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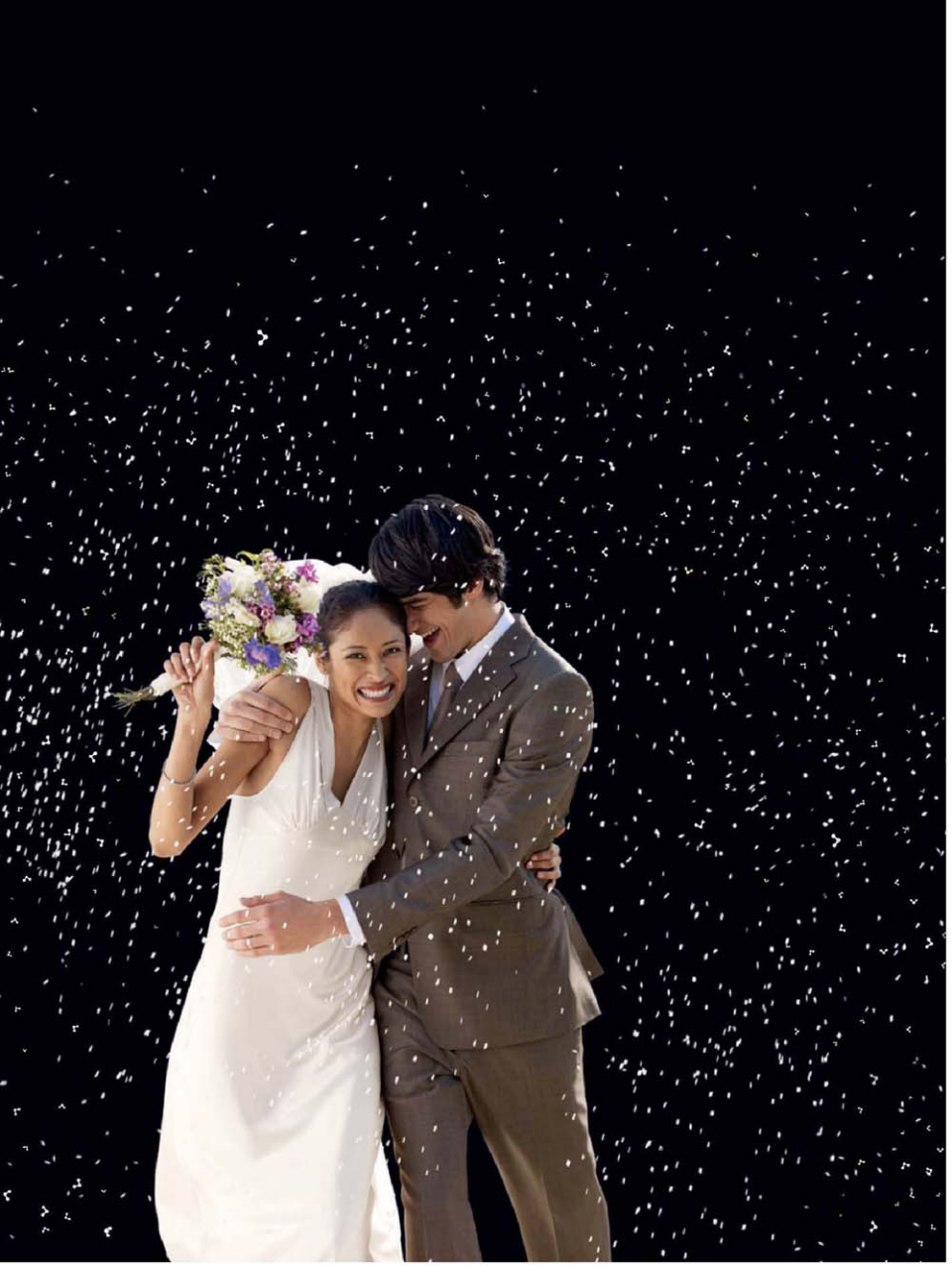

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Next month, *PC Magazine* will become a 100-percent-digital publication. So, in addition to our popular network of Web sites, which includes PCMag.com and ExtremeTech; blogs like Gearlog and AppScout; and audio and video content that includes PCMag Radio, Cranky Geeks and DL.TV, we'll offer *PC Magazine Digital Edition* to all of our print subscribers. *PC Magazine Digital Edition* has actually been available since 2002, so for thousands of you, the benefits of this unique medium are already clear. And those benefits will continue to multiply in the coming months, as we work hard to enhance your digital experience.

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While we are energized by the endless possibilities of the digital format, I assure you that the decision to stop producing a hard-bound copy was not an easy one. But the reality is that the ever-growing expense of print and delivery was turning the creation of a physical product into an untenable business proposition.

I want to personally thank you for more than 27 years of devotion to *PC Magazine* in its print form, and now I invite you to join us, if you haven't already done so, in the digital age. There are many technology innovations on the horizon. It promises to be a wild ride, one for which you'll find no better guide than the PCMag Digital Network.

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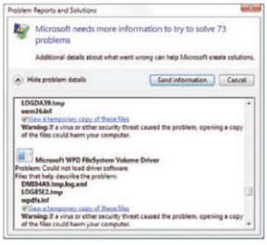
PContents

COVER STORY

Hands-On: Windows 7

57 We give you an exclusive inside look at Microsoft's new OS. Has the company learned the lessons of Vista and created an operating system that is lighter, faster, and more stable? Take a look.



