuitive and easy on the eyes. Once you're signed in and ready to go, Tweetcaster will take you to your home page, with tabs along the top for the feed, inbox, @ replies, favorites, and lists. Above the tabs is an arrow that you can use to change the view between Twitter accounts or to view Trends or Nearby tweets.

TWEETCASTER BETA helps you manage your life on Twitter.

When you post a new Tweet, you can geotag it, shrink a URL, add a picture, or include a username. Tapping on any user pulls up the person's bio, Followers/Following/Favorites numbers, tweets in a feed, messages, favorites, and lists. Tapping on someone else's tweet gives you several options: You can open the URL, post an @ reply, mark it as a favorite, or retweet.

—Robert Anthony, Amber Bouman, and Andrew Brandt

PCWORLD TOP 5 ANDROID SMARTPHONES

	MODEL	Rating	Features and specifications	Performance
1	Motorola Droid **$200 (with 2-year contract)** find.pcworld.com/64263	★★★★½ SUPERIOR	• Carrier: Verizon • Form factor: Slide • Weight: 6.0 ounces • Camera resolution: 5.0 megapixels	• Solid construction • Keyboard is a bit shallow • Superb suite of video and audio features
	▸ The first Android 2.0 phone has a strong suite of Web features and a great 3.7-inch display; the shallow keyboard may irk some users, however.			
2	Google Nexus One **$180 (with 2-year contract)** find.pcworld.com/64373	★★★★½ SUPERIOR	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.5 ounces • Camera resolution: 5.0 megapixels	• Dazzling OLED display • Comfortable keyboard • Middling audio and video quality
	▸ The Nexus One has an AMOLED display, delivers speedy performance, and offers cool tweaks to Android OS 2.1; but it has limited multitouch.			
3	Motorola Cliq **$150 (with 2-year contract)** find.pcworld.com/64261	★★★★½ SUPERIOR	• Carrier: T-Mobile • Form factor: Slide • Weight: 5.6 ounces • Camera resolution: 5.0 megapixels	• High-quality design • Comfortable keyboard • Audio and video are middle of the road
	▸ This beautifully designed Android smartphone is a social butterfly's dream, but others may find the MotoBlur user interface overwhelming.			
4	BEST BUY T-Mobile MyTouch 3G **$150 (with 2-year contract)** find.pcworld.com/63912	★★★★½ SUPERIOR	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.1 ounces • Camera resolution: 3.2 megapixels	• Lightweight, slim design • Touch keyboard isn't perfect • Excellent video and audio features
	▸ The T-Mobile MyTouch 3G is a big improvement over its predecessor (the G1); the phone's lack of a physical keyboard is a minus, however.			
5	Samsung Behold II **$230 (with 2-year contract)** find.pcworld.com/64264	★★★★☆ VERY GOOD	• Carrier: T-Mobile • Form factor: Candy bar • Weight: 4.2 ounces • Camera resolution: 5.0 megapixels	• Pocketable and light • Touch keyboard is small • Video looks terrific on OLED display
	▸ With a gorgeous AMOLED display and an excellent camera, the pricey Samsung Behold II will appeal to multimedia junkies with deep pockets.			

CHART NOTE: Ratings are as of 2/5/10. ONLINE: Visit find.pcworld.com/63260 to see in-depth reviews, full test results, and detailed specs for all cell phones.

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New Sony Reader Navigates Slowly

THE SONY READER Daily Edition ($400) has content that I'd love to download if doing so weren't such a hassle. This model is the first Sony e-reader to offer wireless access to content (via AT&T's 3G wireless network) including e-books and newspapers, by subscription or as single copies, at Sony's Reader Store, which you can access from the device.

But 3G wireless service was spotty at best in downtown San Francisco. I managed to subscribe to the digital New York Times through the Sony store, but at first I couldn't download it: A message reported that the download had been interrupted and would have to be restarted from my account page.

You can transfer content to the Reader after attaching the device to your PC via the included USB cable. In fact, this is the only way to patronize bookstores other than Sony's (you can buy from any seller that supports ePub with Adobe Content Server 4 encryption).

Wireless services and a 7-inch-diagonal E-Ink screen that supports 16 shades of gray are the chief features distinguishing the Daily Edition from last fall's Touch Edition. The extra real estate mainly extends the height of the Daily Edition, giving it a display that's tall and narrow for an e-book reader. It's also a tad thicker (at 0.6 inch) and heavier (at 12.75 ounces) than the Touch Edition.

You can manipulate the Daily Edition's touchscreen with your fingers or with a stylus that slides into the device's upper left corner. You can turn pages forward (but not backward) with a finger swipe, but using the hardware page-turn buttons below the display turned out to be a more reliable method.

Among the reader's built-in apps are an image viewer, a capable handwriting utility for capturing notes or doodles, a memo pad, a dictionary, and a music player.

THE SONY READER Daily Edition features a long, lean display.

The shopping experience on the device wasn't great. The store took a while to appear, and it was neither intuitively organized nor particularly attractive—a far cry from Amazon's neatly organized Kindle storefront.

The newspaper features, though, are compelling. The long display lets you view more newspaper headlines on a single page. And if you subscribe to a newspaper and leave the device's wireless adapter turned on overnight, the new day's edition will be waiting for you when you wake up. The Daily Edition has about 2GB of internal memory and can accommodate an SD or Memory Stick expansion card, too.

But before you buy, check the strength of the AT&T 3G signal in your neighborhood, because the whole scheme depends on the 3G service.

Newspaper support is the best reason to invest in this device, so make sure you're happy with the available network support before buying.

—Yardena Arar

★★★☆☆ GOOD

Reader Daily Edition | Sony

Wireless reader with newspaper support relies on iffy 3G service.

List: $400

find.pcworld.com/69501

E-Reader Wins Featherweight Crown

OFFERED IN AN array of colors, and measuring 6.0 by 4.2 by 0.4 inches, Bookeen's 5.3-ounce Cybook Opus wins the e-reader portability prize.

The $199 Opus's built-in accelerometer shifts the text's orientation whenever you turn the device 90 degrees. A four-button navigational wheel guides you through context-sensitive menus that pop up when you press a button to the right of the wheel. You can set the menus (and your e-books) to any of 12 font sizes. And since the Opus supports the securable ePub e-book format, you can read a vast array of commercial content as well as the huge Google e-book library. The Opus's 1GB of internal memory can hold hundreds of books; a microSD Card slot lets you add space.

The Opus's 5-inch screen uses E-Ink technology; the display's virtues include high contrast and low power consumption, but it supports only four shades of gray.

The rechargeable (and replaceable) lithium polymer battery supports up to 8000 page turns between charges. You use the same USB cable to charge the device and to transfer content to it.

THE OPUS'S SCREEN resolution of 200 dpi works best for text.

The Opus has everything you need to read a lot of books, in a very small and lightweight package.

—Yardena Arar

★★★½☆ VERY GOOD

Cybook Opus | Bookeen

Highly portable, no-frills e-book reader is simple but satisfying.

List: $199

find.pcworld.com/69521

PHOTOGRAPHS: ROBERT CARDIN

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Top 10 Ultraportable Laptops

LAB TESTED

The ThinkPad Edge adds a touch of style to Lenovo's venerable but staid line of ThinkPads.

	MODEL	Rating	Performance	Features and specifications
1	Sony VGN-Z598U/B $4450 find.pcworld.com/62161	★★★★☆ VERY GOOD	• WorldBench 6 score: 107 Superior • Overall design: Very Good • Tested battery life: 4:46	• 2.53GHz Core 2 Duo SP9500 • 13.1-inch widescreen • 4.2 pounds • BD-RE/BD-R
	▸ Sony's high-powered business multimedia machine is compelling; but with all of the extras in place, its price is stratospheric.			
2	HP ProBook 5310m $899 NEW find.pcworld.com/69436	★★★½☆ VERY GOOD	• WorldBench 6 score: 99 Very Good • Overall design: Very Good • Tested battery life: 4:56	• 2.26GHz Core 2 Duo SP9300 • 14.0-inch widescreen • 3.8 pounds • DVD+R DL/DVD±RW
	▸ The ProBook 5310m's slim, stylish case impresses, as do its various quick-booting, business-friendly applications.			
3	Lenovo ThinkPad X200 $1069 find.pcworld.com/69437	★★★½☆ VERY GOOD	• WorldBench 6 score: 88 Very Good • Overall design: 81 Very Good • Tested battery life: 8:54	• 2.4GHz Core 2 Duo P8600 • 12.1-inch widescreen • 3.0 pounds • 160GB hard drive
	▸ The ThinkPad X200 is a fine ultraportable with strong performance, superb battery life, and a good keyboard to boot.			
4	BEST BUY Lenovo ThinkPad Edge $899 NEW find.pcworld.com/69438	★★★½☆ VERY GOOD	• WorldBench 6 score: 65 Good • Overall design: 86 Very Good • Tested battery life: 6:30	• 1.3GHz Core 2 Duo SU7300 • 13.3-inch widescreen • 3.9 pounds • 320GB hard drive
	▸ The ThinkPad Edge (see page 56) updates the ThinkPad line's traditionalist look and feel without sacrificing its admirable features.			
5	Acer Ferrari One $599 NEW find.pcworld.com/69439	★★★½☆ VERY GOOD	• WorldBench 6 score: 61 Good • Overall design: 86 Very Good • Tested battery life: 4:52	• 1.2GHz Athlon X2 L310 • 11.5-inch widescreen • 3.3 pounds • 250GB hard drive
	▸ Excellent design, features, and price make up for lackluster performance in a model that 's just a little bigger than a netbook.			
6	HP EliteBook 2530p $2499 find.pcworld.com/69440	★★★☆☆ GOOD	• WorldBench 6 score: 89 Very Good • Overall design: 85 Very Good • Tested battery life: 6:48	• 1.86GHz Core 2 Duo SL9400 • 12.1-inch widescreen • 4.6 pounds • DVD+R DL/DVD±RW
	▸ Pricey but worth it, the HP EliteBook 2530P lives up to its name with extras ordinarily not found on an ultraportable.			
7	Samsung X360-34P $2299 find.pcworld.com/69441	★★★☆☆ GOOD	• WorldBench 6 score: 73 Fair • Overall design: 87 Very Good • Tested battery life: 7:36	• 1.4GHz Core 2 Duo U9400 • 13.3-inch widescreen • 2.8 pounds • 128GB solid-state drive
	▸ Samsung's X360-34P challenges Lenovo's X200 with slicker looks and a crisper image, but it also carries a much higher price.			
8	Asus UL30 $749 NEW find.pcworld.com/69443	★★★☆☆ GOOD	• WorldBench 6 score: 67 Fair • Overall design: 80 Very Good • Tested battery life: 8:56	• 1.3GHz Core 2 Duo SU7300 • 13.3-inch widescreen • 3.9 pounds • 500GB hard drive
	▸ Good looks, a CULV processor, long battery life, and a huge keyboard highlight Asus's new low-cost ultraportable.			
9	HP Pavilion dv2 $749 find.pcworld.com/69444	★★★☆☆ GOOD	• WorldBench 6 score: 45 Fair • Overall design: 89 Very Good • Tested battery life: 2:58	• 1.6GHz Athlon Neo MV-40 • 12.1-inch widescreen • 4.6 pounds • 320GB hard drive
	▸ The Pavilion dv2 finds its niche between netbooks and notebooks, delivering good performance at a reasonable price.			
10	Dell Latitude Z600 $2559 NEW find.pcworld.com/69445	★★★☆☆ GOOD	• WorldBench 6 score: 78 Very Good • Overall design: 83 Very Good • Tested battery life: 3:01	• 1.6GHz Core 2 Duo SU9600 • 16.0-inch widescreen • 4.5 pounds • 256GB solid-state drive
	▸ A fantastic but expensive piece of future-forward technology, the Latitude Z600 is ideal for a status-seeking executive.			

CHART NOTES: Ratings are as of 2/1/2010. Tested battery life is expressed in hours:minutes. Weight excludes adapter, power cord, and extra batteries.

MORE ONLINE Visit find.pcworld.com/69510 to see in-depth reviews, full test results, and detailed specs for all laptops on this chart.

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[1]Driver version 8.66 (ATI Catalyst™ 9.12) or above is required to support ATI Eyefinity technology and to enable a third display you require one panel with a DisplayPort connector. ATI Eyefinity technology works with games that support non-standard aspect ratios which is required for panning across multiple monitors. [2]AMD product warranty does not cover damage caused by overclocking, even when enabled using AMD OverDrive software.
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Lenovo Gives ThinkPad a New Edge

THE THINKPAD EDGE updates Lenovo's stolid line of business laptops.

LENOVO'S NEW ThinkPad Edge marks the first significant change to the look and feel of the ThinkPad line in years, yet it retains most of the line's great features.

The ultraportable Edge's design remains conservative, but with cleaner lines, a glossy lid, and silver accents along the edges. Our chief quibble about the design: The ethernet jack is quite far toward the front edge of the left side. Open the lid, and you'll find the same basic, utilitarian look of other ThinkPads with a large keyboard and touchpad. But...

Still Great to Work On

Users may be may be shocked to see a Chiclet-style keyboard inside the Edge. Such keys are notoriously tough to type on, especially compared with the standard keys that other ThinkPad models use. However, this is easily the best Chiclet keyboard we've ever used. The keys have a slightly scalloped curve, lots of travel, and a good "clicky" feel—neither mushy nor rubbery. You get nice, big <Shift> and <Backspace> keys, and the <Ctrl> key appears (cleverly enough) inside the <Fn> button key.

Like all ThinkPads, the Edge offers generous pointing options: a large, smooth, and accurate touchpad with distinct left and right buttons above and below the pad; and a TrackPoint eraser nub for pointer control, nestled between the bottom corners of the G and H keys.

Still, Lenovo cut a few corners in producing this inexpensive, lightweight model. The keyboard lacks backlighting, and the lid lacks ThinkLight illumination, making it a little harder to use in the dark. But otherwise, the Edge keeps the focus on getting things done.

Excellent Battery Life

Its 13.3-inch-diagonal screen size borders on all-purpose laptop territory, but Lenovo bills and sells the Edge as an ultraportable. It's certainly slim and light enough (less than 4 pounds, without accessories). Like many ultraportables, it sacrifices performance for battery life by using an ultra-low-voltage processor. Our test system carried a 1.3GHz Intel Core 2 Duo SU7300 processor, and starts at $799. A less-expensive, AMD-based system costs as little as $579, but those CPUs tend to be a bit slower than Intel's.

The low-voltage CPU helps explain the Edge's pedestrian WorldBench score of 65; nevertheless, the laptop is fast enough to handle day-to-day business needs. And since it has 4GB of DDR3-1066 RAM and a fairly swift 7200-rpm hard drive, system boot-up and application launch times are fast. It wakes from sleep in about 5 seconds. Battery life was fine at 6.5 hours in our tests, and it probably would exceed 7 hours if you limited its tasks to browsing the Web, checking e-mail, and working on office documents.

Connectivity options include 802.11b/g/n support, built-in 3G mobile broadband with GPS, and WiMax.

The ThinkPad Edge successfully updates a staid notebook line that needed a more contemporary look. We had a few minor complaints (no status lights for hard-drive access and Wi-Fi, for example), but the Edge hits all the important notes. Everything you love about ThinkPads is here, including a great keyboard (despite the switch to Chiclet-style keys). We'd love to see this new design spread through the rest of the ThinkPad line, after a few low-level tweaks.

—Jason Cross

★★★½☆ VERY GOOD

ThinkPad Edge | Lenovo

Laptop updates the line's look and feel without losing key features.

List: $799

find.pcworld.com/69531

PHOTOGRAPHS: ROBERT CARDIN

QUICK TAKE

Supersmall Power Adapters

THE LIGHT, COMPACT mCube Mini spreads its weight around.

WHEN YOU TRAVEL, you want your gear bag to be as light as possible, which is the appeal of Innergie's line of laptop power adapters. The company sells several packages, including the compact $70 mCube Mini adapter (myinnergie.com).

This 2.4-ounce adapter measures 2.4 inches by 1 inch—smaller than the DC adapter it has running out one side—and its weight is distributed so that the adapter doesn't pull on your laptop while hanging between a tray table and a plane's power port. The USB port (for charging another mobile device such as a cell phone) comes directly out of the DC adapter.

The unit comes with ten tips, to support laptops of up to 75 watts of peak power. The tips lock into place on the cable, so a tip in use won't inadvertently get separated from the cable.

—Melissa J. Perenson

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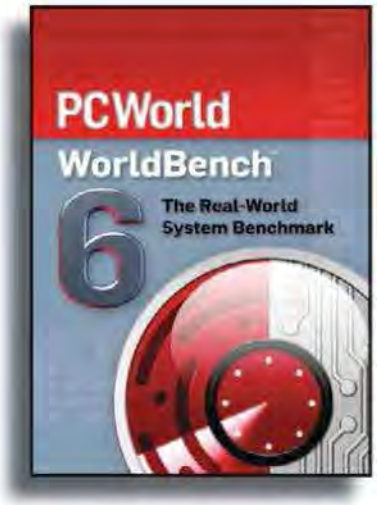

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Top 10 Solid-State Drives

LAB TESTED

The new top performer, from Crucial, is the first SSD to use a 6-GBps SATA connection.

	MODEL	Rating	Performance	Features and specifications
1	Crucial RealSSD C300 $800 NEW find.pcworld.com/69523	★★★★½ SUPERIOR	• Overall performance: Superior • Copy 3.7GB of files: 19 seconds • Write 3.7GB of files: 25 seconds	• 256GB • SATA-600 • Cost per gigabyte: $3.13
	▸ The first drive with SATA-600 support, the RealSSD C300 screams past the competition in both read and write performance.			
2	Samsung MLC SSD $800 find.pcworld.com/63499	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 27 seconds • Write 3.7GB of files: 24 seconds	• 256GB • SATA-300 • Cost per gigabyte: $3.13
	▸ This drive came close to matching the top-performing Crucial RealSSD C300; note that Samsung doesn't sell it directly to consumers.			
3	Corsair P256 CMFSSD-256GBG2D $800 find.pcworld.com/63500	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 27 seconds • Write 3.7GB of files: 24 seconds	• 256GB • SATA-300 • Cost per gigabyte: $3.13
	▸ If the P256 CMFSSD-256GBG2D's specs, performance, and price look familiar, that's because it packs Samsung's MLC SSD drive inside.			
4	Kingston Technology SSD Now V+ Series SSD $385 NEW find.pcworld.com/69524	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 26 seconds • Write 3.7GB of files: 23 seconds	• 128GB • SATA-300 • Cost per gigabyte: $3.01
	▸ This solid performer comes with a handy upgrade kit and cloning software to simplify adding the drive to your desktop PC.			
5	BEST BUY Intel X25-M Solid State Drive 160GB $430 find.pcworld.com/63498	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 25 seconds • Write 3.7GB of files: 40 seconds	• 160GB • SATA-300 • Cost per gigabyte: $2.69
	▸ Intel's gem of an SSD boasts competitive performance on most tests, and its price has come down from the stratosphere.			
6	Toshiba 256GB Solid State Drive THNS256GGBBAA $785 NEW find.pcworld.com/69525	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 26 seconds • Write 3.7GB of files: 24 seconds	• 256GB • SATA-300 • Cost per gigabyte: $3.07
	▸ Toshiba's high-capacity (256GB) solid-state drive delivered strong performance, but Toshiba doesn't sell it directly to consumers.			
7	Super Talent Ultra SATA SSD FTM28GX25H $400 NEW find.pcworld.com/63502	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 28 seconds • Write 3.7GB of files: 25 seconds	• 128GB • SATA-300 • Cost per gigabyte: $3.13
	▸ A basic drive from Super Talent, the FTM28GX25H performed right in line with competing SSDs from more-familiar companies.			
8	Patriot Torqx M28 256GB SSD SATA $745 NEW find.pcworld.com/69526	★★★★ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 27 seconds • Write 3.7GB of files: 25 seconds	• 256GB • SATA-300 • Cost per gigabyte: $2.91
	▸ This 256GB model has a different controller than its 128GB cousin. It comes with a mounting bracket and has a low cost per gigabyte.			
9	Patriot Torqx 128GB SSD SATA $405 find.pcworld.com/63501	★★★½ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 28 seconds • Write 3.7GB of files: 28 seconds	• 128GB • SATA-300 • Cost per gigabyte: $3.16
	▸ This model is a good performer, and like its fellow Patriot it ships with a mounting bracket to make it easier to install in a desktop PC.			
10	OCZ Technology Summit Series 120GB SSD SATA $480 NEW find.pcworld.com/69533	★★★½ VERY GOOD	• Overall performance: Superior • Copy 3.7GB of files: 27 seconds • Write 3.7GB of files: 25 seconds	• 128GB • SATA-300 • Cost per gigabyte: $3.75
	▸ OCZ Technology's speedy (though average for this group) performer is chiefly distinguished by its unusually high cost per gigabyte.			

CHART NOTE: Ratings are as of 2/18/10.

MORE ONLINE Visit find.pcworld.com/69532 to see full test results and detailed specs for all of the drives ranked in this chart.

PHOTOGRAPHS: ROBERT CARDIN

The PictureMate Show Prints and Displays Photos

THE PICTUREMATE Show from Epson is both a snapshot printer and a digital picture frame. Getting two products in one makes the device's relatively high $300 price more palatable.

The included 7-inch color LCD can display photos uploaded to the unit's 270MB memory or pulled from a flash drive or memory card.

★★★★½ **VERY GOOD**

PictureMate Show | Epson

The integrated frame makes this printer a full-time home accessory.

List: $300

find.pcworld.com/64259

The PictureMate Show does a great job of printing, too. In our tests it output color photos swiftly at 1.4 pages per minute, with natural flesh tones and vivid landscapes; black-and-white pictures had smooth grayscales.

The printer is designed to work independently of a computer, but it has a few quirks. The cropping tool, for instance, requires a lot of tedious zooming and shifting. For greater flexibility, you must install the printer on your PC or Mac and use Epson's bundled Easy Photo Print or another application.

Standard features include a rear 20-sheet input tray, a front output tray, two multiformat card slots, and a USB/PictBridge port; Epson sells a Bluetooth adapter for $39. The unit comes with a carrying handle, but it is not truly portable since it lacks a battery option. Epson includes a 20-print cartridge and 20 sheets of 4-by-6-inch paper with the printer. A replacement pack with a 150-print cartridge and 150 sheets of paper costs $38, or about 25 cents per print—quite economical compared with other tested snapshot printers.

THE BUILT-IN DIGITAL frame can apply slideshow effects.

—Melissa Riofrio

Top 10 Color Laser Printers

LAB TESTED

The impressive Dell 5130cdn and HP CP4025dn offset their high prices with cheap toner.

	MODEL	Rating	Performance	Features and specifications
1	Dell 5130cdn **$1549 NEW** find.pcworld.com/64136	★★★★½ SUPERIOR	• Text quality: Superior • Graphics/photo quality: Very Good/Very Good • Tested speed (ppm): 25.2 text/8.3 graphics	• 47 ppm text • 47 ppm graphics • 1200-by-1200-dpi maximum resolution
	▸ The 5130cdn has everything a busy office needs: speed, great print quality, and features galore—plus supercheap toner.			
2	BEST BUY Dell 3130cn Color Laser **$549** find.pcworld.com/61971	★★★★ VERY GOOD	• Text quality: Superior • Graphics/photo quality: Very Good/Superior • Tested speed (ppm): 16.3 text/5.7 graphics	• 31 ppm text • 26 ppm graphics • 600-by-600-dpi maximum resolution
	▸ Spoil your small workgroup with this printer's good speed, terrific output quality, and inexpensive toner.			
3	HP Color LaserJet CP4025dn **$1300 NEW** find.pcworld.com/64138	★★★★ VERY GOOD	• Text quality: Superior • Graphics/photo quality: Very Good/Very Good • Tested speed (ppm): 19.4 text/6.2 graphics	• 35 ppm text • 35 ppm graphics • 1200-by-1200-dpi maximum resolution
	▸ This workgroup printer has plenty of speed and features, and its toner is affordable. Photos tend to look dark.			
4	Lexmark C734dn **$899** find.pcworld.com/63236	★★★½ VERY GOOD	• Text quality: Superior • Graphics/photo quality: Very Good/Good • Tested speed (ppm): 18.0 text/4.4 graphics	• 30 ppm text • 30 ppm graphics • 1200-by-1200-dpi maximum resolution
	▸ Offices will like the speed, features (including banner printing), and low cost; the default color palette is oversaturated.			
5	Xerox Phaser 7500/DN **$3300** find.pcworld.com/63047	★★★½ VERY GOOD	• Text quality: Superior • Graphics/photo quality: Very Good/Very Good • Tested speed (ppm): 17.0 text/5.1 graphics	• 35 ppm text • 35 ppm graphics • 1200-by-1200-dpi maximum resolution
	▸ Yes, the 7500/DN is expensive, but it prints on paper up to tabloid or banner size, at a fast clip and for a low cost.			
6	Kyocera Mita FS-C5300DN **$1739** find.pcworld.com/63237	★★★½ VERY GOOD	• Text quality: Superior • Graphics/photo quality: Good/Good • Tested speed (ppm): 17.2 text/6.1 graphics	• 28 ppm text • 28 ppm graphics • 9600-by-600-dpi maximum resolution
	▸ Speed and economy are this printer's strengths; its color quality is acceptable for mainstream business use.			
7	Konica Minolta Magicolor 4650EN **$599** find.pcworld.com/61205	★★★ GOOD	• Text quality: Superior • Graphics/photo quality: Very Good/Good • Tested speed (ppm): 15.0 text/3.9 graphics	• 25 ppm text • 25 ppm graphics • 9600-by-600-dpi maximum resolution
	▸ The Konica Minolta Magicolor 4650EN is a competent color laser printer that's both well priced and well made.			
8	Lexmark C780n **$899** find.pcworld.com/60051	★★★ GOOD	• Text quality: Very Good • Graphics/photo quality: Very Good/Very Good • Tested speed (ppm): 16.0 text/3.9 graphics	• 35 ppm text • 31 ppm graphics • 1200-by-1200-dpi maximum resolution
	▸ Despite the C780n's subpar reliability, this device's speed and print quality are worth the cost for busy offices.			
9	HP Color LaserJet CP2025n **$499** find.pcworld.com/61877	★★★ GOOD	• Text quality: Superior • Graphics/photo quality: Superior/Superior • Tested speed (ppm): 11.1 text/4.2 graphics	• 21 ppm text • 21 ppm graphics • 600-by-600-dpi maximum resolution
	▸ For the price, you get solid overall performance from this model—but a somewhat less solid-feeling package.			
10	Brother HL-4040CN **$349** find.pcworld.com/57915	★★★ GOOD	• Text quality: Superior • Graphics/photo quality: Good/Fair • Tested speed (ppm): 10.5 text/4.2 graphics	• 21 ppm text • 21 ppm graphics • 2400-by-600-dpi maximum resolution
	▸ This basic office printer balances good pricing, speed, and print quality; it has a sometimes-awkward design, however.			

CHART NOTE: Ratings are as of 2/9/10. Speeds are in pages per minute (ppm); resolutions are in dots per inch (dpi).

MORE ONLINE Visit find.pcworld.com/69507 to see in-depth reviews, full test results, and detailed specs for all printers on this chart.

PHOTOGRAPHS: ROBERT CARDIN

ACDSee Pro 3.0: Capable but Slightly Inefficient

THINK ABOUT ALL the images squirreled away on your hard drive—or on multiple drives. Finding them can be a challenge, which is where ACDSee Pro 3.0 ($170, upgrade $90) comes in.

The tabbed interface is divided into four areas similar to the steps in a photographer's workflow: Manage, View, Process, and Online.

Manage mode is where you import, organize, keyword-tag, batch-process, search for, rate, and compare images. All of the functions work smoothly. Unfortunately, Compare is a separate window, which can hamper efficiency. Likewise, the division of View and Manage seems counterintuitive. Having Manage, Compare, and View functions on a single tab would be more useful.

The Process mode now has two edit methods: Develop, which doesn't affect the integrity of images, and Edit for pixel-level adjustments. All image adjustments in both methods display immediately, with no lag.

As capable as the app is, it may be intimidating to a novice. The company provides guidance, at least: The opening screen is a quick-start guide, and the Help menu identifies the various features and tools.

If you don't mind the division of the interface, ACDSee Pro 3.0 might suit you. Check out the free trial download (find.pcworld.com/69505) and see for yourself.

—Sally Wiener Grotta and Daniel Grotta

ORGANIZING AND TAGGING your images is easy in ACDSee Pro 3.0.

★★★★½ **SUPERIOR**

ACDSee Pro 3.0 | ACDSee

Effective, advanced image manager might not suit every workflow.

List: $170, $90 upgrade

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Stylish Bluetooth Headsets Offer Good Sound Quality

I TRIED TWO hands-free headsets that offer attractive looks and clear audio. And despite their differences, I ended up liking them equally.

Aliph Jawbone Icon

Measuring 1.8 by 0.72 by 0.95 inches, the 0.28-ounce, $99 Jawbone Icon comes in six iridescent and pearly colors; the different versions have snappy names like "The Bombshell" and "The Hero."

According to Aliph, the Icon's battery provides 4.5 hours of talk time and 10 days of standby time.

Like older Jawbones, the Icon uses "Noise Assassin" noise cancellation. A small nub, the Voice Activity Sensor, rests on your face while the unit sits in your ear. In practice the feature worked well. When the nub slipped off my face for a bit, however, the other party heard a distinct drop in audio quality.

The Icon uses voice to communicate to users. If you press the talk button while no call is in progress, say, the Icon announces the remaining battery time.

You can download new voices from the Jawbone MyTalk site; currently you'll find a voice for each of the six Icon styles. You can also customize the talk button for voice dialing or for 411 information access; you can even set the unit to work with Jott Assistant for updating Facebook, Twitter, and other services by voice.

THE JAWBONE ICON comes in six styles, such as 'The Thinker.'

Jabra Stone

The Jabra Stone ($130) fits so neatly into its charging base that the combination really looks like a smooth, plastic stone. The headset and base measure 2.3 by 2 by 1 inches together.

The base contains a battery that, when charged, can fully charge the headset. The headset's battery alone offers up to 2 hours of talk time and 2.5 days of standby time, Jabra says; the base raises talk time to 8 hours and standby to 12 days.

THE JABRA STONE and its base can easily slip into a pocket.

Since the earhook is part of the device, the unit fits only on the right ear. The earhook is flexible but still somewhat rigid. The quarter-ounce headset comes with extra earbuds for a better fit.

Jabra's Noise Blackout Extreme technology enhances your voice while blocking other noises. The Stone also has Audio Shock Technology, which arrests spikes in volume. In my tests, callers had no problem hearing me even when I was in a noisy room.

—Robert S. Anthony

★★★★☆ VERY GOOD

Jawbone Icon | Aliph

A customizable, voice-driven interface sets this headset series apart.

List: $99

find.pcworld.com/69543

★★★★☆ VERY GOOD

Stone | Jabra

Headset with charging base offers convenience and high-quality audio.

List: $130

find.pcworld.com/69544

Palm Pre Plus: A Subtle Upgrade

THE PALM PRE Plus ($150 with a two-year Verizon contract) is mostly an update of the original Pre on Sprint—but subtle hardware tweaks, combined with Verizon's speedy network, make it an overall improvement.

The Pre's single button is absent here. Like Palm's Pixi and Pixi Plus, the Pre Plus includes a capacitive-touch area (with a light-up bar) below the screen. To shrink an app down to card size, you simply tap this area.

Palm says it enhanced the Pre Plus's keyboard, and I did notice that the keyboard was a bit more responsive than the original Pre's. The slider mechanism feels much more secure, as well.

Some of the problems I experienced with the original Pre remain on the Plus, however: For instance, I had to use my nails to type on the small keys, and I made a few errors in long messages.

One notable tweak is the Pre Plus's inductive battery cover; you can now use the phone with the Touchstone charger out of the box. The original Pre requires that you first swap out the standard cover for the inductive one.

The Pre Plus has 16GB of storage versus the Pre's 8GB.

THE PRE PLUS has a touch area instead of a hardware button.

With Palm adding 3D graphics and opening the WebOS SDK, we'll see a surge of apps—so more storage helps.

—Ginny Mies

★★★★☆ VERY GOOD

Pre Plus | Palm

Phone has expanded memory and other tweaks—plus a few quirks.

List: $150

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Canon SD940 IS: Sleek Looks, Nice Photos

THE EASY-TO-USE Canon SD940 IS captures good-quality images.

THE $300 CANON PowerShot SD940 IS resembles the PowerShot SD780 IS (find.pcworld.com/63445) in many ways. Both cameras offer 12-megapixel resolution, effective optical stabilization, 720p high-def video capture, about 20 scene modes, HDMI-out, and very good image quality.

★★★½ VERY GOOD

PowerShot SD940 IS | Canon

Stylish camera offers eye-catching design and appealing image quality.

List: $300

find.pcworld.com/69461

In PCWorld Labs tests, the SD940 IS earned a higher score than its sibling for overall image quality, with very high ratings for color accuracy, exposure, and flash exposure. Though it lagged behind the older model in sharpness and distortion, it still had an image-quality score of Very Good.

The SD940 IS took 290 test shots on one charge of its rechargeable lithium ion battery, about 30 shots more per charge than the SD780 IS.

Whereas the older SD780 IS's 3X-optical-zoom lens extends to 33mm on the wide-angle end, the SD940 IS has a 28mm-to-112mm lens with 4X optical zoom. The SD940 IS has a slightly bigger LCD screen (2.7 inches versus 2.5 inches), too—but unlike its sibling, it lacks an optical viewfinder.

The SD940 IS also has a few of the same drawbacks as the SD780 IS, such as a zoom ring and buttons that are a bit too small, and flimsy plastic doors. Also, while shooting video, you're limited to a digital zoom; you still can't zoom optically.

If you've been considering the SD780 IS, I suggest picking the SD940 IS instead. It has the same great looks and terrific performance, and it's one of the best ultracompact point-and-shoots we've seen.

—Tim Moynihan

FileMinimizer Suite Works Great, but Price Is Steep

IF YOUR HARD drive is clogged with photos and Microsoft Office documents, or if you need a way to share those large files, look to FileMinimizer Suite 6.0. This software reduces the file sizes of photos and Office docs, with no significant diminution in quality. If you want to shrink only a handful of files, however, its $80 price is probably too much.

The files that it creates retain their format and are usable just as the originals are. It handles Excel, PowerPoint, and Word files, plus various image file formats.

You choose the files and the compression strength (low, standard, or strong). By default it keeps your original and creates a new file, appending '(FILEminimizer)' to the name. You can, however, tell the app to overwrite your original or apply a different name.

In my tests using its standard compression, it reduced graphics files by approximately 90 percent on average, with little to no perceptible quality loss. Only when I zoomed in on fine details did I notice any degradation of quality on screen. (You will likely notice the difference in printed photos; if you plan to print, use low compression, which in my tests reduced photos' file size by about 80 percent.) Office file sizes typically shrink by 25 to 30 percent, with no loss of quality.

FILEMINIMIZER'S standard compression reduces file sizes skillfully.

The app integrates with Microsoft Outlook and Lotus Notes, so you can easily attach a compressed file to an e-mail message. And since it integrates with Windows Explorer, you can compress files by right-clicking them.

—Preston Gralla

★★★★½ SUPERIOR

FileMinimizer Suite 6.0 | Balesio

Shrinks photos and Office files well; pricey for a one-trick pony.

List: $80

find.pcworld.com/69496

Run CD or DVD Apps, Sans Discs

SWAPPING CDs and DVDs out of your optical drive is a pain—not to mention slow. It can take your drive and Windows up to half a minute to mount a disc.

Daemon Tools Lite (find.pcworld.com/69535) is a great freebie for mounting ISO and other disc images as virtual CD/DVD drives, but the paid Pro versions offer considerably more functionality. For example, both of them have a straightforward, easy-to-use graphical interface—no command-line visits for accessing advanced features, as there are with Lite.

The only real negative to Daemon Tools is that neither Advanced nor Standard (nor the free Lite, of course) handles copy-protected discs. If you don't need to virtually mount commercial games or DVD movies, however, one of the two Pro versions of Daemon Tools should provide all of the capabilities you need. With improved virtual-device support and image-type conversion capabilities, Pro Advanced is better suited than Pro Standard for heavy or specialized use.

—Jon L. Jacobi

★★★★½ **SUPERIOR**

Daemon Tools Pro

Daemon Tools

Handy utility saves you the hassle of swapping out optical discs.

List: €40 (about $55) Advanced, €25 (about $35) Standard

find.pcworld.com/69534

DOWNLOAD THIS

Files That Give You a New View of Windows

A SIMPLE BROWSER extension for Firefox and Chrome lets you mouse less, keeping your hands on the keyboard and your eyes on the screen. A special screensaver shows you the current weather as an attractive, animated scene. A Firefox-only add-on tracks the progress of your downloads, right in your browser window. And any way you look at these programs, they're free.

THE YOWINDOW SCREENSAVER portrays your location's actual weather conditions in a pretty, fictional scene.

GleeBox

Do your mousing muscles ache after you browse the Web? With the no-cost GleeBox experimental Firefox add-on and Chrome extension, you can perform many Web surfing tasks by using your keyboard rather than the mouse—including some tasks that require multistep actions. Install the GleeBox add-on into Firefox and type **g**, and you'll see a big, transparent gray box in the middle of your screen. Then type in a letter or a string of letters, and you'll be sent to the first link on the current page that contains that letter or string. The links on the page will be highlighted in yellow, too. When you are at any link, just press **<Enter>** to open it; to go to the next link, simply press the **<Tab>** key. If you want to minimize your mousing, this add-on is well worth a try.

find.pcworld.com/69529 *—Preston Gralla*

THE GLEEBOX ADD-ON for Chrome and Firefox lets you browse by typing, not mousing.

YoWindow

For those who prefer to dwell without sunlight, YoWindow offers a chance to see the weather without actually having to look outside. This cunning screensaver gets local weather information and then draws a pretty picture of rain, snow, or sunshine, as appropriate. I'm willing to replace my aging "pipes" screensaver with this one, as it will not only save my screen but also let me know if I need to find a coat or umbrella before I've made it all the way to the door.

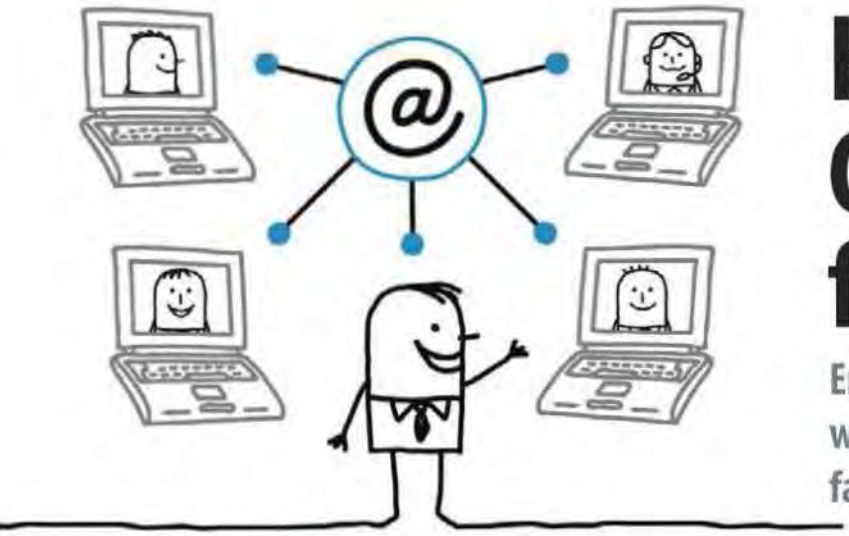
find.pcworld.com/69527 *—Ian Harac*

Download Statusbar

This add-on for Firefox offers an unobtrusive, streamlined way to track downloads. Instead of listing your downloads in the regular pop-up window, Download Statusbar tracks them in a new toolbar that appears at the bottom of the browser. A progress meter shows the estimated time and speed for the current files. It's easy to monitor your in-progress downloads as you surf, and the app spares you a separate window. The tool makes a fine addition to Firefox.

find.pcworld.com/69528 *—Erik Larkin*

THE DOWNLOAD STATUSBAR add-on for Firefox watches your downloads in the browser window.