Make Vista Great

61 Win 7 is in the pipe, so in the meantime learn how to make the most of Vista with these insider tips and tricks.

Optimize Your New PC

67 For those lucky boys and girls who got a new PC this holiday, don't miss this must-see guide on ways to optimize, upgrade, streamline, and make it sing.

23 FIRST LOOKS

23 Hardware

HP HDX16t

Lenovo IdeaPad S10

Apple MacBook Pro 15-inch

Apple MacBook 13-inch

Sony VAIO VGC-RT150Y

Plus Quick Looks at the Fujitsu LifeBook A1110, Dell Studio Desktop, and more

32 Business

Lenovo ThinkPad T400

HP Color LaserJet CM2320nf MFP

Western Digital My Book Mirror Edition

38 Software

Network Magic Pro 5.0

Nero 9

Plus Quick Looks at Pandora for iPhone, Reimage.com, and more

44 Consumer Electronics

T-Mobile G1

BlackBerry Pearl Flip 8220

RIM BlackBerry Bold 9000 (AT&T)

Canon A1000 IS

Pioneer XMp3

Altec Lansing Expressionist Bass FX3022

Vizio V420XVT

Plus Quick Looks at the Slingbox Pro HD, Samsung Knack, and more

Cover illustration by Michael Kenney; illustration above by Douglas B. Jones

14 FEEDBACK
Letters from our readers.

FRONT SIDE

17 News
A sneak peek at processor technology in 2009; the dangers of texting while driving; open-source hardware on the rise.

19 Best of the Blogs
Our most popular posts from the PC Mag Network blogs.

21 Connected Traveler
Is a netbook your next travel companion?

OPINIONS

8 First Word: Lance Ulanoff
Windows 7: A better Vista.

52 John C. Dvorak
Looking back on 25 years of Windows.

53 Inside Track: John C. Dvorak

54 Sascha Segan
An impending storm for smartphones?

55 Dan Costa
Trying volume Internet pricing.

SOLUTIONS

75 Make the Most of Firefox 3
Cool new tricks and tips for unleashing this browser's power.

78 Ask the Experts
Loyd Case and Neil J. Rubenking answer readers' questions.

80 Office
Nine hidden Outlook features.

82 Security
Learn how to troubleshoot like an IT pro.

98 THE BEST STUFF
An at-a-glance list of our Editors' Choices in all product categories.

This Month on PCMag.com

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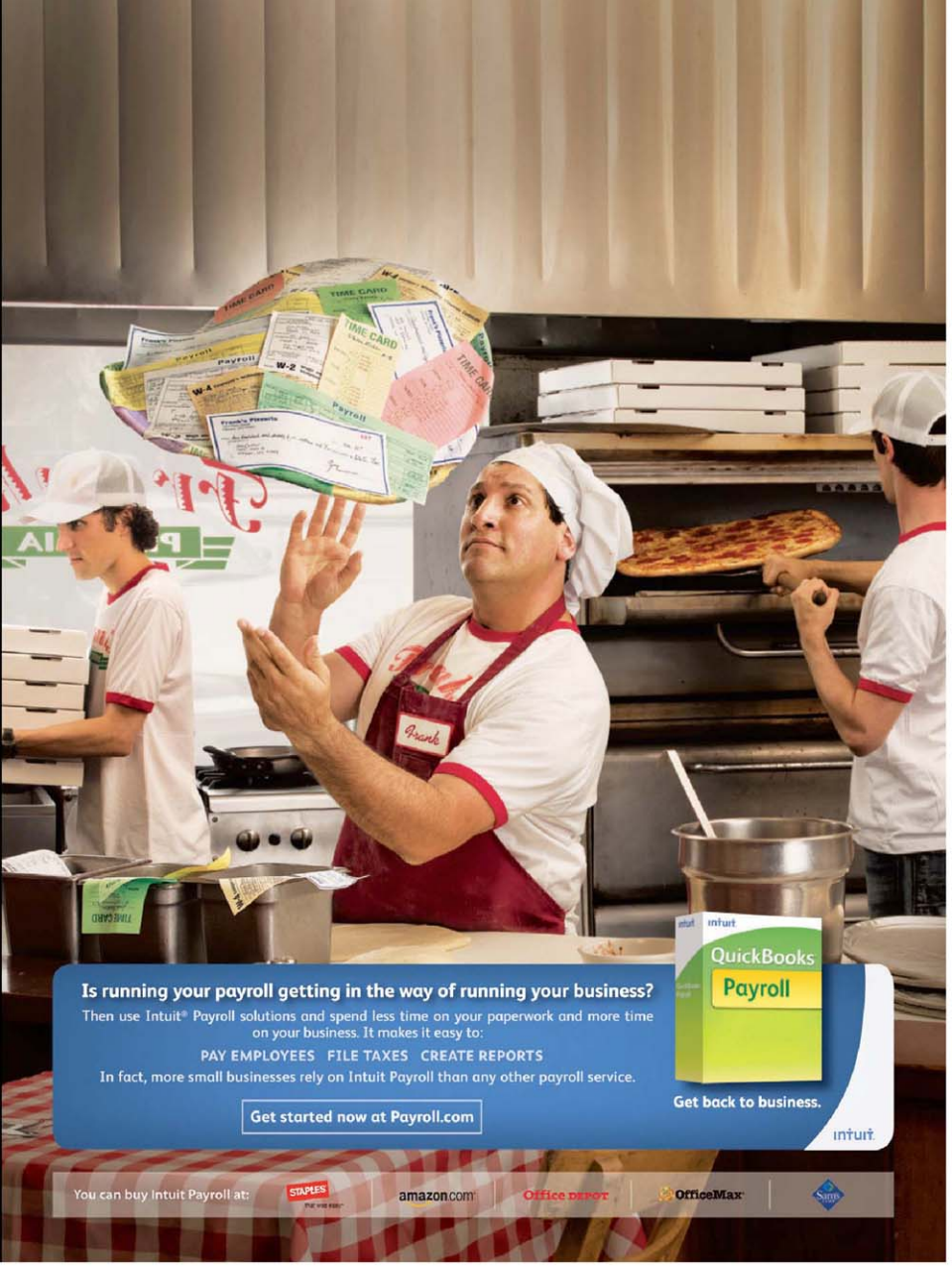

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FIRST WORD LANCE ULANOFF

Windows 7 Is What It Has to Be

Microsoft's Steve Ballmer is right. Windows 7 is Windows Vista, just better. And this is a good thing.

Yeah, I know. It's heresy. Everyone hates Vista, and no one wants the next version to be little more than a sequel—and, potentially, a bad one at that. When I railed against Microsoft for not doing a complete overhaul, I brewed up a complete analogy about how Windows is like the *Star Trek* movies. It went something like this:

Think of all the versions of Windows like the *Star Trek* movies, generally good, but with occasional missteps like *Star Trek III*. For the most part we look forward to each new movie or OS update, but over time, even the good movies (and releases) aren't that good. Finally the series needs a reboot: a new cast, a fresh director, and a new story line. And that's what Windows needs, a reboot. Not another refresh, but a full restart.

Sounds wonderful, but it's also ridiculous. Microsoft can no more reboot Windows than you can change the engine on a moving car. Windows is in billions of PCs around the world. Even the "failed" Vista is on 180 million desktops. A reboot, a full scrapping of the code (dare I say kernel), and complete overhaul of the interface could result in chaos.

Obviously, no one would run out and buy the Windows Reboot, but as with all previous and current versions of Windows, it would simply arrive on new PCs. Look, love or hate Vista, it maintains most of the computing metaphors we've grown to love from Windows 95 to present. I can't imagine a single user who would warm to an experience that scraps everything we know and love or hate about Windows. Plus, ripping out the entire subsystem could mean the compatibility issues that existed with Vista on launch would be magnified a hundredfold.

But Microsoft is not going to do that. It ignored the advice of dozens of pundits and is now playing out a script that, in the end, could make the company look like a band of geniuses.

It started with the marketing campaign: Even Microsoft executives admit The Mojave Experiment made a lot of people in the blogosphere really angry. Thing is, Microsoft doesn't care about the blogosphere. It cares about its customers. Mojave respondents were more like typical Windows customers than some tech geek blogger. Microsoft execs are also pleased with the "I'm a PC" campaign—many of the presenters at the Windows 7 Reviewers' workshop introduced themselves by saying, "I'm a PC."

Recently, I've seen blog posts and messages from some Windows Vista customers who like the OS and wonder what all the fuss is about. Obviously, they have Vista SP1. Some folks at Microsoft think that the release of SP2 will complete Vista's resurrection and that it will become an operating system people like and want. That happened with Windows 98 and XP.

If that's the case, then Windows 7 obviously can't be vastly different from Vista. Certainly not if, by the time Windows 7 arrives, Vista is the darling of millions.

This is not to say that Windows 7 is a carbon copy of Vista. With its simplified taskbar and gesture-based interface, it's obviously not. Microsoft clearly spent a lot of time finding the specific pain points not just in Vista but in XP as well. This has led to smart solutions like the Device Stage, which finally addresses the total disconnect of clicking on a printer icon only to end up in a list of print jobs instead of the printer properties page. Deeper changes like reducing the amount of memory each window uses could very well have been implemented in Windows XP.

Perhaps the difference between Windows 7 and previous updates is that Microsoft is finally being transparent about its plans. Instead of promising "Wow" (big mistake), Microsoft is coming right out and saying that this OS will be a lot like the last one, but in the best and most important ways. Windows 7 will work with everything Windows Vista did—and now that Vista works well with most existing hardware and software, this is especially good news. It's not some failure that Microsoft didn't give in to the blog echo chamber and make more radical changes: It's a design win for Microsoft and its customers.

Windows might need a reboot rather than a refresh, but Microsoft can no more reboot Windows than you can change the engine on a moving car.

I'm sure, by the way, that right now, that echo chamber is gearing up to blast a hole through my midsection.

If I had to describe most of the changes Microsoft made to Windows in version 7, I'd say they were thoughtful. They're smart, intuitive, sometimes obvious, and most are certainly welcome. Microsoft no longer needs to reinvent the wheel.