HD Video Conferencing for Everyone

Enjoy Affordable HD Video Conferencing with Family, Friends and More with faceVsion Technology

FVexpress™ Combo

Empower your PC for HD video chat with award-winning VideoCam and the world's first PCI express card

FVexpress™ Combo packages faceVsion's award-winning high-definition VideoCam, **FV TouchCam™ L1**, with **FVexpress™**, the world's first PCI express card embedded with a chip-based H.264 encoding/decoding mechanism. The combination delivers best-in-class HD video chat experience to consumers who demand both high quality and the ability to instantly share videos with social groups and devices.

The Combo is also targeted for small office/home office users and small businesses in vertical markets such as education and training, health care, public services, finance and services.

Here's a look at some key product features:

- World's first express card, empowering any PC with an ExpressCard slot for two-way HD 720p, 30fps video communications regardless of CPU power
- FV TouchCam™ L1 VideoCam, which won the 2010 design award from International Forum Design (iF), features a 28mm wide-angle lens, native 2 megapixel sensor with autofocus, capable of delivering up to 30 fps True HD (720p) video calling
- Adaptive H.264 encoder and decoder allowing smooth live share of HD video/desktop in addition to HD video call over the Internet
- QuLives™ Manager (Gmail accounts required) for superior video communications and sharing experience empowers users to enjoy 720p 30fps video calls over 800 kbps bandwidth with excellent audio quality
- System ments include: minimum CPU speed of 1.6 GHz Atom or AMD® equivalent processor, PC memory of 1 GB or above, Microsoft® Windows® XP, Windows Vista™, Windows® 7, and ExpressCard slot and USB 2.0 ports

If a picture is worth a thousands words, then a video chat today with its sometimes blurry images and problematic audio is akin to the early days of television in the 1950s. Now imagine that same two-way conversation with a crisp, high definition display resolution and the ease-of use and networking infrastructure usually associated with high-cost video conferencing.

Today, consumers and small businesses alike can enjoy this kind of hassle-free HD video communication to stay in touch with friends, family and co-workers anywhere in the world. Thanks to technical breakthroughs from faceVsion Technology (FVT), anyone with an x86-based personal computer—regardless of CPU power—can achieve high quality, real-time, two-way, 30-frames-per-second HD 720p video communication over a standard broadband network.

Drawing from the company's HD codec and embedded systems design expertise, faceVsion's core technology embeds HD encoding and decoding algorithms at the chipset level, and optimizes video chat by using faceVsion's self-developed video communication software, QuLives™ Manager, for high definition image and audio quality under low bandwidth requirements. This cutting-edge solution is designed for use with faceVsion VideoCams and interoperates with standards-based third-party applications, including Google.

The recently announced Google partnership offers an HD 720p video chat experience to all Gmail users using faceVsion QuLives™ Manager and a scalable platform for interoperable video communication and sharing. The partnership, built on open standards such as XMPP and H.264, represents a true mass market solution for HD video conferencing at an unprecedented price and quality level.

To order or for more information, visit www.faceVsionUSA.com

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- World's first ExpressCard for 2-way 720p 30fps video communications
- H.264 encoder and decoder allowing live sharing of HD video over the internet
- 2010 iF award-winning FV TouchCam™ L1

FV TouchCam™ L1

iF product design award 2010

FVexpress™ Combo

HD 720P | 30 fps | H.264 | 2 Mega Pixel | Auto Focus | 28mm Wide Angle | Express Card | USB

FV TouchCam™ N1

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BY ADAM PASH AND RICK BROIDA
ILLUSTRATIONS BY ANDREW BANNECKER

[SYSTEM UTILITIES]

PC TWEAKS TO SAVE TIME AND OPTIMIZE YOUR SYSTEM

Windows is a great operating system, but that doesn't mean it always does what you need or want it to. These eight utilities will help you find a missing Recycle Bin, make your mouse more useful, fix Windows annoyances, and more. (Go to find.pcworld.com/69446 for access to the downloads in this section.)

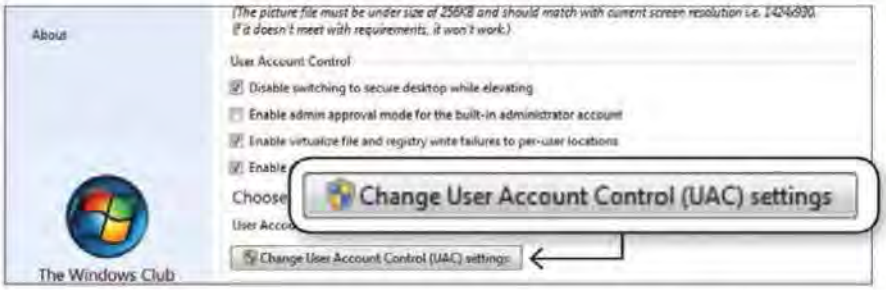
Ever copy and paste text from one document to another only to discover that unwanted text formatting came along for the ride? It can be downright maddening. Keep your sanity with **Better Paste**, a tiny utility written for Lifehacker (employer of Adam Pash, coauthor of this story) that automatically strips formatting from text when you press <Ctrl>-V to paste. Pressing <Ctrl>-<Shift>-V retains the formatting.

Recycle Bin inexplicably missing from your desktop? Thumbnails not working? The easy-to-use utility **FixWin** repairs—with point-and-click ease—common annoyances related to Windows Explorer, the Internet, Media Player, and other system tools.

Using Windows Update keeps your operating system up-to-date, but what about third-party applications? **Ketarin** scans your installed programs and then checks for and downloads any updates to ensure that you're running the latest versions.

You don't have to install an entirely new OS if you ever feel the urge to experiment with Linux, specifically Ubuntu. Just install **Portable Ubuntu Remix**, and you can run Linux applications seamlessly on your Windows machine.

If you get impatient while waiting for Windows to copy large files from one folder to another, try **Teracopy**, which can copy files significantly faster than Explorer can. The utility has advanced features that allow you to pause and resume transfers, too.



ULTIMATE WINDOWS Tweaker gives you access to a variety of options for adjusting your OS.

In the golden days of XP, a small utility called TweakUI was every system tweaker's dream—unfortunately, it doesn't exist for newer Windows releases. But **Ultimate Windows Tweaker** lets you optimize every little corner of your Windows 7 or Vista installation.

To help you find your data easily, Windows 7 aggregates files and folders from all over your computer into a few special groups, called Libraries. You can make your libraries even better with Zorn Software's **Win7 Library Tool**, an easy-to-use download that can add the contents of networked folders to libraries, back up library configurations, and even change your library icons.

Say that you're working in another window when a picture in your Web browser catches your eye. You move your mouse to the image and spin the scrollwheel to enlarge it—but nothing happens because the browser isn't your active window. **Wizmouse** is a small, single-purpose app that makes your mouse's scrollwheel work with whatever window your mouse is hovering over, active or not.

Note: All items in this story were free at the time we went to print.

[PC CUSTOMIZATION]

Windows 7 Bling for Your Older OS

Even if you're happy with your current Microsoft OS, you still might want to snag a few of Windows 7's innovations, such as transparent windows or eye-candy icons. These five apps will help. (Go to find.pcworld.com/69455 for the downloads in this section.)

AeroSnap: Maximizing a window on today's large monitors is often a waste of real estate. In Windows 7, a feature called Aero Snap lets you resize a window to fill half of the display by dragging the window to the screen's edge. Kick a space out of the name, and you have AeroSnap, an app that gives XP and Vista the same feature.

Seven Remix XP: Windows 7's visual appeal definitely sets it apart from the aging Windows XP. But this transformation pack makes XP's boxes, icons, buttons, and Start menu look remarkably like the new OS's versions.

Taskbar Shuffle: The new supercharged Windows 7 taskbar allows you to reorder any of your taskbar items with a simple drag and drop. XP and Vista users can enjoy the same functionality with the help of this lightweight system-tray utility.

Windows 7 Shortcuts: Win 7 introduces gobs of time-saving keyboard shortcuts for moving windows around your desktop, focusing on specific windows, or taking a quick peek at the desktop. This download installs a tiny system-tray utility that adds them to your XP or Vista machine.

WinShake: Windows 7's Aero Peek feature turns your windows transparent, giving you X-ray vision for determining what lies beneath. Its Aero Shake function lets you minimize every window but the active one via a simple shortcut. This application brings similar capabilities—and then some—to most of Win 7's precursors.

PHOTOGRAPH/ILLUSTRATION CREDIT

[PRODUCTIVITY]

GET THINGS DONE FASTER

With these 11 programs and services, you can share large files, save ink, keep tabs on action items, and improve your efficiency. (Go to find.pcworld.com/69463 for the downloads in this section.)

DoPDF Free PDF Converter: Want to turn a Word document, Excel spreadsheet, or Web page on your PC into a PDF? Install this download and then choose the Print command in the app you're using. Select the DoPDF "printer" and tweak the settings, and you're done.

Drop.io for Outlook: If there's an easier way to share big files than the Drop.io Web service, we haven't found it. And now you can grab the beta plug-in for Outlook (or add-ons for Chrome and Firefox). It lets you select up to 100MB of files and then choose your own custom download URL to share them.

Ecofont: This font set looks a lot like the familiar Arial typeface, but with one key difference. Each letter has holes punched in it, and so requires less ink to print—which means that you'll spend less money on ink cartridges.

Everything: This app indexes all of the items on your hard drive and then performs lightning-fast searches for files and folders. The tiny program takes the place of the regular search function in Windows 2000, XP, Vista, and 7, and it produces dynamic real-time results.

FlockDraw: If you have an idea that you need to express visually to people who aren't in the same room, this Web-based service can act as a shared cocktail napkin. Invite other people to view your drawing and even to draw along in real time. www.flockdraw.com

Fonolo: Sick of navigating phone menus? This Web service, which gives you access to the phone menus for common customer-service numbers, lets you pick any menu item and then connects you right to it. www.fonolo.com

iCurrent: Personalize this free news site to match your interests. This beta service shows you news in your chosen areas, in the familiar format of a daily paper. It can take some work to set up, but it's good for keeping track of a wide range of subjects. www.icurrent.com

Liaise: Many e-mail messages represent action items—things you need to schedule, track, and do. This Outlook add-in automatically recognizes action items as you type a new message, and then keeps tabs on them and helps you finish them on time. www.liaise.com

MakeSomeTime: Invoice management poses a challenge for the self-employed. Sign up with MakeSomeTime to keep tabs on invoices, clients, projects, and billable time, all within your browser. The free plan lets you manage up to five clients and send one invoice per month. www.makesometime.com

ScreenToaster: You need to show Uncle Al (who lives halfway across the country) how to copy and paste text in Word? Create a "screencast"—a recording of your PC's screen—and send him the video. Sign up at the ScreenToaster site, press <Alt>-S, and you're recording. Once you have finished that, you can add captions and then upload the video to the site's servers or to YouTube, or download it as an AVI file. www.screentoaster.com

Tom's Planner: Gantt charts, with their overlapping color bars, are nice for visualizing a schedule—but making them can involve painful data entry. With Tom's Planner (free for a year with sign-up during the beta), you go straight to the final product. www.tomsplanner.com »

COLLABORATION

Get together via business chat, secure screen sharing, and microblogging.

SERVICE	What it does	Why we like it
LogMeIn Express find.pcworld.com/69488	Enables secure screen sharing; perfect for troubleshooting a relative's or friend's PC from afar.	Nothing to install. The sharer downloads and runs a tiny app and then gives a 12-digit code to the person taking control remotely.
MiNeeds www.mineeds.com	Connects you with local service pros—from attorneys to house cleaners to wedding planners.	Just post your "need" and then wait for bids. Compare offers, view each professional's credentials, and read reviews left by other customers.
Tinychat tinychat.com	Creates "disposable" chatrooms for on-the-fly meetings with coworkers or weekend planning sessions with friends.	Easy to use. Simply create a name for your chatroom, and invite people via Facebook, Twitter, or e-mail.
Yammer www.yammer.com	Offers Facebook-style functions for individual businesses, allowing employees to communicate in a variant of a private social network.	Ample collaboration features, such as microblogging, file sharing, and groups within the network.
Zoho Discussions discussions.zoho.com	Adds a feature-rich discussion forum to any blog, product page, site, or other online destination.	An easy way for small-business owners, bloggers, and other site managers to converse with readers.

[DESKTOP CUSTOMIZATION]

TAKE WINDOWS TO ANOTHER DIMENSION

Use these eight downloads and services to build 3D desktops, creatively launch or minimize programs, and keep your workspace tidy in other ways. (Go to find.pcworld.com/69462 for access to the downloads in this section.)

Are you fond of pinning notes and photos to the walls and arranging your documents into stacks? That's the idea behind **BumpTop**, a 3D desktop designed to bring a real-world organizational approach to your computing life.

Don't have room on your desk—or money in your wallet—for a second monitor? No problem: **DeskHedron** supplies you with "virtual" 3D desktops (up to nine of them, in fact) that you can flip through by using either hotkeys or your mouse's scrollwheel.

USE FENCES TO put your icons in order, as well as to make them appear and vanish.

Fences organizes your icons into translucent, windowlike areas. And with a double-click of the desktop, you can make everything disappear (another double-click restores everything). It's a must-have app for neatness freaks, or for anyone whose icon collection has gotten out of control.

Windows 7 can automatically cycle through wallpapers at designated intervals, so be sure to stock it with plenty of pretty pictures. For an attractive assortment of images, sign up to use the beta **InterfaceLift** wallpaper library, which has more than 2000 selections that you can sort by resolution or by the number of monitors. You'll even find mobile-ready images for iPhones and other devices. find.pcworld.com/69491

Everybody has a favorite method for launching programs. If you haven't found yours yet, though, download **Krento**. It creates a slick, rotating 3D circle of up to 12 of your favorite applications (and it supports multiple circles if you want to categorize them). You can also skin Krento, invoke it using a variety of mouse/keyboard methods, and add favorites by dragging and dropping.

Give your desktop a complete overhaul with **Rainmeter**, a beautiful display complete with resource monitors, news feeds, a to-do list, and more—all seamlessly embedded on your desktop and completely customizable. It works with Windows XP, Vista, and 7.

The concept of "stacks" is familiar to any Mac user, and now Windows users can have them, too. **StandaloneStack 2** creates eye-pleasing animated shortcuts—aka stacks—for the contents of any folder on your system. Such a function usually requires a desktop dock program, but this download gets you straight to the good stuff.

Forget minimizing programs to the Windows taskbar where you can't see what they're up to. **T3Desk** minimizes them to the desktop, shrinking each one to the size, transparency, and 3D viewing angle of your choice. All it takes to bring any window back to the forefront is a single click.

[BROWSER APPS, ADD-ONS, AND UTILITIES]

You Live in Your Web Browser—Enhance It

The following five tools and services allow you to recover information you typed into forms, add narrations to presentations, turn PDFs into editable documents, and more.

CeeVee: Register to assemble a polished-looking résumé with this Web service, and then share it online via Facebook, Twitter, or a custom Web address. It's fast, easy to use, and proof positive that you're a Web-savvy applicant. ceevee.com

Lazarus: This convenient Firefox add-on records every keystroke you enter into blog tools, comment boxes, e-mail forms, and the like. To magically restore the items you typed, just right-click and choose *Recover Text* or *Recover Form* from the context menu. find.pcworld.com/69465

MailBrowser: Manage your contacts, attachments, and other details in Gmail. Available for Firefox and Internet Explorer, this beta add-on reveals information about each contact, integrates with Google Calendar for simple appointment scheduling, lists all of the received attachments for a given contact, and creates local, searchable copies of them. find.pcworld.com/69512

MyBrainshark: This presentation-hosting service lets you add narration to a presentation just by picking up your phone. All you do is sign up, upload your PowerPoint slide deck, and then call a special number and start talking. my.brainshark.com

PDF to Word: This Web service transforms PDFs into edit-ready documents. Simply upload your file and choose your desired output format, either Word or Rich Text Format. Then sit tight until the service sends you an e-mail with a link to download the converted document. www.pdftoword.com

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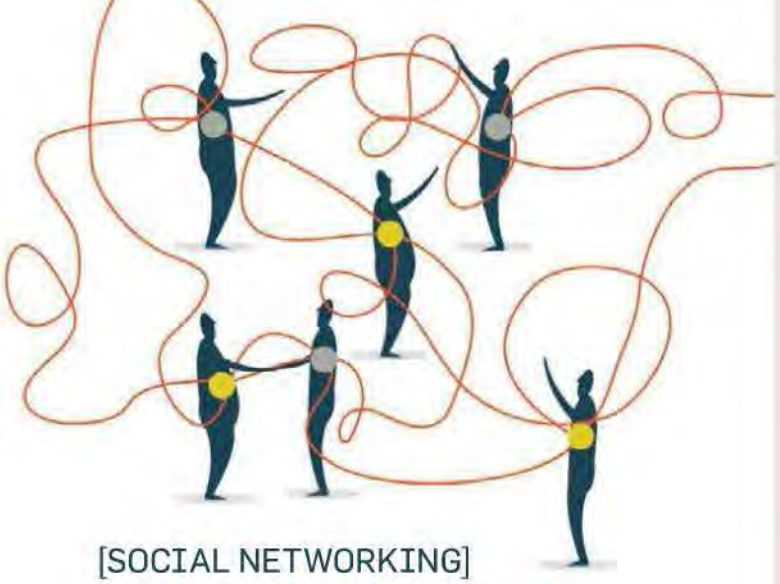

[SOCIAL NETWORKING]

CONNECT FASTER WITH WEB FRIENDS

These eight freebies will streamline interfaces, help you share photos, and use social networks more effectively. (Go to find.pcworld.com/69466 for the downloads in this section.)

Tired of Facebook's cluttered interface and Twitter's boring one? Sign up with **Brizzly** to give both services a simple, classy makeover. You can still tweet and retweet, write on walls, and do all the other core Facebook/Twitter stuff. brizzly.com

Everyone loves sharing photos on Facebook, but downloading shots from a friend's album is a hassle. Facebook Photo Album Downloader, aka **FacePAD**, is a Firefox add-on that lets you grab entire albums (including event and group albums).

Want to make shopping online a group sport? Add a bookmarklet for the beta service **FriendShopper** to your browser. When you see something on the Web that interests you, click the bookmarklet and save the page, share it with a friend, or do both. www.friendshopper.com

The ultrastylish **Microsoft Silverlight 4 Beta Client for Facebook** delivers not only the usual Facebook elements but also a cool animated photo grid and a better photo-uploading tool. It's currently a "developer preview," so expect a few bugs.

Outlook lets you link photos to contacts. And most Facebook users have profile photos on their accounts. How shall the twain meet? Use **OutSync**, which copies photos of your Facebook friends into matching contacts in Outlook.

PhotoGrabber runs independently of your browser, and downloads photos tagged with your name or with the names of your friends. It's great for rounding up snapshots that land in other people's albums without your knowledge.