Maybe Windows Vista is the operating system, in its still somewhat rough form, we need it to be. If that's the case, Microsoft goes from being the miner, blasting out rock to bring forth each successive new operating system, to the sculptor, chiseling, polishing, and even sometimes mortaring to make Windows just work.

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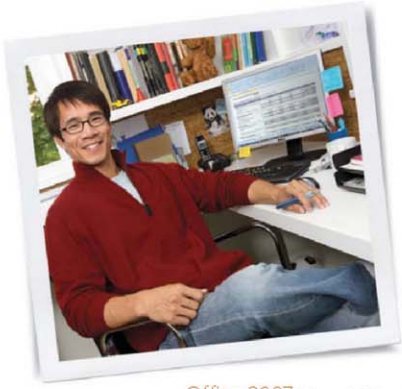

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April 22 2008
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FeedBack

Windows Needs a Boost

I read with interest your feature story on the Windows 7 pre-beta demo "What's Next for Windows" (August, page 57). I am sorry to say that Microsoft and most of the techies around the world miss one essential factor in the success of an OS: performance. This is especially important for the hundreds of millions of us who use PCs for run-of-the-mill tasks like MS Office, e-mail, and Web browsing. By *performance,* I mean that the OS should cold boot in 5 seconds or less, load a common tool like MS Word in 5 seconds, and provide support for multi-core CPUs. The current Microsoft and Intel support for multi-CPU dynamic task allocation is a joke; when you're running MS Word, for example, and the antivirus kicks in, the whole system stops, even with a quad-core Intel processor, 2GB of RAM, and an 800-MHz front bus speed! I was better off with an old Pentium 4 machine with similar memory.

Multicore support requires both Microsoft and Intel to get their acts together, and maybe to ask for help from the Lawrence Livermore National Laboratory, since that group does this for its scientific supercomputing applications.—*Ara Barsamian*

Raise Your Voice for Vista

I can't understand why *PC Magazine* and, for that matter, Microsoft don't talk about an amazing feature of Vista. Built into Vista is truly excellent speech recognition capability. This feature requires only a USB microphone and about 15 minutes to take a "tutorial" that trains your PC to understand your voice.

I can tell you that it really works! You can control the desktop with your voice. After you complete the tutorial, speech recognition is ready to go. Just say "Start listening" to turn it on, and "Stop listening" to put it in Sleep mode. Say "Start" and the Start menu opens. Say the name of a program, such as "Internet Explorer," and that app opens. If you can't figure out how to make something work, just say "What can I do?" and a Help screen opens. Or, if you can't figure out how to get something to start, say "Show numbers" and every active point in the current application or the desktop gets a translucent number. Say the number and the function is performed. You can even dictate e-mail, IM chats, or other documents with pretty good accuracy.

I got one real shock. I told the PC to "stop listening" and went to another room to watch some TV. After a couple of hours I passed my home office and noticed my screen was active. Apparently Vista heard something on the TV that turned on speech recognition, opened Internet Explorer, and surfed to an amusement park Web site! It was really funny to see. So, if you don't want your PC surfing on its own, turn the mic off.—*Bob Walter*

Getting Tough on Green

Through the years, *PC Magazine* has at times been pivotal in nudging the industry in the right direction. I remember Bill Machrone being the first to proclaim that the 80286 chip was "brain dead." And he was right! I remember when PC Mag challenged the software industry to forgo copy protection and to provide functional uninstall routines in Windows, and the industry lined up behind your leadership. I believe it's time to step into that role again.

The technology is now viable to make green PCs and other consumer electronics devices, and you have created your own GreenTech approval seal for products that meet certain standards of energy efficiency and use environmentally responsible manufacturing methods. Bravo! Now I urge you to withhold the Editors' Choice award from any product that does not meet the GreenTech standards. (You may need to update the specifications to accommodate more types of gadgets, however.) Giving prestigious awards to products that fail to meet energy efficiency standards or that are manufactured in environmentally irresponsible ways simply sends the wrong signal.—*Jason Weston*

We've certainly considered and discussed withholding an EC from products that don't meet our GreenTech criteria. But we test a variety of products, and there aren't consistent green standards for all our product categories. Also, some products, like gaming systems, need more juice to achieve their full potential and don't necessarily fit into an overarching green standard. Although meeting green standards is not a necessary criterion for an EC, these days it is becoming an increasingly significant factor in our decision. For now, withholding ECs from all products that do not meet our green standards would be impractical. But we are constantly reexamining our testing

methodology and EC standards as products evolve.—Lance Ulanoff

The Trouble with Troubleshooting

Lance Ulanoff's comments in his column "When Your PC Is a Born Loser" (November, page 7) were spot-on. I use both Windows and Apple systems and have found them both to be frustrating in terms of reliability. I think Apple's "walled garden" allows (or compels) the company to offer vastly superior customer support. The open architecture and broad upgrade path available with Windows systems means it will always be difficult to pinpoint the culprit when there is a defect, especially when you combine hardware and software from different sources. I think every manufacturer, be it of coffee machines, cars, or computers, has a defect rate. Unfortunately, the thinner the profit margins, the poorer the follow-up.—*Richard Johnson*

Neil Knows Security

I have just finished reading some of Neil Rubenking's reviews of security suites such as Kaspersky Internet Security 2009, McAfee Total Protection 2009, and so on. I want to say that they are some of the best reviews that I have ever read. They are easy to understand and helpful in selecting a security suite. Thanks!—*David Newton*

eBay Going the Wrong Way

I read your Front Side news story "Has eBay Outbid Itself?" (October, page 18). I am a small-time eBay user and have generally enjoyed the site since 1998. But with the recent changes eBay management reminds me of an authoritarian government. First it takes away the seller's right to criticize the buyer. And when I tried to sell a DVD on eBay the other day, the site indicated that I could charge only a set $3 fee for shipping a DVD in the future. This, along with an increase in most every other fee, has me wondering whether eBay is worth the hassle. If it wants to sell products outright, fine; it should set up a separate commerce site. Don't go messing with the auction format you drew most of your customers in with, eBay, just to slam the door in our faces for our loyalty.—*Michael Piotter*

Pay Attention to Sascha, *PC Mag!*

I found Sascha Seagan's October column, "Product Reviews: The Problem" (page 68) to be right on the money. I have read many a glowing product review only to find the product to be full of warts. This is true even of Michael Muchmore's review of Apple's MobileMe (October, page 44).

The MobileMe software's problems have been well covered in many other press outlets, in particular the difference in the experience you have if you are a Windows user (not so good) or a Mac user (much better). I did not see any mention of that difference in Muchmore's review. Additionally, since you are *PC Magazine*, I would expect any review to focus more on the experience of non-Mac users.

But what really bugs me is that while Muchmore acknowledges that he too had the same problems with MobileMe as have been widely reported, he goes on to say that these are "issues that Apple has acknowledged and reportedly fixed." "Reportedly fixed?" I thought the job of a journalist was to verify things as opposed to taking the word of a company's PR department.

I understand the need for fairness in the reviews and that you have editorial deadlines and all, but if Apple (or any other company) rolls out a bad product, you should call it like you see it and serve notice to others that they should make sure that they are not shipping alpha versions of their products to paying customers.—*Jim Barrett*

Let Other Countries Play, iTunes

I agree with Jamie Lendino's conclusion, in his First Looks review of iTunes 8 (November, page 34), that the inclusion of the Genius feature warrants the upgrade. So imagine my annoyance when I discover that the use of Genius requires a store account. This may be no problem for users in the U.S. or Europe, but it is impossible to open an iTunes account in most other countries. (A store account requires a credit-card billing address in one of a limited number of countries.) There is no reason to require this, since Genius purportedly uses only songs from your local library. So thumbs down for this "upgrade" until Apple acknowledges its customers in the rest of the world.—*Jan Willem Rosenboom (Cambodia)*

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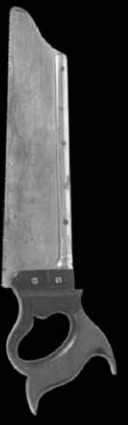

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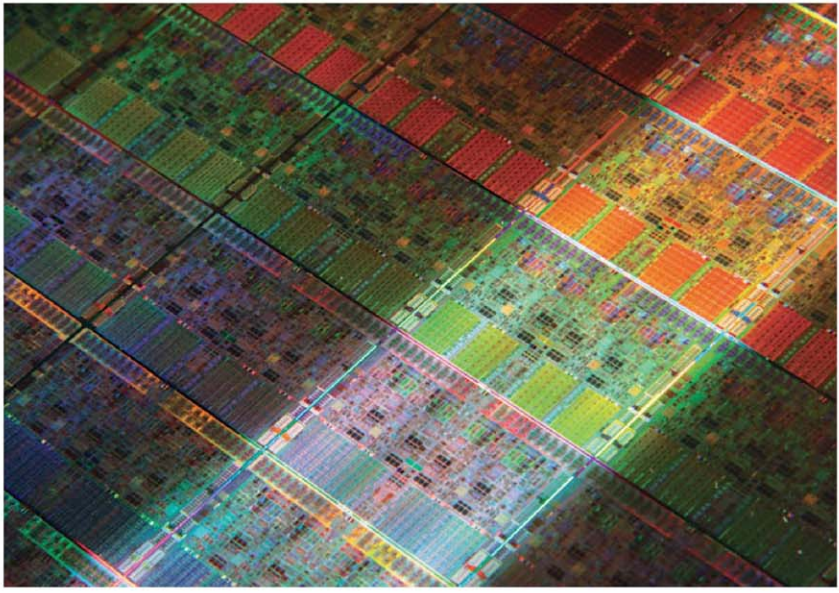


The 2009 CPU Forecast

ExtremeTech's Loyd Case lays out what AMD and Intel processors you can expect to see in new PCs this year.

Choosing a processor is an exercise in predicting the future. The CPU in your computer should last long enough to be able to run the latest software smoothly a few years down the road—but which technologies will survive? In the processor game, Intel has advanced much more rapidly than has AMD—and 2009 looks to be more of the same. Although both companies are poised to introduce new product lines, Intel's offerings have a substantially new microarchitecture, while AMD is only now making the move to the 45nm (nanometer) manufacturing process—which Intel has been using for nearly a year. Intel's new process will result in processors with lower power consumption, higher clock speeds, and more transistors per CPU die.