The browser-based beta **Splitweet** lets you tweet to one or more accounts simultaneously; read, reply to, and share updates from users you follow; and track mentions of any "brand" names you want (your company's name, a competitor's name, a product line, and so on). www.splitweet.com

Don't want to run a full-blown Twitter client (like TweetDeck)? The Outlook add-on **TwInbox** brings tweets to your inbox and has a toolbar for updating your status, retweeting, sending direct messages, and performing other tasks.

[BACKUP AND STORAGE UTILITIES]

Keep Your Data Safe and Organized

Among these seven offerings are tools that enhance backups, make drive images, provide free storage, and more. (Go to find.pcworld.com/69469 for the downloads in this section.)

Sure, you regularly back up local data. But what about Facebook contacts, Twitter feeds, and Flickr photos? If you don't trust the cloud, sign up for **Backupify** to get 1GB of storage, weekly backups of your online accounts, and the ability to download backups to your PC. www.backupify.com

Similar to Windows' own System Restore, **Comodo Time Machine** can roll back your PC to an earlier state. However, this download does more than just protect the Registry and your system files: It backs up files, folders, and programs, as well. Windows won't load? Press <Home> while booting to access all of CTM's roll-back features.

Macrium Reflect Free Edition images your hard drive for restoring your PC in the event of a disaster. This download can run automatically at set times, too. The interface requires some understanding of the XML data format, however.

Windows Live SkyDrive gives you 25GB of free online storage, and **SDExplorer** allows you to access that storage from Windows Explorer. No more wrangling Live SkyDrive's awkward Web interface—this extension brings drag-and-drop simplicity to file management.

CREATE A DISK image in Macrium Reflect to protect against data loss in a disaster.

SpiderOak gives you 2GB of free online backup space, a perfect amount for preserving small batches of data such as Word documents or Quicken files. This download runs in the background, saving your selected files whenever it detects changes. It can archive data stored on network drives, too.

Courtesy of Microsoft, the **SyncToy** utility syncs files between two home-network locations, such as a desktop and a laptop, or a flash drive and a network folder. Just choose a "left" and "right" folder and specify a few sync settings.

Compatible with Windows 2000, XP, Vista, and 7, the **Todo Backup** download creates an image of your entire hard drive or an individual partition. You can restore that backup from within Windows or via a bootable CD, which the download can burn for you. Note: This tool has no scheduling option. »

[VIDEO]

What's on the PC Tonight?

Find and organize media with these eight tools. (Go to find.pcworld.com/69475 for the downloads in this section.)

Boxee Beta: This open-source application plays back desktop and Web-based media seamlessly on your HDTV.

Classic Cinema Online: At this Website you can find and view hundreds of freely available classic films, neatly organized by genre. find.pcworld.com/69508

WITH THE BOXEE beta, you can view your digital video on your HDTV.

Clicker: This site aggregates Internet video, giving you a central source for your favorite TV shows. www.clicker.com

DoubleTwist: If you're using a non-Apple cell phone or MP3 player, this download is a great iTunes alternative.

Hulu Desktop: Download this remote-friendly desktop app to liberate Hulu's streaming video from your browser.

Jinni: This beta recommendation service helps you select videos to watch by their components, such as mood or plot. www.jinni.com

Libox: Sign up for this desktop app to create a private network for sharing large media files. www.libox.com

ShowMeWhatsWrong: The next time you need to help someone remotely, point your relative or friend to this Web service, which makes it dead simple for tech neophytes to record and share quick screencasts to demonstrate their PC problems. showmewhatswrong.com

[THE BEST OF THE BEST]

ALL-TIME GREATS

In our 15 years of choosing the best free stuff, we've spotlighted the superstars: Adobe Reader, Craigslist, Flickr, Gmail, Google, Mozilla Firefox, and Wikipedia. Here are ten more classics. (Go to find.pcworld.com/69511 for the downloads listed.)

Ad-Aware Free: Excellent at stopping spyware.

Audacity: This surprisingly powerful open-source tool can record sound as well as edit it.

BitTorrent: Easy-to-use file-sharing tool lets you pause, resume, and otherwise control downloads.

Dropbox: Download offers 2GB of file syncing among multiple PCs and the Web.

Evite.com: Website lets you create and e-mail party invites and track RSVPs online.

FreeConference.com: Schedule and make unlimited conference calls with this service.

IMDB.com: How did we ever settle bar bets without the Internet Movie Database?

OpenOffice.org: This downloadable Microsoft Office competitor gives you a word processor, a spreadsheet, a presentation program, a database, and a drawing app.

The GIMP: In this oddly named image editor, you'll find many of the same photo tools that come with Photoshop, including filters, effects, masks, and layers.

Trillian Basic: From one interface, you can chat with many instant messengers.

[MOBILE TOOLS]

ON-THE-GO ASSISTANCE

Embrace the mobile lifestyle with the help of these five programs and online services. They'll let you recover a lost smartphone, strip Web content down for easy downloads, turn a PC into a Wi-Fi hotspot, and more.

BlueRetriever: Misplacing a must-have mobile gadget makes you frantic. For a little peace of mind, sign up with this Web service, which provides a simple way for someone who finds your lost device to return it. You can even offer the finder a reward, from good karma to money. www.blueretriever.com

Connectify: Ever find yourself stuck in a room with just one wired ethernet connection and a whole lot of computers begging to browse the Web? Simply run this download on your Windows 7 laptop, and turn your portable into a Wi-Fi hotspot that you can share with others. find.pcworld.com/69472

Instapaper: The Web runneth over with content worth reading—but you certainly don't want to spend your entire life parked in front of your computer. This Website lets you bookmark anything to read later, stripping the page's content to bare text for your computer, iPhone, or Kindle. You can even go completely old-school and print it out. www.instapaper.com

OverMyMinutes: Cell phone plans aren't cheap—and if you exceed your allotted minutes, the overage charges will bleed you dry. This Web service monitors your minutes and sends you alerts when your remaining minutes drop below a threshold that you define. An app is available for iPhones, too. www.overmyminutes.com

Xpenser: If you travel for work, you know how much of a pain tracking your expenses can be. Rather than forget another expense, try this smart service, which helps you track your expenses through its Website, e-mail, SMS, IM, and even Twitter. www.xpenser.com »

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[SECURITY]

PC SAFETY BOOSTERS

Your computer should be a safe place to work. Secure your machine in a snap with one or more of the following four tools and services, including a password manager and spyware fighters. (Go to find.pcworld.com/69470 for access to the downloads in this section.)

Passwords play a prominent role not just in computing but also in everyday life. Download **KeePass** to organize and protect all manner of important data, from ATM codes to Social Security numbers to Web passwords. You need remember only a single password—this download remembers the rest.

OpenDNS promises to protect your children from online violence, pornography, phishing, and other undesirable elements of the Internet. Guess what? It works. Even better, you have nothing to install. Simply sign up for the service and point your PCs or router to the OpenDNS servers, and presto: bullet-proof protection. www.opendns.com

Its name seems a bit over the top, but **SuperAntiSpyware** is a robust, legitimate malware fighter. This download runs in the background and staves off and removes even the nastiest attacks.

Clicking any link that you find on the Web—even one that appears at the top of a Google search results page—can lead to a spyware infestation. Try the free browser plug-in **Web of Trust**, which vets the links you click. Green means good, red means bad. Simple.

[MUSIC]

Uncommon Audio Apps

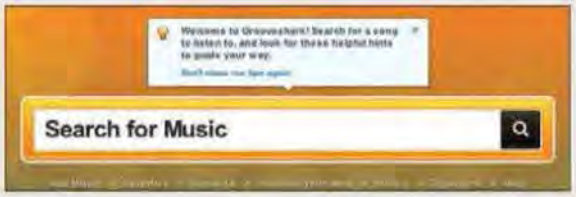
Let these seven music-centric freebies help you find, edit, and manage tunes.

The next time you get an earworm from the catchy background music in a YouTube video or some other file and you can't identify it, head over to the beta service **AudioTag** and allow it to identify the song for you. audiotag.info

Tune out the world at **Buddha Machine Wall**, a stripped-down Website whose custom ambient noise will help keep you focused. www.zendesk.com/external/wall

When you need to turn to the Web for music, look to **Grooveshark**. This service can play almost any song you request, and it sports a beautiful interface for seeking out music and building playlists. www.grooveshark.com

You say that you've been ripping, burning, and sharing music for years? Chances are, the audio files on your hard drive are a metadata disaster. Quickly clean things up with **Mp3Tag**, a universal tag editor that supports virtually every audio file type you're likely to own. find.pcworld.com/69478



ON GROOVESHARK, you can find and enjoy just about any tune you desire.

If you need to do a little light audio editing and you don't want to download and install a full-fledged desktop application, sign up for Aviary's **Myna**, an impressive online service that lets you handle advanced audio editing from the comfort of your Web browser. aviary.com/tools/myna

Are you listening to music on your tinny, underpowered laptop speakers, while your PC's fancy speakers sit unused? Download **Speakershare** to share the better equipment with other PCs on your home network, whether you're sitting in front of those speakers or not. find.pcworld.com/69474

If you aren't satisfied with streaming music you find online, dip into your collection with **TunesBag**. A free account lets you upload 1GB of music from your PC to the Web so that you can access your songs from any browser. www.tunesbag.com »

ANTIVIRUS

In PCWorld's tests, these four free antivirus programs were among the best.

DOWNLOAD	Pro/Con	Bottom line
Alwil Avast Home Edition	Capable malware detection/ Confusing interface	★★★★½ Solid antimalware protection.
Avira AntiVir Personal	Excellent detection and disinfection/ Interface not novice-friendly	★★★★½ Top-notch protection, scan speed.
AVG Anti-Virus Free Edition v8.5	Good PC disinfection/ Slow on-demand scans	★★★★ Useful blocking of Web-based attacks.
Microsoft Security Essentials (beta)	Nearly perfect in disabling infections/ Somewhat slow	★★★★ An effective utility.

CHART NOTE: All four downloads are available at find.pcworld.com/69470.

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[TIMESAVERS]

Add More Minutes to Your Day

PCs are supposed to make life easier. That may actually happen if you use these six resources to avoid repetitive typing, to reboot a PC efficiently, and to gain time in other ways. (Go to find.pcworld.com/69476 for access to the downloads in this section.)

You have enough to worry about without taking time to prune cluttered folders. The system-tray app **Belvedere**, an automated file manager, moves, copies, renames, and deletes files based on rules you define. Disclosure: This app was written by article coauthor Adam Pash.

Rebooting your PC while you're working is a huge time sink. Startup utility **Cache My Work** takes note of the applications running at the restart, and then automatically reloads them when the machine reboots.

Installing a new OS? Don't hunt for, download, and install your must-have free apps separately. Instead, try **Ninite**. Once you select your apps, this brilliant service installs them all in the background (skipping toolbars and crapware). www.ninite.com

Don't type the same text strings—e-mail addresses, phone numbers, snail-mail addresses—countless times. The **PhraseExpress** system-tray utility monitors your typing for predefined bits of text and expands them into larger snippets.

No time to keep up with your Web reading? Install the **Read It Later** Firefox extension—or download the smartphone app—to mark content for enjoying later, online or off.

For a window into your productivity, sign up with **Rescue Time**, which monitors the apps you use and the sites you visit and then uses fancy graphs to break down how you spent your day. www.rescuetime.com

SELF-IMPROVEMENT

These six helpers assist you in reshaping your life with the power of the Internet.

APP OR SERVICE	Focus	What we like
BudgetSketch www.budgetsketch.com	Budgeting	Helps you track where your hard-earned money will go—before you spend it.
DailyBurn dailyburn.com	Diet, exercise, and weight	Offers motivating charts and graphs for tracking your fitness regimen's progress.
Habitforge www.habitforge.com	Changing habits	Provides three weeks of daily reminders and progress tracking to help you achieve your goals.
Learn10 www.learn10.com	Language skills	Presents ten new foreign-language vocabulary words a day. Currently covers about 20 languages.
RunKeeper Free find.pcworld.com/69490	Jogging	Uses your iPhone's GPS feature to track your runs on a map, and then uploads results to its Website.
YouTube EDU find.pcworld.com/69489	Education	Hosts videos of lectures from the likes of Harvard, MIT, Stanford, and Yale.

[PHOTOS]

TOOLS FOR SHUTTERBUGS

Whether you're an amateur occasional snapshooter or an avid photo uploader, these five tools can help you get the best from your images. (Go to find.pcworld.com/69477 for access to the downloads in this section.)

THE WEB-BASED Phoenix image editor has an array of desktop-like tools.

Easy Poster Printer is a desktop application that lets you adjust any high-resolution digital photograph and print it as a poster (which, at its largest, can be 21 by 21 yards). You print out your poster in sections and then simply assemble the final product.

Photographers call the day's first and last hour of sunlight the *golden hour* in honor of the great light that's available during those time periods. Plug your location into the Google Maps mashup **The Golden Hour Calculator** to determine the exact times when it arrives. www.golden-hour.com

Photoshop may be the king of photo editing tools, but it's also expensive and too powerful for most users. The desktop app **Paint.Net** is a lightweight, powerful, and easy-to-use alternative that can handle almost any editing task.

Want to quickly punch up a few photos before you share them on Facebook or Flickr? Sign up with Aviary's **Phoenix** image editor, an impressive tool that looks and feels like a desktop image editor but lives on the Web. aviary.com/tools/phoenix

Digital photos can reach many megabytes in size, so uploading images that you haven't resized can be slow. Download **Shrink Pic**, a simple but ingenious utility that automatically resizes images when you upload them to the Web.

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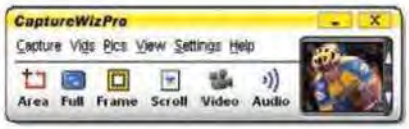

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Restaurant Pro *express*

Point of Sale Solution for Restaurants

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KEY FEATURES

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Table Selection Screen

Pizza Ordering Screen

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FIND YOUR WINDOWS 7 DESKTOP

If you steered clear of Vista (or bought it and regretted the decision), you're probably overdue for a desktop system with Microsoft's new, nonhated OS. We've surveyed the field, from inexpensive space-savers to the latest full-featured towers, to help you pick the perfect PC. »

BY NATE RALPH
PHOTOGRAPHS BY ROBERT CARDIN

Remember when buying a desktop computer was simple? You'd stroll into your local electronics boutique, pick out the homely beige box with a logical moniker that perfectly complemented your needs (and a copy of Windows XP), and then head home, eager to begin what was sure to be an effortless setup and installation process. No? We don't either. The PC market has always been inundated with more options than the average shopper could hope to puzzle through, and the march of time has only complicated matters. Even the act of buying a desktop has been muddled, as towers of varying sizes have been joined by computers of entirely new designs.

Fortunately, the most important choice you can make is also the easiest: Whatever shape, size, and price range you settle for, you'll want your new PC to run Windows 7. The disappointment of Vista is still fresh on many minds, but Microsoft's latest operating system offers improved performance, surpassing even the venerable Windows XP. And while each class of desktop offers divergent capabilities, strengths, and weaknesses, they also take advantage of Windows 7's features in their own ways.

We tested a number of Windows 7–based desktop computers spanning the three major categories: compact PCs, all-in-ones, and the traditional tower. The six systems that we discuss here represent new and notable entries in each of those categories.

The Right Tool for the Right Job

The first step in buying a PC is identifying a need: Who is going to use the machine, and why? You might be tempted to buy Grandma an inexpensive e-mail appliance, to help her keep in touch. But what if she wants to stream *Matlock* in high definition to her living-room TV, edit and store terabytes of family photos, or video-blog her cooking show? A pricey, high-end desktop computer could handle those tasks with aplomb. The trick is to know what you want and, as a smart shopper, to find a machine that delivers exactly what you need in a convenient, cost-effective manner.

Compact Desktops

As the smallest members of the desktop family, compact (or "mini") PCs tend to favor size over performance. A combination of low-power, energy-efficient components and quiet operating decibels makes compact PCs cheap to purchase and affordable to maintain. You're likely to find them serving in small living rooms, as Internet access points, or deployed en masse in an office environment, where a low price and energy efficiency help the balance sheet. They also make handy companions for cash-strapped students.

Many compact PCs come pitched as Lilliputian media dispensers. Equipped with power-efficient CPUs, HD-friendly integrated graphics, roomy hard drives, and HDMI connectors, they're designed to live beside (or behind) your television set, streaming Web content to your TV for a fraction of the cost of traditional set-top boxes or a cable subscription. Read our online stories "7 Savvy Tips for the Web Video Underground" (find.pcworld.com/69417) and "Cable Cutters" (find.pcworld.com/69416) for more on such uses.

Compact PCs have become a good choice for home theater use in recent years, if you don't mind sacrificing a little processing power. Besides streaming content, they're a good set-top DVR alternative. The mainstream editions of Windows 7 (Home Premium, Professional, and Ultimate) have Media Center software; this software, with a TV tuner installed in your PC, lets you watch and record TV. You could also install DVR software such as SageTV or even the familiar TiVo interface (find.pcworld.com/69426).

With Windows 7 alleviating much of the bloat associated with Vista, you can enjoy the operating system without dragging your little machine down. Sure, some mini-PCs still run Windows XP, much as their netbook counterparts do. And our tests show that Windows XP will perform slightly better on some Atom-based machines. But you would be missing out on the streamlined media-sharing experience afforded by Windows 7's HomeGroups and its Internet TV functionality, among other improvements.

For more mini-PCs than we can cover here, turn to our chart at find.pcworld.com/69447 to see a list of our favorites.

All-in-One Desktops

A decidedly different approach to fitting PCs into small spaces is what's known as the all-in-one. These slender computers are essentially the laptops of the desktop world: Their components are built in behind their displays, giving you a full-fledged workstation with a minimal footprint.

They're more than attractive. Many all-in-one PCs include touchscreens, which offer a novel way to interact with your computer. Windows 7 added native support for multitouch gestures, letting you navigate the operating system using nat-

Which Kind of DESKTOP Is Right for You?

Compact PC

PRO: If you're on a shoestring budget and you just want to send a few e-mail messages, a compact PC can get you on your way for as little as $200 (sans monitor). If high-def video strikes your fancy, you'll want a machine equipped with an nVidia Ion processor, for improved Flash and video decoding, and an HDMI output, for HDTVs. Such PCs start at just over $300.

CON: Sometimes, bigger is better. Gaming, or even heavy multitasking, on a low-power, compact PC can be an exercise in futility. The price-to-performance ratio works against you, too: For $400, you could acquire a budget desktop that offers stronger performance, albeit in a larger package. You may also need to supplement your mini-PC with external peripherals, such as a hard drive or an optical drive, if the model that you've purchased lacks key features.

All-in-One

PRO: All-in-one PCs are self-contained—the innards are mounted behind displays typically ranging between 18 and 27 inches. Many models tout their wireless functionality (wireless keyboards and mice, Bluetooth support, and wireless Internet connectivity). This keeps cord clutter at a minimum, an important consideration in spaces where a rat's nest of cables may clash with a neat, spare décor. You are also likely to end up with a single-touch display—but even multitouch support is becoming more common on budget all-in-ones now.

CON: All-in-ones may flaunt a small size, but their svelte dimensions often require notebook processors, to mitigate heat and power limitations. As a result, PCs of a traditional size generally offer equal or superior performance, for less. All-in-ones priced between $500 and $1000 typically offer a 20-inch screen, but performance will be on a par with that of netbooks and low-end PCs. Paying more will get you a larger screen and superior performance, but often with the trade-off of limited upgrade options.

Tower

PRO: A system that is built with the right components will play the latest video games, stream movies and music to every media outlet in your home, store a lifetime's worth of memories, and give you the computing power you need to create rich media content. The right tower is also readily upgradable—an important consideration, as that will let you keep your machine in top shape for years to come.

CON: The Achilles' heel of towers hasn't changed over the years: Their girth, relative to smaller PCs, can make them at once unsightly and ungainly. Noisy fans can ruin the home theater experience, but they are quite necessary to prevent hardware failure in such high-end performance machines. Those large fans will also accumulate dust, especially if you have pets in the house—so keep a vacuum handy (air circulation is vital to a tower computer's health). And then there is the silent nemesis of power consumption: A top-of-the-line computer can generate an impressive bump in your monthly electricity bill.

ural hand motions. You can flick Web pages to travel back and forth through your browsing history, pan through documents with your fingers, or pinch images to zoom in on them, much as you would on an iPhone.

Lower-end all-in-ones often sport screens with only single-touch capability, but more PC makers are taking advantage of Windows 7 by providing multitouch displays at a lower cost.

With no cords to manage or peripherals to juggle, setting up an all-in-one PC can be as simple as pulling the machine out of the box and finding a power outlet. Just keep in mind, though, that this convenience can become a double-edged sword: As with laptops and most other self-contained gadgetry, you may find yourself out of luck if you decide later on that you would like to upgrade particular components.

Cost and screen sizes vary. Depending on which is more important to you, browse to our "Best Big-Screen All-in-One PCs" chart (find.pcworld.com/69448) or to our "Best Budget All-in-One PCs" chart (find.pcworld.com/69449).

Tower Desktops

Tower PCs are the most familiar member of the desktop family, and their chief strength is versatility. You'll find desktops in all shapes and sizes: petite minitowers, gaming behemoths bedecked in LED bulbs, and the midsize tower, aimed at mainstream users. Need more room for your family photos, or music? Open up your case and add an extra hard drive. Has your machine lost its pep? Pop in a stick of RAM, or swap out an aging motherboard for a newer model.

If you aren't afraid to get your hands a little dirty—or are willing to take your machine to a shop—no other category comes close to matching a tower desktop's flexibility. The right components can prepare your system to tackle almost any task, whether you're slaying dragons or rendering them.

You'll want to get the best possible performance out of your workhorse, and Windows 7 is faster overall. But Microsoft has also reworked how the operating system runs multithreaded applications, such as image editors and games. »

This is an especially important change for computers that sport multicore processors—a feature of the great majority of new tower PCs—as they will see snappier performance under Windows 7 than under either Windows XP or Vista.

On the other hand, a plethora of options isn't always a good thing. Tower systems are arguably the most confusing category of the desktop bunch, because the dizzying range of choices and price ranges here can have you buying far more machine than you need if you don't do your research.

To narrow down your options, go online to see our charts for our favorite budget desktops (find.pcworld.com/69451), mainstream desktops (find.pcworld.com/69452), and performance desktops (find.pcworld.com/69453).

You have lots to consider when shopping for a new desktop. But take heart: A look at the following models can bring focus to your search and help you make the right choice.

COMPACT PCs: Byte-Size Media Machines

Dell Inspiron Zino HD

The ideal home theater PC can dish out high-definition media while remaining unobtrusive—qualities the Dell Inspiron Zino HD (find.pcworld.com/69454) excels at. The minuscule 8-by-8-inch shell will fit just about anywhere you can think of, is whisper-quiet, and can connect to your HDTV or monitor using HDMI or VGA connections. It also has two eSATA ports and four USB slots (perfect for connecting external hard drives full of media), and a multiformat media card reader lets you view photos on the big screen.

DELL'S INSPIRON ZINO HD fits everything in an 8-by-8-inch shell.

The Zino HD starts at $250 and scales up to specs that include a 1TB hard disk. The $557 configuration we tested had Windows 7 Home Premium (64-bit), 802.11n Wi-Fi (important for streaming HD video), 320GB storage, and 3GB of DDR2 memory. Its 1.5GHz AMD Athlon 3250e dual-core processor also offers a considerable performance gain over the Intel Atom CPUs that compact PCs commonly use. The Zino HD's built-in optical drive (a DVD player/writer) is another rarity in a PC of its size.

The Zino HD's ATI Mobility Radeon HD 3200 graphics processor makes it far from a gaming machine, but most compact PCs aren't designed to tackle gaming, anyway. You'll be using it to consume video, and the Zino HD will handle high-def media just fine, whether you're streaming from Hulu or watching DVDs.

PRO: For almost $600, the Inspiron Zino HD presents a well-equipped, attractive package in a compact, colorful shell. Home theater buffs should benefit from its potent processor and quiet operation, but anyone in need of a compact PC would do well to consider it.

CON: While its performance is admirable, your upgrade options are limited, as are your connectivity ports. Its price tag also brushes up alongside those of budget midsize towers, which will likely deliver better performance. If you aren't fixed on a mini size, look at such alternatives.

Asus Eee Box 1501

Although Dell's Inspiron Zino HD makes a stellar home theater PC, offering compelling performance at a fair price, people on tighter budgets hoping to find something a little cheaper without sacrificing too much versatility should consider the Asus Eee Box 1501 (find.pcworld.com/69456).

At 7.5 by 7.5 by 1.5 inches, the newest Eee Box is one of the smallest mini-PCs we've encountered. Running Windows 7 Home Premium (32-bit), the system achieved a WorldBench 6 score of 38. That puts it right on a par with rival Atom-based compact PCs, though they all lag noticeably behind the Zino HD.

Inside the 1501, you'll find a 1.66GHz Intel Atom N330 dual-core processor. Intel's Atom chips are a popular choice for small, cheap PCs, as they offer low power consumption while letting a model remain competitively priced. But they also don't hold a candle to the performance we've seen from the Zino HD's AMD chip.

Rounding out the 1501's internals are 2GB of DDR2 memory, a 250GB hard drive, and nVidia Ion graphics. Ion is a great asset, allowing even middling CPUs to tackle high-definition content while maintaining their svelte dimensions. Even with capable media playback under its belt, the 1501 will likely

THE ASUS EEE Box 1501 offers a striking, elegant design—and a number of compelling features.

be of most use to folks who are looking for an inexpensive productivity machine but still want to be able to enjoy high-definition media.

To make up for its lack of raw performance, the Eee Box 1501 offers quite a few compelling features. Make what you will of the unit's eye-catching, tilted alignment, but with its slot-loading DVD burner, the Eee Box keeps a trim design while also possessing a quirky sort of elegance.

The system packs a total of six USB ports, an HDMI port, a multiformat card reader, and an eSATA port, in addition to 802.11n Wi-Fi and a gigabit ethernet port. The package makes for a nice range of options, though not quite as many as you'll find in more capable PCs. Nevertheless, the Eee Box 1501 fits an impressive offering into very little space.

PRO: Although it makes a competent Internet kiosk for the techno-savvy grandparent or cash-strapped college student, **the Eee Box 1501 isn't afraid to let its hair down and stream a** bit of Hulu. Some pe**ople might also find it easy on the eyes.**

CON: At $500, the E**ee Box 1501's price is a bit steep. You** can find other models **in the compact category that offer sim**ilar performance but **take some $50 to $100 off the cost.**

CHECK OUT THESE, TOO

Acer AspireRevo R3610

An HDMI port and nVidia Ion graphics make this Acer media-capable. With a petite 1.2-inch shell and a $330 price, it'll disappear in your living room but leave your wallet intact. find.pcworld.com/69515

Viewsonic VOT530

The VOT530 packs a Core 2 Duo laptop processor into a chassis that's just 2 inches tall. You also get whisper-quiet operation and a roomy 320GB hard drive, while a plethora of ports and 802.11n Wi-Fi keep you connected. find.pcworld.com/69516

ALL-IN-ONES: Reach Out and Multitouch

Sony VAIO L117FX/B

In the upper echelons of the all-in-one bracket, the Sony VAIO L117FX/B (find.pcworld.com/69457) could let you do away with your TV altogether. Just connect your cable or satellite receiver to its built-in TV tuner, and you can enjoy widescreen, high-definition playback on its vivid, 24-inch-diagonal display. An HDMI input means that your video game consoles can come along for the ride, too. The built-in speakers offer fairly decent performance, but you'll likely want to replace them with your own set before long.

Does a 24-inch screen offer enough viewing real estate for your living room? The answer will vary from person to person. In cramped quarters, or in a private room, an all-in-one PC with potent media capabilities will run circles around the average TV set—and this VAIO doesn't need to be fully powered on to function as a traditional display for your gaming or TV-watching needs.

The VAIO's 1TB hard drive will allow you to make ample use of its DVR capabilities. If you do manage to fill that hard drive, feel free to offload some of your media using the built-in Blu-ray player/writer. The machine also offers a full range of wireless functionality: a wireless keyboard and mouse, speedy 802.11n Wi-Fi, and Bluetooth and Bluetooth Stereo support. Couch surfers will appreciate the bundled remote control and a design that lets them leave their machine on a television stand or shelf, operating it from the couch.

If you must have some peripherals and cables hanging off of the slim, sleek chassis, you'll also find a multiformat card reader, five USB ports, a FireWire port, audio and microphone inputs, and gigabit ethernet. The generous connectivity options will make expanding the PC's functionality a bit easier. It lacks an eSATA connection for external storage, but otherwise the selection available is enough for most users. »

SONY'S VAIO L117FX/B offers potent media capabilities and a 1TB hard drive.

THE MSI WIND Top AE2220 is a multitouch-friendly all-in-one.

The VAIO is no performance slouch either, earning top honors on our list of the best big-screen all-in-ones. Powered by a 2.66GHz Intel Core 2 Quad Q8400s processor and 6GB of DDR2-800 memory, it achieved a score of 105 in WorldBench 6—among the highest results in its category. And let's not forget the coup de grâce: multitouch. The screen takes full advantage of Windows 7's capabilities here. It's a fine representative of what all-in-one PCs can offer.

This VAIO has a lot to like, and Sony charges accordingly: Expect to pay around $2000, though configurations in the L Series with fewer features are cheaper. But as is often the case with all-in-ones, you could find a tower PC and a monitor with comparable specs for a few hundred dollars less.

PRO: Whether you're looking for an interactive TV, a gaming machine, or just a conversation piece, you can't really go wrong here. Impressive hardware performance, a gorgeous chassis, and a vibrant 24-inch display make this multitouch all-in-one the PC to beat.

CON: The Sony VAIO is pricey, even for an all-in-one—it starts at $1300 and can go up to $2000. You will pay a premium for that shapely chassis, so if looks aren't a priority, keep hunting: Perfectly capable alternatives are available for less.

MSI Wind Top AE2220

When shopping for an all-in-one PC, you'll often need to contend with an unfavorable price-to-performance ratio. In the case of the VAIO L117FX/B, an energy efficient quad-core processor keeps things svelte while bolstering the machine's score—and its hefty price tag. But Sony also excels at designing attractive products. Consumers have grown accustomed to paying a premium for Sony goods, if only to have something to show off to their friends.

Smaller PC makers don't have that luxury. They generally outfit their products with less-expensive laptop and netbook components, trading performance for affordability—as their customers want.

A few rungs down the all-in-one ladder, we find the MSI Wind Top AE2220 (find.pcworld.com/69458). If you're in the market for a touch-friendly all-in-one that isn't necessarily a media powerhouse, it's a strong contender. The AE2220's 21.6-inch widescreen display delivers high-def media at 1920 by 1080 resolution. Like the VAIO, it sports a multitouch screen with full Windows 7 gesture support, courtesy of Windows 7 Home Premium.

The MSI Wind Top's similarities to the Sony VAIO continue: Its VGA and HDMI inputs let you use the device as an external display for a video game console or other device. And it comes bundled with a wireless keyboard and mouse, plus 802.11n Wi-Fi. It also has six USB ports and an eSATA port (handy for external hard drives), a combo Blu-ray player/DVD burner, and a multiformat card reader.

CHECK OUT THESE, TOO

HP TouchSmart 600 Quad

HP's custom TouchSmart software creates touch-friendly widgets out of popular Web destinations like Hulu and Twitter. The multitouch-capable TouchSmart 600 Quad includes Intel's Core i7 quad-core processor, for top-tier performance in a slender shell. find.pcworld.com/69518

Asus EeeTop ET2203

The single-touch EeeTop ET2203 lacks Windows 7's gestures but boasts a 21.6-inch, high-definition screen. Features for media buffs include a Blu-ray player and discrete mobile graphics from ATI, for a home theater experience packed into a small space. find.pcworld.com/69517

So the AE2220 appears to offer a package similar to the VAIO's, in a marginally smaller, less attractive shell. But it can't hope to compete with Sony's all-in-one in performance. The AE2220 is powered by a 2.2GHz T6600 Core 2 Duo—an energy-efficient laptop processor. It also has a 500GB hard drive, 4GB of DDR2-800 memory, and integrated nVidia Ion graphics. While Ion GPUs can deliver competent performance, they're usually in netbooks and nettops, and are no match for the VAIO L117FX/B's potent discrete graphics. The AE2220 earned a respectable score of 90 in our WorldBench 6 test suite. That looks even better when you consider the price tag—the MSI Wind Top AE2220 can be had for $800, significantly less than Sony's aesthetically superior offering. And performance runs in the family: The AE2220's smaller sibling, the 20-inch AE2010 (find.pcworld.com/64217), is our highest-ranked budget all-in-one PC.

PRO: You get strong performance, high-definition Blu-ray playback, and a multitouch display. It may not be as chic as the Sony VAIO, but the money you save with MSI's Wind Top AE2220 will more than make up for that.

CON: If you aren't dead set on an all-in-one design, $800 can buy you a marginally superior PC and a 22-inch monitor. While the MSI is not as fast (or as attractive) as Sony's offering, you will still be paying a premium for a svelte chassis.

TOWERS: Data-Crunching Monoliths

Maingear Shift

The Maingear Shift (find.pcworld.com/69459) is the quintessential performance desktop: Billed as a "personal supercomputer," it delivers blistering performance by stacking all of the latest components and technology into its imposing metal chassis, overclocking them, and implementing liquid cooling and clever airflow mechanics to keep all those up-to-date parts humming along smoothly.

The Shift is powered by a 3.33GHz Intel Core i7 975 Extreme Edition processor overclocked to 4GHz. At $1000 for the chip alone, the 975 Extreme is the fastest processor that money could buy at the time of writing, but Intel's upcoming six-core Core i7-980X processor could soon change that.

Meanwhile, the Shift's pair of Intel X25-M 80GB solid-state drives ($250 each), arranged in RAID 0, serve as the boot drive for Windows 7 Ultimate Edition (naturally); a 2TB Western Digital Caviar Black hard drive ($300) handles storage. And don't forget the three XFX Radeon HD 5870 graphics cards ($400 each) that are paired with 6GB of DDR3-2000 RAM.

The Shift achieved a score of 181 in WorldBench 6—one of the most impressive performances we've seen on our test suite. In our gaming tests, we saw a whopping 204 frames per second in Unreal Tournament 3 (2560 by 1600 resolution, highest settings).

The final price tag: just over $7000.

As for the Maingear Shift's case, a unique, vertically mounted design offers improved cable management and airflow. The case is beautiful inside and out, with a brushed-metal exterior that's free of garish paint jobs or decals, and a meticulously organized interior that makes tinkering a hassle-free endeavor.

The Shift also has a grand total of ten USB slots, an eSATA port, two FireWire 400 ports, three HDMI and DisplayPort connections, integrated 7.1 surround sound, a multiformat card reader, and a Blu-ray burner—a bundle that should handily take care of just about every media-related need a user could dream up. Should you wish to expand the machine's innards even further, four free hard-drive bays and three free 5.25-inch bays are available. Maingear also offers an extensive warranty program, and prides itself on its customer service.

Is $7000 too much? For most users, the answer is likely an emphatic yes. High-powered PCs that approach the Shift's level of performance can be had for far less, especially if you are willing to roll up your sleeves and build one yourself.

While this configuration of the Shift would make a rather convincing poster child for excess, some users—if their pockets are deep enough—will throw caution to winds for such a dream PC.

Boutique PC shops are the premier source for excessively powerful performance PCs, and everything is made to order. The Shift, which starts at $2600, can push well beyond $7000—or even past the $20,000 barrier, if taking out a second mortgage strikes your fancy.

PRO: If you're looking for raw performance, enough fistfuls of cash will buy it. If you're a bit thriftier, however, you should be able to find an appreciable middle ground by knowing exactly what configuration you need and maintaining a strict budget. »

MAINGEAR'S SHIFT IS the quintessential high-performance, highly loaded desktop.

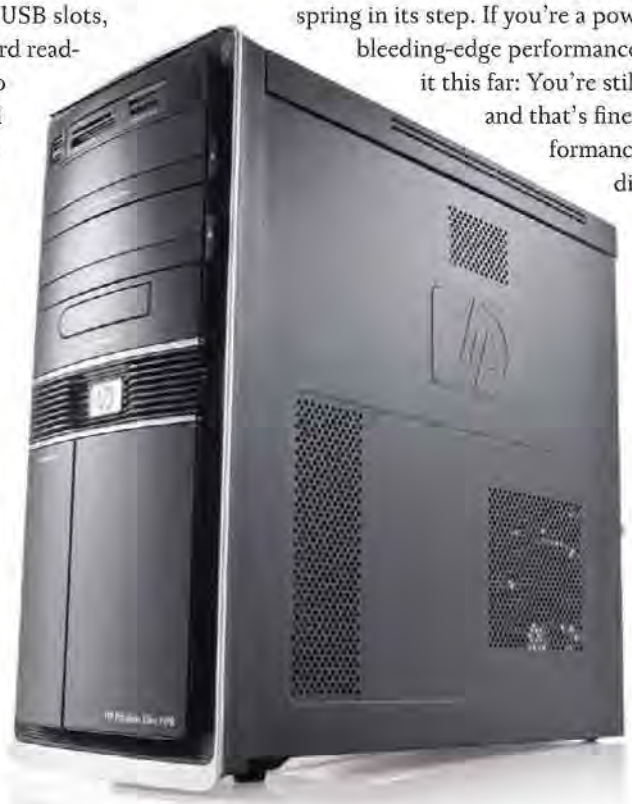
CON: While such super-PCs are expensive in themselves, buying one from a boutique shop entails paying a premium—and labor isn't cheap. If you'd rather not build your own PC outright, do a bit of comparison shopping before you buy, as you could save a bit of cash handling some upgrades yourself.

HP Pavilion HPE-170t

Fortunately, performance machines are available for the rest of us, too. Though the plain midsize-tower chassis won't turn many heads, the HP Pavilion HPE-170t (find.pcworld.com/69460) delivers where it counts. We'll start with two pleasing numbers: a WorldBench 6 score of 146, and a price tag of just under $1500.

The HPE-170t is powered by a 2.8GHz Intel Core i7 860 CPU, with 8GB of DDR3 memory. Windows 7 Home Premium (64-bit) is housed on the two 500GB hard drives, which are arranged in RAID 0 for a total of 1TB of storage space. Graphics performance comes from an nVidia GeForce GTX260 graphics card with a pair of DVI ports. Whereas the Maingear Shift achieved 204 frames per second in Unreal Tournament 3, the HPE-170t managed a very respectable yet comparably paltry 66 frames per second (2560 by 1600 resolution, highest settings).

The HPE-170t offers a total of nine USB slots, two FireWire ports, a multiformat card reader, and an HDMI port, while a combo Blu-ray/DVD-burner drive is coupled with integrated 5.1-channel audio to round out the multimedia faculties. For networking, you'll find gigabit ethernet and 802.11n Wi-Fi. The latter is a curious addition to a performance desktop, but not without merit. If your desktop is already pinned down underneath a myriad of cables, an ethernet cable is just one more. Taking advantage of the gigabit ethernet will result in a faster networking experience. But if you would rather keep things tidy or your PC is in an inconvenient location, 802.11n Wi-Fi is just fine for streaming media and files.



THE HP PAVILION HPE-170t is a reasonably priced power machine.

Once you slide off the HPE-170t's case, the Maingear Shift's premium price starts to make a bit more sense. Inside the HP, you'll find a haphazard mess of cables, with little room to tinker or to add more components. While the Shift offers an expansive case with room to grow, the limited expandability of the HPE-170t is indicative of its much lower price bracket—and of the kind of buyer that this machine is built for.