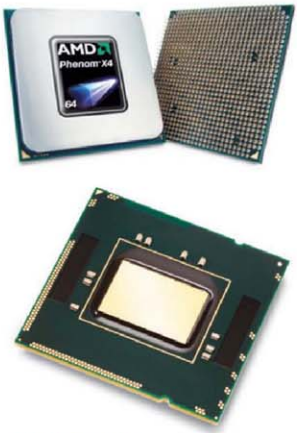
But don't count AMD out just yet. Moving to 45nm should make AMD somewhat more competitive, especially in the mid-range and low-end desktop market. AMD's Phenom processor line had some advantage in certain types of server applications, particularly those that benefited from low latency memory access.

What may end up drowning out AMD's accomplishments in 2009 is the buzz surrounding Intel's much-hyped processor line—Nehalem. Also known as the Core i7 series, these quad-core desktop processors come in 2.66-, 2.93-, and 3.20-GHz flavors and tout advances such as DDR3 memory support, four cores on a single die, a new QPI (QuickPath Interconnect) system bus, and the new X58 chipset for high-end performance. Core i7 will be found mostly in high-end systems, but later this year, Intel will roll out the mainstream Lynn-

field (quad-core) and Havendale (dual-core) processors. Havendale is Intel's first attempt at integrating a graphics core on a CPU, and Lynnfield, instead of CPU-integrated graphics, will work with the Ibex Peak chipset (which integrates the display controller, separating display and graphics into different chips).

In terms of laptops, Intel will try to close the power gap between desktop and mobile systems. We saw quad-core Penryn mobile processors in 2008, and 2009 will bring the four-core Clarksfield CPU. Based on the Nehalem architecture, Clarksfield will most likely appear on big, high-performance desktop replacement laptops with 17-inch HD screens. A dual-core version named Auburndale will also ship in the second half of 2009. These CPUs will push the Montevina and Santa Rosa platforms into lower-end segments of the market.

Intel will also continue to cash in on the netbook craze in 2009 with a successor to the highly popular and energy-efficient Atom processor—Pineville. Pineville will integrate graphics and a memory controller onto the CPU, effectively building a system-on-a-chip (SoC).



SMALL WONDERS The AMD Phenom X4 (top) and Intel Core 17 (bottom) are two processors that will boost speed and energy efficiency in 2009.

All the hype over Intel's plans in 2009 doesn't mean that AMD is out of the race. Previously hobbled by sticking to the older 65nm CPU, the company could well find its niche by offering super-energy-efficient processors using the 45nm manufacturing process. Launched in late 2008, AMD's Shanghai line is its first set of 45nm quad-core CPUs to be based on the Phenom architecture. Shanghai processors offer 6MB of L3 cache (up from 2MB) and HyperTransport 3 support. However, Shanghai will still have an embedded DDR2 memory controller, which means it will trail Intel in overall memory bandwidth.

A major change recently announced at AMD is that it is shedding its manufacturing operation, transferring its manufacturing assets to a new company that will not be part of AMD. This will allow the company to focus on design and engineering, which could mean catching up to and perhaps even surpassing Intel in 2009 and beyond.—*Loyd Case*

Sending the Wrong Message

Texting while driving is causing accidents on the roads of America.

It may not be long before you see this message on your cell phone: "Getting in accident. Txt u ltr?" That's because texting while driving is on the rise—and leading to more crashes. This phenomenon grabbed headlines last September when the conductor of a California train missed a signal and ran head-on into an oncoming freight train, killing 25 people. It was later revealed that the conductor was sending text messages just seconds before, a fact that investigators concluded led to the deadly collision. And in June 2007, five girls died when their vehicle collided with a tractor-trailer in Rochester, New York; police discovered that the driver's phone was being used for text messaging just before the crash.

TEXTING TRAGEDY Texting while driving can lead to serious accidents, such as this train collision in California that killed 25 people.

According to a report from the London-based RAC Foundation, driving while texting is more dangerous than driving under the influence of alcohol or marijuana. In a test of drivers between the ages of 17 and 24, those who had consumed alcohol to the legal limit—0.08 for most U.S. states—saw a 12 percent reduction in reaction time, compared with 21 percent for marijuana. Texting, however, led to a 35 percent reduction for those who composed or read text messages while driving.

In response, at least 16 states, including California, Washington, Alaska, Louisiana, and Minnesota, are proposing or have already enacted bans on texting while driving.

"Certainly, texting is the issue du jour this year in the legislatures," says Matt Sundeen of the National Conference of State Legislatures in a recent interview with *U.S. News & World Report*.