A casual user who simply wants a beefy workhorse and who is unlikely to take off the PC's case would do well to consider the HPE-170t when looking for a tower system with a bit of spring in its step. If you're a power user or gamer hunting for bleeding-edge performance, you probably haven't made it this far: You're still fawning over the Shift—and that's fine, too. Keep the level of performance you want in mind, but don't dismiss a reasonably priced machine without giving it a thorough evaluation.

PRO: The performance takes this tower ever so close to the deep end of the PC pool for only a fraction of the investment. It's a great way for folks with stricter budgets to enjoy high-end performance.

CON: The confined chassis leaves your future upgrade options limited, which will likely disappoint PC enthusiasts who are looking for tower-sized expandability. ●

CHECK OUT THESE, TOO

Dell OptiPlex 780 USFF

A mere 9.4 inches tall, Dell's business-centric OptiPlex 780 USFF is powered by a Core 2 Duo desktop processor with Intel's vPro technology—your IT department will thank you. And the Energy Star 5.0–compliant 180W power supply will keep Accounting happy, too. find.pcworld.com/69519

Micro Express MicroFlex 75B

The potent Intel Core i5-750 processor makes the MicroFlex 75B a strong performer. Its chassis offers lots of room to add hard drives, plus a gaggle of ports for your peripherals. find.pcworld.com/69520

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Gamer Paladin D805

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- NVIDIA® GeForce™ GT 220 1GB Video Card
- iBUYPOWER A235 Gaming Case + 450W Power Supply
- 1TB SATA-II 3.0Gb/s, 16M Cache Hard Drive
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The Subscription Trap

BY TOM SPRING
ILLUSTRATION BY DAN PAGE

If you've ever opened your credit card bill to find that you've inadvertently joined a club you've never heard of, at a cost of $10 or more a month, you're not alone. Millions of Web consumers have been snared by similar tactics. **Our tips will help you fight back.** »

Q. How can companies make over a billion dollars selling a service few people want?

A. *By signing up millions of members who don't know that they're becoming members.*

A survey by credit card company Visa estimates that nearly three in ten Americans have been stung by a subscription trap. Here's how it works: You buy airline tickets or flowers, say, at a site like Orbitz or FTD—and just when you think you've completed your transaction, you get an offer for cash back or free shipping. So you click the button, and a screen appears asking for your e-mail address in exchange for that attractive little benefit. It seems like a small price to pay, so you comply and then finish your purchase.

Three months later, your credit card statement lists a total of $50 in membership dues from a company you've never heard of, for a club you never knew you belonged to and have never received any benefit from.

Unfortunately, getting your money back isn't easy. Some angry consumers say getting a full refund required writing a letter and waiting months to receive a credit card chargeback.

Welcome to posttransaction marketing, a billion-dollar industry that most people have never heard of. According to an ongoing investigation begun in 2009 by the U.S. Senate Commerce, Science, and Transportation Committee, headed by Jay Rockefeller (D-West Virginia), the three biggest players in this business, Affinion Group, Vertrue, and Webloyalty—all based in Norwalk, Connecticut—have earned at least $1.4 billion in revenue over the past ten years. They shared more than half of that money with hundreds of Website partners, including such reputable businesses as Avon, Barnes & Noble, Budget, Buy.com, Classmates.com, GMAC Mortgage, MovieTickets.com, Priceline, Shutterfly, Staples, and Ticketmaster.

In return for their cut of the action, these big-name companies commonly pass consumers' credit card information to the posttransaction marketing firm—unbeknownst to many of the affected consumers. At one site, all you have to do to trigger the handoff is to type your e-mail address: Even if you never click a Submit button or press <Enter> on your keyboard, your billing data goes flying from one company to another.

In the posttransaction marketing business, this exchange is called a *data pass*. Some consumers consider these tactics a betrayal of their trust, but the arrangement is certainly lucrative. The Commerce Committee's interim report lists Comcast, Orbitz, Priceline (which operates Fandango), and Shutterfly among 19 retailers that have made more than $10 million each from their partnerships with the three marketing businesses over the past ten years. United Online, which owns Classmates.com, has collected $70 million via partnerships with Affinion, Vertrue, and Webloyalty over the past ten years, the report says.

Convenient or Confusing?

Many people think posttransaction marketing is built on deception. David Murray, a Massachusetts hospital executive, mistakenly enrolled in Affinion's $12-a-month LiveWell health-related membership program while shopping at 1-800-Flowers. He concedes that he erred by clicking on a '$15 Cash Back' button, but he insists that the offer was presented in a "deceitful" way.

"The order confirmation stated, 'Your purchase is complete. Click here to claim $15.00 Cash Back on this purchase!' This is not true. 1-800-Flowers isn't offering $15 back, LiveWell is. And who the hell is LiveWell?" Murray asks. He says the data-pass process obscured the fact that he was separately purchasing a LiveWell membership. "Is this something 1-800-Flowers wanted to be associated with?"

Apparently not. Company spokesperson Joseph Pititto says, "We reviewed the programs and notified the partner we are not renewing our contract." He says that less than 2 percent of customers complained to 1-800-Flowers about Affinion membership programs.

Senator Rockefeller is among the most outspoken critics of posttransaction marketing. "These companies use aggressive sales tactics intentionally designed to mislead online shoppers," he says. His committee's investigation has put the industry's Big Three firms under a microscope.

"There are more than 4 million American consumers whose credit cards are being charged by mysterious membership clubs after shopping online, and most of these 4 million consumers don't even know it's happening," Rockefeller claims.

Officials for Affinion, Vertrue, and Webloyalty all bristle at the charge that they mislead customers. Each has claimed in

Who Knew?

In a Webloyalty survey of 308 past and current Reservation Rewards members, few were active program participants.

234 MEMBERS said that they did not recall being offered a Reservation Rewards membership or that they had declined a membership offer.

4 MEMBERS said that they had used discounts from the Reservation Rewards program.

Source: U.S. Senate Commerce Committee

the past that its offers are clear and their details are conspicuous. Obtaining your credit card data from a merchant you just finished doing business with isn't sneaky, they argue: It's a convenience to you.

Affinion runs more than two dozen membership programs, including Buyers Advantage, Identity Secure, and Travelers Advantage. It did not respond directly to Rockefeller's comments, but company spokesperson James Hart says, "Affinion is proud of its long-standing history of employing the best marketing practices in the industry...our programs provide tremendous value for millions of consumers worldwide." According to Hart, Affinion's marketing terms are explicit and require consumers to give "informed consent" before they join one of the company's membership programs.

Online marketing expert Ben Edelman, an assistant professor at Harvard Business School who testified at the Commerce Committee hearing last year, believes that post-transaction marketing uses "bait and switch" sales techniques and is deliberately deceptive.

"Most consumers have no idea they are enrolled in these programs or how a third party got hold of their credit card number," Edelman says.

Making It Clearer

In January, in response to the Commerce Committee's investigation, Affinion, Vertrue, and Webloyalty agreed to alter their online offer pages. Instead of collecting credit card data directly from the host Website where the offer appears, the companies now require consumers to enter their 16-digit credit card number a second time in order to establish their club membership (and to qualify for any special cash-back or rebate offer).

Since Webloyalty began requiring consumers to input their credit card information a second time, the company has seen a drop in enrollments, spokesperson Beth Kitchener says, though she declines to specify how big the drop has been. "If there is confusion about how people enroll in our programs, we are happy to address those concerns," Kitchener says. "We don't want customers who don't want us."

Rockefeller sees the change in policy as a "step in the right direction," but he still views the companies' offers as misleading and is pushing for further reforms. Moreover, since the three companies adopted the change voluntarily, other post-transaction marketing firms need not follow their lead. »

web SHOPPER

RESTAURANT.COM'S SLOGAN is "eat, drink, save money," but Kari Glennon of Bellingham, Washington, thinks it should be "eat, drink, and watch out for surprise charges on your credit card bill."

In October 2008, Glennon bought several Restaurant.com gift certificates for her coworkers. The next month she noticed a mysterious $14.95 charge on her Visa credit card statement for "Shopping Essentials." Glennon shares the account with her husband, and assumed that the charge was his. Three months later, she realized that the $14.95 was a recurring fee, so she decided to investigate.

Glennon called a toll-free phone number for Shopping Essentials and discovered that it was a shopping club owned by Norwalk, Connecticut–based Vertrue.

"I told the woman on the phone I had no recollection of joining the service," Glennon says. The rep told her that the charges originated from her Restaurant.com purchase. "But how did you get my credit card number?" she asked. The representative told her that Restaurant.com had given the credit card data to Vertrue after she had clicked on a "$10 cash back" banner ad and input her e-mail address.

Kari Glennon
Bellingham, WA

"I don't recall clicking anything, and I did not give my credit card information to Restaurant.com for the purpose of signing up for a membership."

Thousands of consumers have complained to the Better Business Bureau that they, too, had inadvertently and unknowingly become members of a Vertrue service.

Earlier this year, in response to a Senate Commerce Committee investigation, Vertrue voluntarily modified its marketing offers so that prospective club members must input their credit card number a second time to confirm that they want the membership.

Restaurant.com spokesperson Tony Bombacino says that his company cut ties with Vertrue in November 2009 after the Commerce Committee began investigating the business practices of major posttransaction marketers. "We felt it would be best to end our relationship and find out what the Senate investigation concluded," Bombacino says.

According to Bombacino, Restaurant.com has an A+ rating with the BBB and has received few complaints about its Vertrue ties. Vertrue has an F rating with the BBB due to a "failure to honor commitment to arbitrate or mediate disputes," the BBB says.

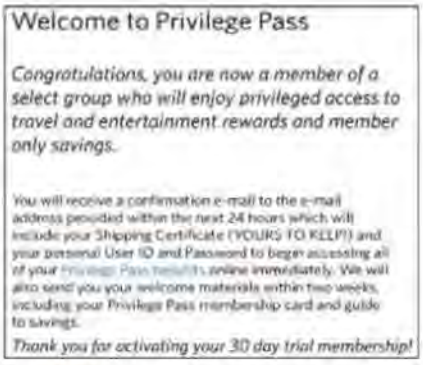
When Glennon asked Vertrue for a refund, its reps told her they could credit only the most recent charge to her Visa account. To get the other $29.90, they said, she would have to mail a request to Vertrue's postal address. Glennon says the money came three weeks later. Vertrue reps declined to comment on her experience, but they say the company has always allowed members to cancel an account and receive a refund by phone.

The Process

It's very easy for a shopper at Spiegel.com to stumble into a Privilege Pass club membership. Here's how, step by step.

1 **AT CHECKOUT,** a pop-up box offering free shipping appears on the order summary page.

2 **FILL IN** an e-mail address field "To claim your Free Shipping Certificate."



3 **PROCESS COMPLETE.** Congratulations on joining Privilege Pass. Your recurring membership dues will begin appearing on your next credit card statement.

Seeing for Ourselves

During a shopping excursion at Spiegel.com, I discovered how easy it is to mistakenly sign up for a membership program. After I made my purchase and progressed to the order summary page, a window offering "free shipping" popped up. Looking closely, I realized that the offer applied not to my current purchase but to my next purchase at Spiegel.com—"Compliments of Spiegel Privilege Pass." I clicked 'Continue' and found myself on a Web page that stated prominently at the top "Claim your Free Shipping Certificate Now!"

At the bottom, a text field invited me to enter an e-mail address as an "electronic signature" agreeing to "activate your Privilege Pass membership." In a lower corner of the browser, a gray box with text that in several browsers looked slightly blurry spelled out the "Offer Details": Activating my membership meant agreeing to pay a $1.95 "activation fee"; and if I didn't cancel my membership within 30 days, the club would begin debiting my credit card at a rate of $14.95 per month.

I typed my e-mail address in the text field, but before I clicked anything else or pressed <Enter> on my keyboard, the Web form seemed to register my e-mail address automatically and jumped me to a page welcoming me to Privilege Pass. This page said that I would receive, within 24 hours, a confirmation e-mail, a "Shipping Certificate," and a user ID and password to access my Privilege Pass benefits. When the confirmation e-mail arrived, it didn't mention any fees associated with membership nor any instructions on how to cancel.

Privilege Pass is a discount membership program that offers deals on travel- and entertainment-related purchases. The program is run by Encore Marketing International, a privately held company in Lanham, Maryland. The company did not reply to repeated requests to be interviewed for this story.

Representatives of Signature Styles, the owner of the Spiegel brand, say that their company has not received many complaints about the way its partner markets the Spiegel Privilege Pass. According to spokesperson Parker Block, Signature Styles is currently in discussions with Encore Marketing International to update the way Spiegel's Website enrolls consumers in the Privilege Pass monthly subscription membership. "We are developing ways to be more transparent to consumers to make their experience more satisfying to government, consumer advocacy groups, and consumers," Block says. Signature Styles will change the process in the near future, he says.

Some Partners Cut Ties

The vast majority of retail Websites I interviewed that have business relationships with Affinion, Vertrue, and Webloyalty say that they work hard to build a positive relationship with customers and don't want to tarnish it through deceptive practices. But since the Senate Commerce Committee investigation began, only 8 of the estimated 450 companies that partner with the Big Three (1-800-Flowers, Air Tran Airways, Continental Airlines, Fandango, Intelius, Priceline, US Airways, and Vistaprint) have publicly announced that they will no longer allow companies to make misleading pitches during the checkout process on their Websites.

Both 1-800-Flowers and US Airways say that they won't be renewing their contracts with Webloyalty. Priceline and Vistaprint say that they will no longer work with Affinion. Intelius says that it no longer works with Vertrue.

AllPosters.com and MovieTickets.com continue to offer club membership pitches on their sites. MovieTickets.com dangles a "$20 cash back incentive" in exchange for trying Webloyalty's Reservation Rewards program (for dining and travel discounts). AllPosters.com plays up a $15 coupon in exchange for trying membership in Webloyalty's Shopper Discount and Rewards club. Both sites ask you to enter your credit card information a second time to acknowledge that you are joining a club, and both explicitly warn that you'll be charged if you don't cancel your membership within 30 days.

Money-Go-Round

Spokespeople for several companies told me they don't believe that posttransaction marketing confuses or entraps their customers, but Rockefeller says the results of his committee's investigation show otherwise. "The interviews and the e-mail communications provide abundant evidence that the e-commerce partners are aware that their customers are being misled by the enrollment offers from Affinion, Vertrue, and Webloyalty," the committee's report states.

Even more telling is a Webloyalty study that the Senate investigation unearthed as part of a subpoena for information. According to internal company documents, Webloyalty surveyed 308 of its Reservation Rewards members and found that 76 percent of those consumers either didn't recall being offered a Reservation Reward membership or said they had declined a membership offer. The survey was conducted before Webloyalty began asking customers to enter their credit card information a second time in order to sign up for its programs.

The Commerce Committee report also included an e-mail message in which a Vertrue employee estimated that "cancellation calls represent approximately 98 per cent of call volume" to the company's customer service center.

A Better Business Bureau review of numerous complaints against these companies found that many consumers charged for club membership said they were unaware they had given these companies their billing information.

Financial information the companies provided to the Commerce Committee reveals that Affinion, Vertrue, and Webloyalty and their e-commerce partners have generated more than $1.4 billion in revenue over the past ten years from Internet consumers who have been charged for membership programs. Of the $1.4 billion in total revenue, $792 million went to the e-commerce retailers.

A review of posttransaction marketing companies' financial information, however, suggests that their revenues may have been considerably higher. For instance, Webloyalty reported revenue of $193 million in 2007 alone; that same year, Vertrue announced that it was projecting revenue of $800 million. For its part, for the third quarter of 2009, Affinion reported in excess of $184 million in revenue from its Membership Products segment. Those numbers suggest that the combined revenue for the three firms may now be close to $1 billion a year.

No Strangers to Courtrooms

Rockefeller isn't the only politician to have gone after Affinion, Vertrue, and Webloyalty. Affinion (known before 2005 as Trilegiant) has been sued by the attorneys general of 16 states acting in concert, and by the attorney general of Florida separately. In 2008, the company paid $25 million to settle a nationwide class-action lawsuit for allegedly billing and collecting unauthorized charges from consumers for products or memberships that consumers never requested or consented to receive.

Webloyalty is currently under investigation by the attorney general of Connecticut. In 2009, Webloyalty settled a class-action lawsuit in which plaintiffs alleged that it had defrauded them. As part of the settlement, Webloyalty agreed to adopt changes to the way it markets its loyalty programs, as well as to pay $10 million to consumers who had inadvertently signed up for its membership clubs.

Over the past nine years, Vertrue, which changed its name from »

who's DOING BUSINESS

THESE COMPANIES EARNED more than $10 million each over the past ten years from posttransaction marketing.

1-800-Flowers	Intelius
Buy.com	MovieTickets.com
Classmates.com	Orbitz
Columbia House	Priceline
Confi-Check	Redcats USA
Expedia/Hotels.com	Shutterfly
Fandango	Travelocity
FTD	US Airways
Hotwire	Vistaprint
InQ	

Source: U.S. Senate Commerce Committee

how to AVOID GETTING HOOKED

YOU'D THINK THAT not joining a club would be easy. But at many sites, consumers regularly get sucked in to signing up for discount shopping clubs that they have no interest in joining. Here's what to look out for.

❶ When you see words such as "free," "cash back," and "rebate" on a Website, alarm bells should ring in your head. Before clicking to take advantage of any such deal, take a deep breath and read all of the terms and conditions carefully. Too often, accepting a "cash back" offer turns into a costly mistake.

❷ If the terms and conditions are confusing, the company may have buried something in them that it doesn't want you to find. Skip it!

❸ When completing a purchase online, look for prechecked boxes that may bind you to terms and conditions you don't want. Uncheck those boxes.

❹ Don't shop online with a bank debit card. The federal Fair Credit Billing Act protects credit card companies such as American Express, MasterCard, and Visa; when you dispute a charge on your credit card, you can ask your credit card company to withhold payment while it investigates. You don't have the same protections with a debit card purchase.

how to QUIT A CLUB YOU NEVER MEANT TO JOIN (and get your money back)

HUNDREDS OF big-name Websites offer shoppers discounts or free shipping if they'll join a discount club that charges a monthly membership fee. Joining is so easy that many people don't know they've done it. Getting out of the club—and getting your money back—is the hard part.

Here are the best steps to take to obtain a refund from posttransaction marketers.

❶ **Call the billing company.** First contact the company directly billing you—not the Website that hosted the original offer. Be polite, ask to cancel your membership, and demand your money back. If the rep refuses to refund your money, ask to talk with a manager. Note the date and time of your call, and the names of all the service reps you speak with. Getting nowhere? Inform the biller that you'll dispute the charge with your credit card company.

❷ **Call your credit card company.** American Express, MasterCard, and Visa offer credit card customers fraud protection and will investigate claims of bogus billing. Lodge a formal claim with your credit card company, explaining that a posttransaction marketer billed you for a service you mistakenly signed up for or were unaware you'd requested. Emphasize that you've tried to get your money back from the billing company without success.

A high-profile Senate investigation has put posttransaction marketers under a microscope and has encouraged credit card companies to investigate and reverse these charges. MemberWorks in October 2004, has been sued by the attorneys general of California, Florida, and Iowa. Each suit involved similar allegations that the company had deliberately misled customers or charged them without their knowledge.

In January, New York attorney general Andrew Cuomo subpoenaed 22 e-commerce retailers—1-800-Flowers, Avon, Barnes & Noble, Budget, Buy.com, Classmates.com, Columbia House, Expedia/Hotels.com, FTD, Gamestop/EB Games, GMAC Mortgage, Hotwire, Intelius, MovieTickets.com, Orbitz, Pizza Hut, Priceline, Shutterfly, Staples.com, Ticketmaster.com, Travelocity, and Vistaprint—seeking information on their dealings with Affinion, Vertrue, and Webloyalty. Cuomo says that these "well-known companies are tricking customers into accepting offers from third-party vendors, which then siphon money from consumers' accounts."

Who Has Your Back?

Some people, including Senate investigators, believe that the government shouldn't be the only entity looking out for consumers' interests. They think that credit card companies American Express, MasterCard, and Visa should do a better job of policing posttransaction marketing.

Credit card companies clearly receive many requests from customers to reverse charges from Affinion, Vertrue, Webloyalty, and similar companies. (Each company declined to say how many chargeback requests they receive from customers disputing charges related to them.) Credit card companies have rules for dealing with merchants whose customers frequently ask to have their charges reversed; offending merchants are subject to fines or even removal from a credit card's network.

American Express spokesperson Lisa Anselmo says that her company is scrutinizing the way Websites pass credit card information to Affinion, Vertrue, and Webloyalty. "We share the committee's concern and are investigating alleged unfair and deceptive practices," Anselmo says. "A merchant can't just transfer information to a third party." MasterCard reports that it is "investigating online marketing practices by certain merchants." And Visa officials say that the company is cooperating with the Senate investigation. ●

Then and Now

Faced with federal scrutiny, posttransaction marketers have altered their sign-up process to make joining a club more of an effort.

Before **ENTER AN E-MAIL** address, verify it, and you're enrolled.

After **ADDITIONAL FIELDS** include address and credit card info.

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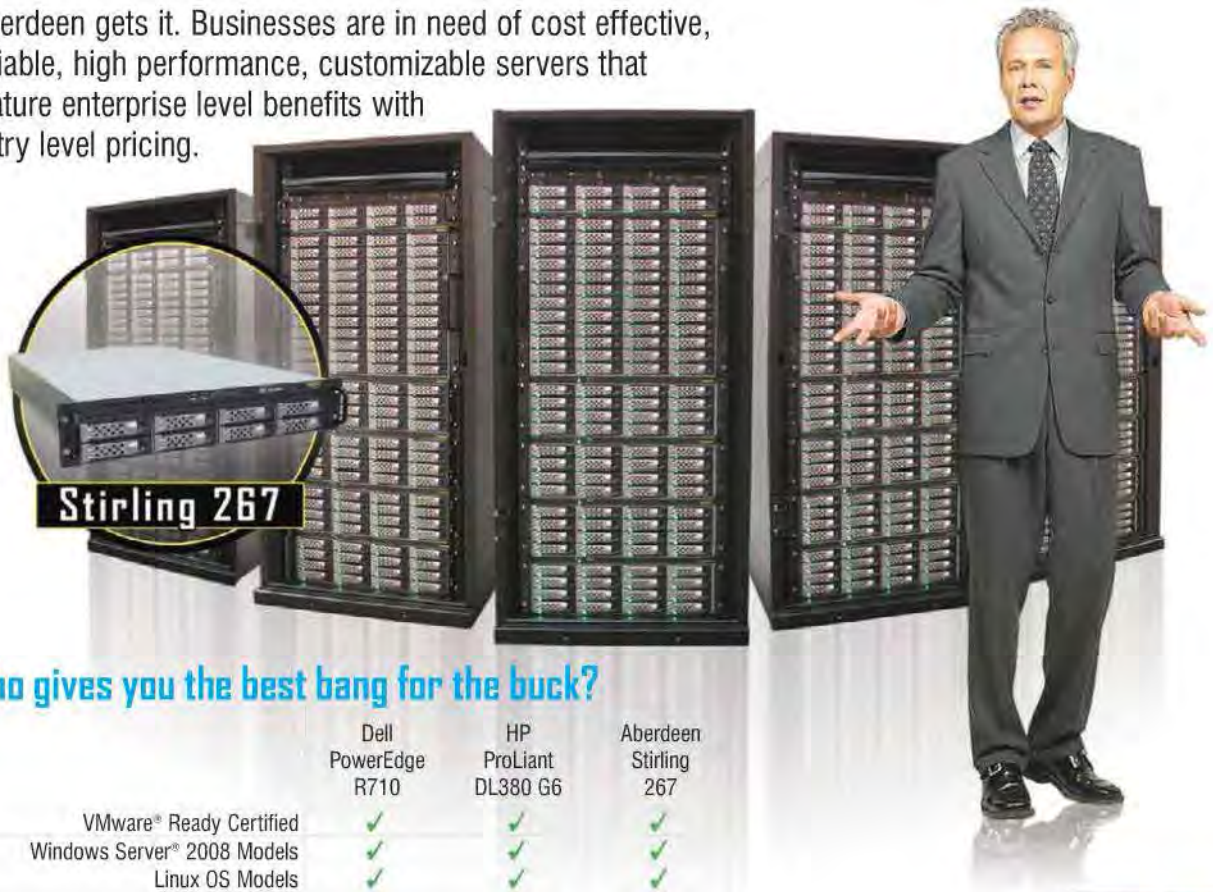

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Here's How

Tech Support Survival Tips

BY PATRICK MILLER AND ELVIN LAI

No one likes talking to tech support. Use our tips to help get your problem fixed—and maybe receive a little something extra, as well.

YOUR PC, INTERNET connection, and cell phone normally save you tremendous amounts of time, but that's easy to forget when you're spending hours on the line with tech support. Here's how you can streamline the process and make sure you get the fixes you need.

Your PC Crashes

Suddenly, your computer is having issues. Maybe it's crashing randomly, or it's devouring data. Maybe it won't start. Depending on your level of expertise, calling tech support could be either a really good way to solve the problem or a really good way to waste an afternoon.

Research and test: If you can, start by figuring out for yourself exactly what isn't working. The more details you can put together, the better—especially if you have a smartphone or an extra computer that you can use to plug those details into a search engine. Chances are, any issue you have with a piece of technology is one that someone else has had as well; and if you're lucky, they've posted extensively about it on a forum or a company support site. Above all, don't forget to keep your stress level low while you're troubleshooting.

You should perform a few basic tests yourself, too: Reboot into Safe Mode (press **<F8>** as your PC starts up) and see if the problems persist. Additionally, try booting from a recovery disc (read "Six Downloadable Boot Discs That Could Save Your PC" at find.pcworld.com/62506 and "Make Your New PC Hassle-Free" at find.pcworld.com/69407 for more information) and run Windows' included diagnostic tools to check the state of your hard drives, RAM, and system install. Make sure all connected devices are firmly seated in their ports; fiddling with your PC's insides could have left a RAM chip or video card unseated.

Ideally, you'll figure out which component is acting up. This will make the call process much easier because the phone tech won't be able to refer you to another company by saying it's a problem with that third party's product, not their own.

Also, if Windows' built-in diagnostic tools didn't help, you're probably calling tech support because your problem is so bad that you need someone to authorize a warranty replacement part.

Prepare for your call: Gather whatever product information you can find. Collect your system's model name and number ("Lenovo ThinkPad T500," say), your computer's serial number (typically printed on a sticker on the back of a desktop PC and on the bottom of a laptop), and any relevant extended warranty, receipt, or other proof-of-purchase info (in case the company loses your warranty information).

Make sure, too, that you know what name, physical address, phone number, and e-mail address the computer is registered under.

Have a system specification list and a crash report handy, if possible. Type **msinfo32** into Windows' search bar to bring up the specs; then type **problem reports** into the search bar and choose *View All Problem Reports*.

During the phone call: First of all, get a callback number and a case number, in the event you're accidentally disconnected—you don't want to wade through the phone menus and the tech support script twice.

ILLUSTRATIONS: STEPHANIE DALTON COWAN

How long the call takes will depend on how many details you've pulled together and the complexity of your problem.

If your computer doesn't turn on, most of the support tech's tests won't work. If you were able to figure out which specific component isn't functioning, the process should be fairly straightforward, though the tech will probably have you try a few basic tests anyway before transferring you to someone who can either send a replacement part or point you to a software fix.

But computer problems that aren't so easily traceable will most likely mean running a gamut of tests from both the first-tier support rep (the person who initially responds) and the second-tier rep (the person you get transferred to if the first person can't help). Set aside some time where you won't be interrupted.

Bonus tip: Depending on how old your PC is, the warranty return might result in an unexpected upgrade. We've had iPods and hard drives upgraded under warranty simply because the right parts weren't in stock anymore. If the manufacturer messed up your warranty coverage, it might give you an upgrade in that case, too.

You're Off the Net

Your Internet connection doesn't work, leaving you stranded from the outside world—or at least, from cat videos on YouTube.

If some PCs on your network can access the Internet, but not others, your ISP connection is fine and the issue is on your network.

Unless your ISP supplied both the DSL/cable modem and the router (wired or wireless) for sharing a Net connection among your PCs, it's not likely to provide much helpful tech support besides telling you to power-cycle (turn off and on) your modem and router and reset them to factory settings. Instead, the home-networking tips at find.pcworld.com/69530 and find.pcworld.com/69408 may be more useful.

On the other hand, if you can't access the Internet at all—even if you directly connect a PC to the modem via ethernet—then it's pretty clear the problem is with your ISP, not your own equipment. Try power-cycling everything and checking the cable connections, just in case.

Prepare for the call to your ISP: First, try calling the provider's main support line—if a large service outage has hit your neighborhood, a prerecorded message will often tell you what's going on and save you the trouble.

If it's not a local service issue, you'll need to gather some details before making your call. Get the account holder's information—that's usually your account number (if you have DSL, it's probably your landline telephone number) and the account holder's Social Security number. If you're living with roommates (or if the account holder is no longer around), this can make the call complicated, which is why you need to ensure you have all the info before setting aside time to call.

Also, if it's a speed issue, know what level of service you signed up for.

Collect hardware data: You should have all of your hardware information on hand, too. Know the brand and model number for your modem and/or router, as well as the MAC address (a 12-character string of numbers and letters, typically punctuated by colons or dashes, that can usually be found on a label on the device).

You'll also want the MAC address of the Wi-Fi or ethernet card that you use to connect to the Internet; find it by opening the command prompt (type **cmd** in Windows' search bar) and typing **ipconfig /all** to bring up your networking information. Scroll up until you find your device (Intel WiFi Link 5100, for example), and write down the physical address.

During the call: Again, the first thing to do is to obtain a number to call back and a case number in the event that the call is disconnected.

Calling an ISP's tech support for an Internet problem can be tricky: If the issue could be something other than the Internet connection itself, the rep might just instruct you to call a different tech support line. For example, if you are using a wireless router that didn't come from your ISP, the tech may well tell you to call the router company instead, or your PC manufacturer's tech support line.

Avoid this by keeping your network as simple as possible (directly connecting to the modem via ethernet, or setting up your network with the ISP-supplied router); if you can, make sure that your computer can still connect to the Internet through other means (your local café or library Wi-Fi, say). This will clearly establish that the problem isn't in your computer or network, but in the ISP connection.

Home service call? Internet support calls tend to be closer to calling a utility company than fixing a PC over the phone. You call when you can't get online, they give you a few quick tests, and then they send someone out to fix the problem.

Usually the issue appears in at least one of three spots along the line: Your service hasn't been enabled on the ISP's end (as happens often with new customers); something isn't connected at »

the switching station between your residence or office and the ISP; or something isn't connected in the wiring on your end.

If the ISP simply hasn't enabled your service yet, it should be able to do so during the phone call. If your connection is having problems at the switching station or on your end, the phone tech will have to send someone out to fix it. Switching-station checkups can usually be handled before the day ends, but on-site visits mean freeing up some time to let a repairperson into your house or office, if necessary.

Hopefully, all goes well with the visit, and your Internet access returns—but you should prepare for the worst. Keep your account info, case number, and callback numbers together in case you need to call again—this information will let your ISP's techs know which repairs have already been tried.

Bonus tip: Keep track of the time spent waiting for or talking to tech support, any problems dealing with staff over the phone, and especially the dates/times of service outages and any fees you were charged.

Unlike cellular providers, ISPs are not contract-locked; and their service is a subscription rather than a one-time purchase (as with hardware). Call up the customer service line, explain your history of service problems, and you may get a credit to your account plus a free month or so of service.

Your Cell Phone Is on the Fritz

Your cell phone won't make calls, its internal speaker and microphone are broken, or the display abruptly stopped working—or some unholy combination of the three.

Generally speaking, cell phones either work or they don't, and you usually can't fix anything unless you're comfortable with opening the handset up (and thereby voiding the warranty). You can try updating the firmware yourself from the phone manufacturer's Website, and if you have access to similar phones from the same carrier, you can try swapping the SIM card, battery, or removable storage to see if it's a problem with the phone or a component.

Prepare for your call or store visit: You'll probably need to contact your cellular provider, not the handset manufacturer, for support. While manufacturers may provide a warranty, you usually have to get the phone serviced through the carrier. The iPhone is a notable exception to this rule—Apple supports it, not AT&T.

If you have network access issues, call tech support to see if they can help.

For phones with manufacturer defects (like a DOA handset or a model with a common software glitch) or other handset issues, you can get better, faster service and have an easier time obtaining a replacement if you bring your busted handset to your local cellular provider's store instead of opting for over-the-phone tech support. Since technicians need to see the phone before they authorize a warranty replacement, over-the-phone techs will make you send the device in and wait for their in-house techs to examine it before you can get a working phone. Take the phone to the store, and you'll speed up the turnaround by days.

Either way, you'll need your account holder's information (the cell phone number and your Social Security number) as well as the brand and model number for your handset. If you've jailbroken or unlocked the device, you should restore it to its factory settings first—otherwise, your wireless carrier probably won't support you.

During the call or visit: The best approach to making your cell phone's support process less painful usually is to be proactive—that is, to make a few smart choices before anything goes wrong with the handset.

For one thing, buy directly from the provider, rather than an authorized reseller, because the provider typically offers a higher level of service (and may not support a reseller's handsets).

Buy handset insurance from your mobile carrier—the monthly fee and the per-incident deductible are definitely worthwhile if you're worried about theft, loss, or accidental damage, especially if the phone is critical to your work or business.

If you get a warranty replacement authorized, don't forget that the provider usually sends a return envelope for mailing the broken handset back. If you don't do so within a certain window of time, it will charge you for the full cost of the phone.

Bonus tip: If you're still in a contract, cell phone providers have the upper hand, thanks to their excessive early-termination fees and highly subsidized handsets.

However, keep track of any accounting errors or billing problems you've had, and hold the company responsible for crediting amounts to your account balance. Also, if you are looking to extend your contract or add another line, the customer service rep might offer a discount.

Finally, some providers (Verizon, for example) have a three-strikes policy for chronic handset problems: If the company has to replace your phone under warranty three times, it will allow you to pick out a new handset model instead.

Five Playful Tech Pranks for April Fools' Day

Here's how to play harmless pranks on your family, friends, and coworkers with their own tech—and avoid like-minded mischief makers.

FOR SHOCK VALUE, search for "broken LCD" on Google Image Search to find convincing images—like this one—of broken LCD screens for your prank.

A PROPER TECH prank is mischievous, not malicious. In time for April Fools' Day, we've identified a few quick tricks you can pull off with just a few minutes of access to your victim's gadgets.

Prank 1: Mess With the Desktop

No prank guide would be complete without the classic desktop-picture switcheroo: Take a screenshot of your victim's desktop (in Windows 7 or Vista, type **Snipping Tool** in the search box; in XP, just press the **<Print Screen>** key); then right-click on the desktop and choose the *Personalize* menu to bring up the Personalization control panel.

Now change the user's normal desktop picture to the screenshot you took, right-click on the desktop again, go to the View menu, and uncheck *Show Desktop Icons*. Nothing will look different, but the "icons" on the desktop won't respond.

Pranksters looking for more shock value can search for "broken LCD" on Google Image Search and pull up several convincing images of broken LCD screens. Set it as the victim's new desktop and watch the stress level spike when they suddenly think their monitor has been wrecked—and again when they realize that it's a joke. Bonus points for getting this on a laptop, as notebook LCDs cost more to replace.

The easiest way to prevent this trick from being played on you is to lock your PC (**<Windows>-L**) when you're away from your desk—but that's no fun. So instead of prevention, go for revenge: Just glue down all the items on their (physical) desktop, so they know how you feel.

Prank 2: Sabotage the Keyboard

Unlike desktop picture pranks, keyboard-related gotchas are best executed with some subtlety; you want the target to realize, slowly, that they've been had.

In Windows 7 or Vista, the Region and Language control panel lets you change the keyboard's software layout to anything installed, including certain European configurations that almost match the standard U.S. English layout—French, for example, is very similar except for the placement of a couple of key letters.

Open the Region and Language control panel, click the *Keyboards and Languages* tab, select *Change keyboard•Add...*, and choose your keyboard layout of choice.

You'll also want to hide the language bar so that the change is not immediately obvious. To do so, click the *Language Bar* tab and then choose *Hidden*.

To access the keyboard layout changer in XP, go to *Control Panel•Region and Language* and select the *Language* tab.

Microsoft Word's AutoReplace function is a great resource for potential pranks, as well: In *Word Options•Proofing•AutoReplace*, you can instruct Word to automatically replace particular words with other character strings. While you could lean toward the obnoxious and juvenile, I prefer to create minor typos ("definately" instead of "definitely") or to introduce repeated words ("the" becomes "the the"), the better to delay the victim's moment of discovery.

If you're the target of »

MAKING CHANGES TO Word's Autoreplace and Autocorrect settings on a victim's PC can make for some deliciously subtle pranks.

this trickery, pop the vowel keys off the perpetrator's keyboard with a pen or a screwdriver and mail them to the country that corresponds to your new keyboard setting.

Prank 3: Play With Their Phones

Phones are always ripe for a prank or two, but we have a few suggestions that go above and beyond renaming the target's contacts.

Our first phone prank comes courtesy of *PCWorld*'s smartphone specialist, Ginny Mies. First, get two phones and block their Caller ID (in the United States, dial *67 before a call). Then call two people—ideally, they'll know each other—and hold the phones close together, oriented microphone to receiver. After the prank victims sort out the "No, you called me" bit and come to terms with this freak cellular "accident," you'll get to listen to the subsequent conversation.

Plenty of apps can help you with your phone pranks, too. Visit the Soundboard Archive (soundboardarchive.com) for dozens of collections of celebrity and pop-culture character sound bites, from George Takei to Hulk Hogan. As long as you remember that those who prank-call service industry workers get a special place in hell, you'll be fine.

Also, pick up a Fake Call app for your smartphone of choice (for links, go to the online version of this story at find.pcworld.com/69414 and scroll to near the bottom of the page): Fake-a-Call Free (iPhone), Fake My Call ($3, BlackBerry), and Fake-a-Call Free (Android) all let you set up convincing-yet-fake calls on your smartphone—so, for example, you can show your friends the call you got from President Obama.

A FAKE-CALL APP on your phone can convince friends you got a call from President Obama.

Tired of people playing with your phone? Lots of fake broken LCD desktop images for smartphones are around, too, and once the perp is done panicking over the prospect of paying for an unsubsidized iPhone, they'll never want to pull a prank on your phone again.

Prank 4: Manipulate the Mouse

Reader @edcomingatyou reports that he discreetly slipped a wireless mouse USB receiver into a coworker's PC and remotely interfered with his clicks and cursor movements. Result: The thing is possessed!

PCWorld Senior Editor Robert Strohmeyer suggests using a wireless USB remote presenter instead of a wireless mouse. Similar effect, but you don't have to deal with potential device conflicts (some configurations don't do well with two mice at once). Also, it's more discreet than a mouse—you can even put it in your pocket and stand behind the target while your prank is running.

If your neighbor is catching you with this one, play along. Pretend to call IT, "report" that your computer has been hacked and doesn't work, and take a long lunch.