The legislatures, it turns out, are right to be concerned. The U.S. National Highway Traffic Safety Administration estimates that four out of five car crashes are due to distracted drivers. And with 47 percent of drivers between the ages of 18 and 24 admitting to texting while driving (according to a recent survey by legal Web site Findlaw.com), legal repercussions may be the only way to prevent an "OMG!" moment.—*Chloe Albanesius*

Photograph (bottom): David McNew/Getty Images

BEST OF OUR BLOGS

@WORK
blogs.pcmag.com/atwork
Google Means Business with Analytics
Google announced that it is rolling out enterprise-class features for its Google Analytics Web service. The search giant is going after Microsoft's key enterprise markets (Microsoft's adCenter Analytics and its Analysis Services) in a big way. The Analytics service comes with richer data visualization capabilities, an API, better reporting and navigation screens, integration with Google AdSense, and Motion Charts, which provide multidimensional analysis. The API is certainly a sign that Google is aggressively looking to penetrate the business intelligence market. Ultimately, however, the success of the service will depend on what the community creates with the API.—*Mario Morejon*

TECHNORIDE
www.technoride.com
In-Car Computer Hits the Outback

Westwell and Azentek announced the world's first fully integrated in-car PCs, the Azentek CPC-1200 and CPC-1100 in-dash car computer systems, in Australia. The PCs act as high-end car stereos, and also offer GPS navigation, mobile-phone integration via Bluetooth, multimedia playback, and automobile diagnostics. The CPC-1200 is a complete Microsoft Vista-based PC with a 1.66-GHz Intel Core Duo T2300 processor and 1GB of RAM. It plays DVDs, music and Internet radio, offers GPS functionality with a touch screen, can make and receive mobile calls, and offers voice-enabled e-mail. Pricing is still undetermined.—*Jamie Lendino*

GOODCLEANTECH
www.goodcleantech.com
Cali Upstart Brings Solar Power to Main Street

Want to go green and reduce energy costs, but can't afford photovoltaic solar panels? Luckily, California's SolarCity, a solar market innovator we first mentioned last year, has come up with a way to make solar energy affordable. Rather than selling costly PV equipment at face value, the company decided to lease solar panels to homeowners for a monthly payment. How much? A typical 2.8-kilowatt system yielding roughly 10 to 15 percent in monthly savings costs $125 per month. And here's the best part: All installation work is included, and a minimum level of power production is guaranteed.—*Steven Volynets*

GEARLOG
www.gearlog.com
On: Audio Bone Headphones
Japan-based company Goldendance has released the Audio Bone ($189): bone-conduction headphones that sit in front of your ears and amplify your music by vibrating your skull. Bone conduction has a number of advantages over traditional headphones, such as being less likely to contribute to hearing loss because they bypass the ear drum. When I tested the Audio Bone, I found that the sensation isn't off-putting at all. The sound quality, however, is not so great.—*Brian Heater*

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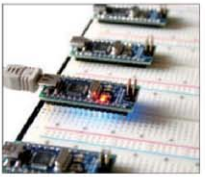
Hacking Hardware Design

Daring entrepreneurs are bringing the idea of open sourcing to PC components.

Say you just designed a new piece of hardware. In the past, your next step would be to patent the design and secure the intellectual property rights. Then, you'd find a manufacturer and start selling your widget. A new model, patterned after the open-source software movement, is to release the hardware design into the wild. That way, anyone can order the materials and make the product without hiring attorneys, buying design specifications, arranging complex licensing agreements, and competing with other commercial vendors.



OPENED UP The Arduino Nano open-source microcontroller.

The idea of open-source hardware is gaining traction, according to MIT professor Eric Von Hippel, because the design work is not tied to the manufacturing process. "Open-source software and open-source hardware are precisely the same thing at the design stage," says Von Hippel.

Companies such as Bug Labs, Rowetel, Neuros, Arduino, and Openmoko are exploring open-source hardware as a viable business model, releasing their designs in the hope that companies will use them for their own products and credit the original designer. Today, open-source software developers often make money by doing consultant work on their freely released creations. With hardware, the designers have similar aspirations, but some just want to get noticed.

"Open-source hardware grew out of places where people are not hiding behind intellectual property," says Tom Igoe, a professor at NYU's Tisch School of the Arts who also works with Arduino. "It has an art school vibe."

In many ways, open-source hardware is a reaction to the closed design process at large companies such as Apple and HP, who control every dot and twiddle of the final product spec. With open source, community support often leads to innovation, but not necessarily to a steady income.

"This seems to me to be the big question around open hardware: Does it enable a sustainable business model or is it just a fun hacker sideline?" says Steve Tomlin, CEO of Chumby Industries, a company that has found a good balance: closed hardware but open software. According to Bob Waldie, CEO of network switch company Opengear, the answer lies in building the developer community. That, he says, is the long-term golden ticket.—*John Brandon*

Do You Need a Netbook?

These tiny, travel-friendly computers are all the rage. But should they replace your regular laptop on the road?

MSI Wind
$480 street
●●●●○

PC MAGAZINE EDITORS' CHOICE

PROS Big 10-inch screen. Very light. 80GB hard drive. Windows XP Home Edition.

CONS Needs a bigger battery. Although pleasant to type on, the keyboard needs to be full-size.

Lenovo IdeaPad S10>
$469 direct
●●●●○

PROS Runs the Intel Atom platform. Big 10-inch screen. Very light. 160GB hard drive. ExpressCard slot.

CONS Needs a bigger battery. 90 percent keyboard falls short.

< HP Mini 1000
$550 direct
●●●◐○

PROS Gorgeous, big (10-inch) glass screen. Best-looking design. Lighter than its rivals. WWAN, bigger battery, and excellent Ubuntu distro options later this year. Superior keyboard.