Prank 5: Switch the Operating System

In the tech-prank universe, nothing will take your target out of their comfort zone like swapping their operating system out for a new one. Installing a new OS is a pain when you actually want to use it, however, so save your prank time by burning a Linux boot CD (try Knoppix, find.pcworld.com/57261) and setting your target's BIOS to boot from a CD before it looks on the hard drive for an OS. Your victim's data will be intact and untouched, of course, but they'll just have to get their work done in OpenOffice instead. And who knows—maybe they'll even like it.

PCWorld Staff Editor Nate Ralph adds his own touch by gluing or duct-taping the optical drive door shut to prevent a target from swapping the disc out. Or you could instead boot from a very, very small USB drive. (Bonus points if you use both the CD and the USB drive.)

On the other hand, if you're the recipient of an unwelcome upgrade, thank them for going out of their way to install a new OS on your PC; then make their Windows Vista or Windows 7 PC look like Windows XP in all its garish neon glory (find.pcworld.com/69415); or switch them to the Windows Classic theme to bring them back to the Windows 95 days. Alternatively, if they're still running XP, just upgrade their PC to Vista (find.pcworld.com/69418). They'll forgive you someday.

Want more pranks? See our slideshow "Pranks for Geeks: 15 Fun Ways to Pwn Coworkers" at find.pcworld.com/69419 ("pwn" is Net slang for "owning" someone).

—Patrick Miller

SWITCH YOUR VICTIM'S theme to Windows Classic (in the Personalization Control Panel) and watch them suffer Windows 95 flashbacks.

Disaster-Proof Your PC: Make a Backup Plan

HERE'S HOW TO do the ultimate hassle-prevention steps for a PC: imaging your hard drive and introducing a backup routine.

Create a Drive Image

This precaution lets you restore your PC to a like-new but custom-configured state if disaster strikes. In theory, you'll need to image your hard drive only once. You may never need the image file—but if you do, you'll be awfully glad you have it.

Countless programs can clone (and restore) your hard drive, but it's hard to beat Macrium Reflect Free (find.pcworld.com/63521).

So where you should store your cloned files? Macrium lets you choose from among DVDs, external drives, and even network drives. I recommend using an inexpensive external hard drive.

Gear Up for Backups

First, read "How to Prevent a Data Disaster" (find.pcworld.com/61670). It has all the info you need to create a diversified backup plan. One app I touted there (DocSyncer) is now defunct, but a freebie called OffiSync (find.pcworld.com/69425) can take its place.

Back Up 7's Libraries

Windows 7's Libraries feature simplifies the task of finding documents, music, pictures, and videos scattered across your hard drive. Unfortunately, libraries do not support network locations. That's a huge hassle if you have multiple PCs and the files you want are sitting on another hard drive.

MACRIUM REFLECT FREE is a drive-imaging program with a friendly, easy-to-use interface, and it can help you schedule your backups.

Enter the Win7 Library Tool (find.pcworld.com/69424), a handy freebie that makes it easy to add network folders to your libraries. If I want to view the digital photos on my wife's PC, I can now add her Photos folder to my Pictures Library. The tool also provides a centralized location for tweaking library settings and lets you change the icons for your libraries.

My favorite Win7 Library Tool feature is backups: You can save a set of libraries for later restoration, such as after you've reinstalled Windows or migrated to another PC.

—Rick Broida

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

What can I do about Vista's annoying User Account Control messages?

—Alex Diluzio, PCWorld.com forums

USER ACCOUNT CONTROL pops up a "Do you want to allow..." message, and does this so frequently that users soon learn to click *Yes* and go on about their business without thinking.

Microsoft kept UAC in Windows 7 but improved it somewhat. I'll give separate instructions for Vista and Windows 7, and one for both.

UAC in Vista

To turn UAC off, click *Start*, type **user**, and select *User Accounts*. Click *Turn User Account Control on or off* and follow the prompts.

If you want to leave it on for regular users, but not for administrators, download TweakUAC (find.pcworld.com/61960). This free utility offers three UAC states. The middle one, 'Switch UAC to the quiet mode', will turn it off only for administrators.

UAC in Windows 7

Click *Start*, type **uac**, and select *Change User Account Control Settings*. You'll get a choice of four UAC levels. The first level, 'Always notify', is basically the same as Vista's UAC. Avoid it.

The second setting notifies you if a program tries to make a change, but not if you do. The third level improves on the second in that it doesn't plunge your screen into darkness before bringing up the notice. The fourth, 'Never notify', effectively turns UAC off.

IN WINDOWS 7, selecting the second setting in the UAC dialog box instructs UAC to notify you only if a program tries to make a change.

Both Versions

In the Professional or Ultimate edition of Vista or Windows 7, select *Start*, type **secpol.msc**, and press **<Enter>**. Navigate the left pane to the Security Settings\Local Policies\Security Options "folder"; scroll to the bottom of the right pane to the User Account Control options.

—Lincoln Spector

Let Win 7's Libraries Simplify File Organization

WINDOWS 7'S LIBRARIES feature is an easy yet powerful tool for streamlining the management of all your files, whether they're stored locally or across a network.

Libraries are a way of organizing folders that simplifies finding, sorting, and manipulating files with a common type of content, even when stored in different locations. Among the uses of libraries:

- **They can aggregate files of a particular type.** If you have photographs in different folders, you can add them all to the Photos library.
- **They can combine folders of a common project.** Say a project consists of multiple groups with data stored in different folders. By creating a library for the project, you can access all its files in one place.
- **They can integrate dispersed media libraries.** Often, people have huge collections of videos, photos, or music that can't fit onto a single drive. With libraries, the collection retains its cohesiveness.
- **They can flatten folders for easy sorting.** You may want to sort files by size or modified date. When you add multiple folders to a library, they can be sorted as if they were part of a single folder.

Libraries show their greatest potential in aggregating local and nonlocal data. In corporate environments we often have data strewn over the network. The benefits of using libraries in this situation are twofold. First, it simplifies navigation. Second, since all library data is indexed, searching in one library yields fast results.

TO CUSTOMIZE a library, change settings in its Properties menu, creating a default folder for files and adding folders from other drives.

Only locations indexed by Windows 7 can be added to a library; to index a network share, enable it for offline use by right-clicking the folder you want to add and clicking *Always available offline.*

In Windows Explorer (**<Windows>-E**), click *Libraries* in the left-hand pane. Navigating here is the same as navigating folders. To create a library, simply right-click on *Libraries,* select *New• Library,* and give it a name.

For a few more details on working with libraries, go to find.pcworld.com/69429.

—Michael Scalisi

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

Is Windows 7's built-in backup worth using? *—Robert, PCWorld.com forums*

I WASN'T PREPARED to like Windows 7's Backup and Restore, but to my amazement, I kind of do. It performs image backups for system protection and file backups for regular data protection—in the Home Premium as well as the Business and Ultimate editions. For file backups, it backs up libraries, app data, and a few other important folders, and it lets you specify any other folders you want.

BACKUP AND RESTORE—part of Windows 7—is Microsoft's best tool to date for performing backups, either automatically or manually.

Backup and Restore can back up files incrementally, saving only those created and changed since the last backup. And if several versions of a file have been backed up, you can pick which one you want to restore. (It defaults to restoring the most recent backup.)

The program also lets you pick which drive to back up to, but not which folder in that drive. Restoring images can be problematic. You can save to a network, but not over the Internet.

A video on how to set up a scheduled, automatic backup with Backup and Restore is posted at find.pcworld.com/69431. Here I'll outline the manual approach. (With automatic backups, the backup media must always be available. An external drive connected to a PC around the clock is vulnerable to the same disasters that could hit the internal hard drive, so connect a backup drive only when you need to. For more on backing up, see find.pcworld.com/69433.)

To launch the program, click *Start,* type **backup**, and select *Back up and Restore.* Plug in your external hard drive and click *Set up backup.* Make your own decisions in the setup wizard, but when you get to the last page, click *Change schedule.* Uncheck *Run backup on a schedule (recommended),* and click *OK.* You're set.

To back up your data (you should do so daily), plug in the external drive, launch Backup and Restore, and click *Back up now.*

You can continue working as you back up.

—Lincoln Spector

RICK BROIDA'S HASSLE-FREE PC

Make Your New PC Hassle-Proof, in Three Key Steps

SO YOU HAVE a brand-new system? I'm sure you're eager to start using it, but take a little time to "hassle-proof" it first. Note: I'm going to assume here that the PC came with Windows 7 preinstalled.

Did you get a new computer recently? Here's how to take hassles out, with a system-repair disc, crapware removal, and security steps.

Create a System-Repair Disc

You never know when a catastrophe will strike your PC, rendering it unable to boot. But few vendors bundle operating-system discs, so you'll have to build your own bootable emergency CD or DVD.

Windows 7 makes this quite easy. Just click *Start*, type **repair**, and then click *Create a System Repair Disc*. Pop a blank CD or DVD into your drive (netbook users will need to connect an external drive), and click *Create disc;* Windows will do the rest.

When it's done, label the disc, and file it away in a handy place. If you ever need it, you can boot the disc to load a basic repair environment, complete with diagnostic tools and System Restore.

You can't do this after a problem has occurred; you must create the repair disc ahead of time. Take 10 minutes and do it right now.

Remove the Crapware

Now let's get the PC running at peak performance—by removing some, if not all, of the software that the system maker preloaded on your machine. Some call it shovelware; I call it crapware.

Why the derogatory moniker? Simple: The proprietary and/or third-party software that many vendors preload on their computers is mostly junk. This useless software consumes space on your hard drive, causes your system to boot more slowly than it should, and just generally gets in the way.

(Yes, I'm looking at you, McAfee Internet Security 90-day trial. And Google Desktop. And Roxio everything. You're not bad products, but I didn't ask for you, and I don't want you unless I want you. Get it?)

Users have two ways to shovel out their preloaded digital stable. One is to install one of my longtime favorite utilities, Revo Uninstaller Portable (find.pcworld.com/64314), and then manually remove unwanted applications one by one.

The other is to take advantage of the aptly named PC Decrapifier (find.pcworld.com/69411), whose sole purpose is to remove crapware. The latest version (2.1) can kick nearly 100 junk apps to the curb, everything from AOL to Yahoo Toolbar. Of course, it's not an all-or-nothing proposition: You can choose exactly which programs this utility uninstalls.

Sure, I see the irony of installing software to remove software. But Revo Uninstaller is one program worth having on hand anyway, and you can dump PC Decrapifier when you're done.

As to which programs you should keep and which you should pitch, follow the old barnyard adage: Tread carefully. If your PC came with a Blu-ray drive and you removed a bundled program like Arcsoft TotalMedia Theater, you might lose the ability to watch Blu-ray movies. So when in doubt, keep it—at least for a while.

In most cases, however, if you see a program that you don't recognize or that you feel confident you don't want (a little googling should answer most questions about it), go ahead and get rid of it.

Keep the PC Secure

Now let's talk security. As any regular *PCWorld* reader knows, computers and their users are vulnerable to all manner of threats, from hackers to phishing ploys to viruses. That's why it's critical to batten down your new machine's hatches from the get-go.

Out of the box, though, Windows 7 is pretty darn secure. Windows Defender, its firewall and built-in antimalware tool, offers robust protection from everyday threats. And the latest versions of Firefox (3.5) and Internet Explorer (8) help keep you safe from pop-ups, phishing attempts, browser hijackings, and the like.

As for e-mail, both Gmail and Yahoo employ Norton Antivirus software at the server level (meaning that you don't have to install anything), along with antispam and antiphishing utilities.

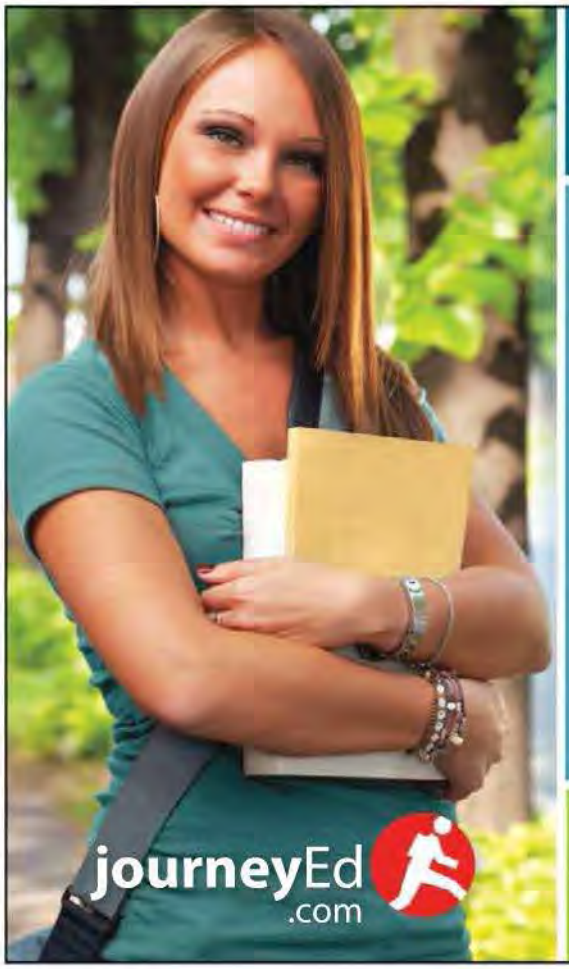
Consider adding a couple of tools to your defensive arsenal. The first is a router; its built-in firewall will effectively render your PC(s) invisible to the Internet at large, so that hackers can't break in.

NEW PCs NORMALLY come loaded with a pile of mostly unwanted software. The free PC Decrapifier utility makes simple work of removing the junk.

The second is Microsoft's widely acclaimed Security Essentials antivirus software. (Read more about this program at find.pcworld.com/69412, and download it from microsoft.com/security_essentials.)

I also recommend Web of Trust (find.pcworld.com/64152), a free browser plug-in that shows if Web links are safe—before you click.

And that's it—no pricey suites needed. (See "Security Software: Protection or Extortion?" at find.pcworld.com/69413 for more.)



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The Back Page

Commodore 64 Meets Windows

AH, THE EIGHTIES—when hair was big, clothing was bright, and 64 kilobytes was a whole lot of memory. Although you may not want to return to the simpler times of the old command line, you *can* turn your Windows desktop into a Commodore look-alike with *PCWorld*'s Commodore 64 desktop theme. Download it from find.pcworld.com/69514. Pac-Man not included.

Fanboys: A Field Guide

We've identified five species of "fanboys"—devotees who revere one tech platform above all others. Here's what makes them tick.

	APPLE FANBOY	PC FANBOY	LINUX FANBOY	BLACKBERRY FANBOY	XBOX 360 FANBOY
MANTRA	"It just works!"	"I'm a PC!"	"Hands off my hard drive!"	"What's your BBM PIN?"	"That's hard-core!"
TURN-ON	Brushed metal	Beige plastic	Terminal interface	Sexting	Chainsaw swords
RAW NERVE	AT&T	Zune	Microsoft	iPhones	PS3
SLANG	"Magical"	"Cool"	"Meh"	"Freemium"	"Pwned"
PSYCH-UP	Coldplay mix	Dave Matthews Band	*Autobahn*	"Back in Black" (AC/DC)	Linkin Park

Plugged In

Micro-Who? According to a recent survey, 3 percent of Brits think Bill Gates is a comedian. Clearly, they haven't been reading his tweets.

Blah, Blah, Blog Teens are no longer blogging, a Pew study says. They've realized sexting is a much better way to horrify their parents.

A Side of Spam Notorious e-mail rule-breaker Tagged.com wins $250,000 in a lawsuit against a spammer. The social network announced the victory in a series of unsolicited e-mails.

Cellular Censorship Google admits that its Nexus One voice recognition software censors "offensive" words. So that's why we had so much trouble discussing the phone's initial $550 early-termination fee.

Photoshop Turns 20 Adobe's image-editing app celebrated with a birthday bash that included Ben Bernanke, Britney Spears, and Andy Warhol. Well, at least they were in the party photo that we saw online.

—JR Raphael and Steve Fox

Have an idea for a Back Page item, from an offbeat screenshot to a wild Windows hack? Send your suggestion to TheBackPage@pcworld.com. You'll earn a small slice of fame, our undying gratitude, and a nifty *PCWorld* mug.

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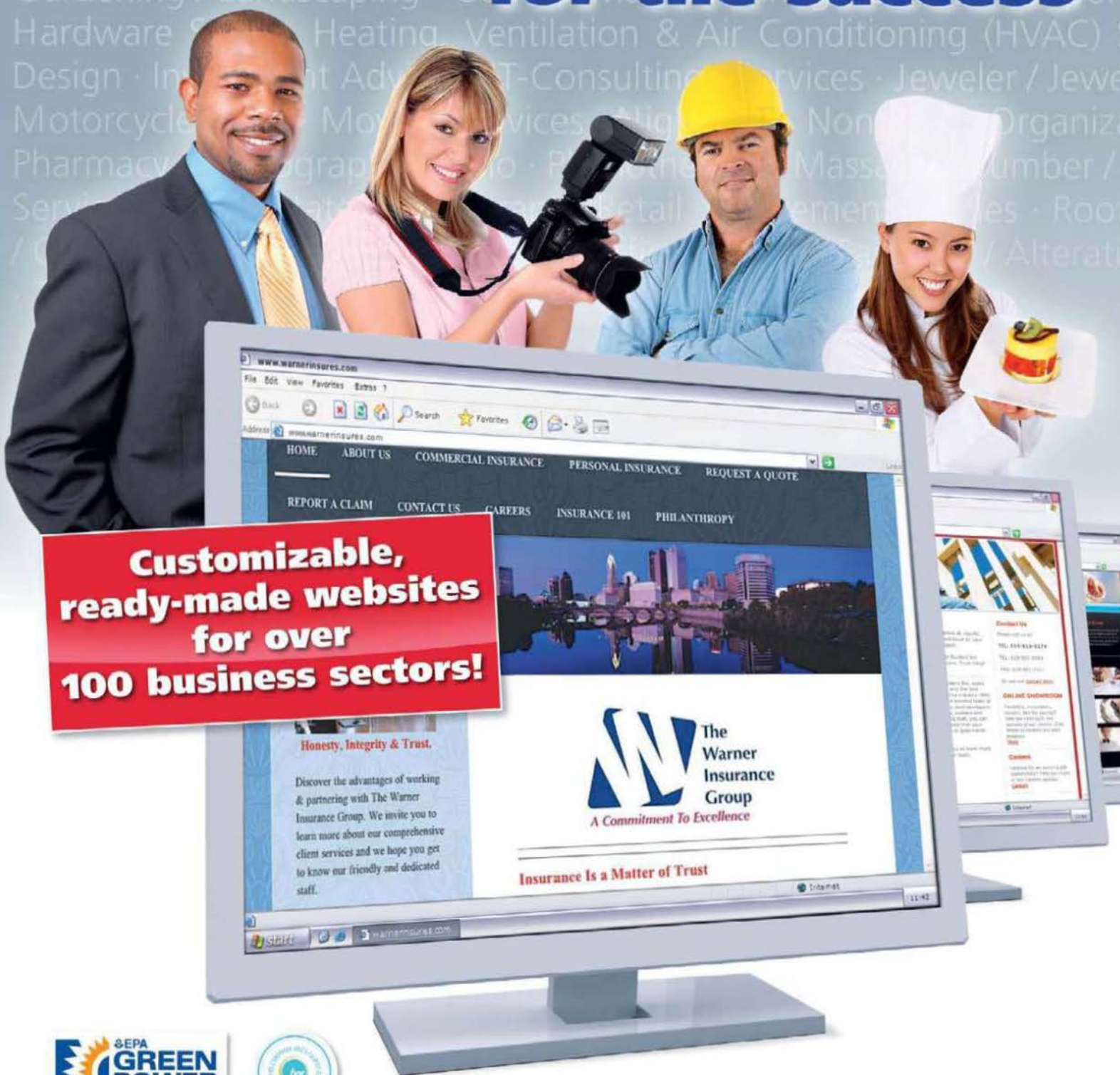

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