CONS Mouse buttons are awkwardly placed. Slow-spinning hard drives. VGA-out requires a dongle.

Netbooks are the hottest things to hit the mobile computing scene in years. They're cheap, stylish, and weigh no more than 3 pounds—characteristics any traveler can love. But are they ready to replace your current laptop on a long business trip or on an extended vacation? With many brands flooding the market, here's what you need to know before plunging into your netbook purchase.

First, a netbook is a fully functional laptop with a display in the 8-to-10-inch range, so they are all easy to tote around. Almost all models have several USB ports, a webcam, a media card reader, built-in Wi-Fi, and integrated speakers. But what separates them from typical laptops is the processing platform they run on. The vast majority of netbooks run on the Intel Atom platform (with others using VIA technologies) and include up to 1GB of system memory, depending on the operating system you choose.

Typically, netbooks don't come with optical drives. Overall, they are great for small to medium workloads, and with some patience you can even tackle heavier loads like editing photos and videos. But there are still other factors to consider.

The general consensus is that a 10-inch widescreen is the sweet spot for netbooks. Since they all have the same resolution (1,024-by-600), crank up the brightness and check the viewing angles to decide whether you can comfortably do work and watch movies on it. Every netbook so far has an undersize keyboard, but some have bigger ones than others. Check the keyboard "pitch" (measured from letters Q to P) to see which come closest to 19 cm. The biggest we've seen is a 92 percent keyboard, or 17.5 cm. So if you do a lot of typing, you may want to stick with your regular laptop.

Most netbooks are pretty slim on other features, but there are a few standouts. Several netbooks come with an ExpressCard slot, which can expand port and wireless capabilities. At this rate, capacities of solid-state drives (SSDs) aren't quite there yet, so look for spinning hard drives. The minimum should be an 80GB, 5,400-rpm model, but there are others that go as high as 160GB. In addition to the battery that comes standard with your netbook, consider buying an extra six-cell unit—especially handy for long flights.
—Cisco Cheng

BEST *of the Internet*

NOTIFU
www.notifu.com
This Web service lets you send a message to a group via e-mail, IM, or SMS and then notifies you if the message has been received and acknowledged. You can pose questions to your group and let members respond.*—Alan Henry*

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Developed by students and faculty at some of the country's top universities, Shmoop provides students, teachers, and everyday readers with a resource to help them engage with literature, poetry, or American history through summaries and multimedia content.*—AH*

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HP HDX16T

HP's Gorgeous Media Center

The HP HDX16t rides the line between a thin-and-light and a desktop-replacement laptop. Whichever category it falls into, you're bound to do a double take when you see it. The sleek 16-inch widescreen represents the dawn of laptops doubling as high-def home theaters. It is designed to fit into a living room or home office, and the fast Intel Centrino 2 components will keep it from becoming a relic overnight.

The HDX16t looks and feels modern. The in-mold decorated design on the cover consists of squiggly lines varying in length, curvature, and color. The palm rests and touchpad receive the same artistic treatment. Also, the HDX16t fits in a compressed numeric keypad without sacrificing the comfort of a full-size keyboard. The widescreen display has a 16:9 aspect ratio, giving a sensational movie experience. This system also has plenty of USB ports (four) in addition to the combo port and memory card reader. A 250GB hard drive comes standard, but you can upgrade to a 320GB drive for $25.

While this system's 2.8-GHz Intel Core 2 Duo T9600 processor is blazingly powerful—especially when coupled with 3GB of memory—you'd be better off with the 2.4-GHz P8600 processor option, because it's less expensive and more energy efficient. But the 2.8-GHz processor does dominate in benchmark tests. Its SYSmark 2007 Preview Overall score bested the Sony comparison system by 3 percent and the Acer system by 48 percent. It finished the video encoding tests in under a minute, something that its competitors couldn't accomplish. And the HDX16t's graphics chipset excelled on 3DMark 06, Crysis, and World in Conflict tests.

In everything but battery life, the HP HDX16t's performance scores and feature set trump those of its competition. This system is sure to liven up your living room or home office and is a worthy recipient of our Editors' Choice.—*Cisco Cheng*

Specs: 2.8-GHz Intel Core 2 Duo T9600; 3GB DDR2 SDRAM; 250GB, 5,400-rpm hard drive; 512MB nVidia GeForce 9600M GT graphics; 16-inch, 1,920-by-1,080 display; Intel WiFi Link 5100 802.11n; 6.8 pounds (7.9 pounds travel); four USB ports, one FireWire port; 56-Wh, 5.2-Ah, lithium ion battery; Windows Vista Home Premium.

HP HDX16t
$1,790 direct
●●●●◐

PC MAGAZINE EDITORS' CHOICE

PROS Gorgeous 16-inch widescreen. Numeric keypad. Internal TV tuner. eSATA port for storage expansion. Excellent performance scores.

CONS Could use a higher-capacity battery option.

For more: go.pcmag.com/hphdx16t

PERFORMANCE TESTS

▲ High scores are best.
▼ Low scores are best.
Bold type denotes first place.

	MOBILEMARK 2007 ▲ hours: minutes	SYSMARK 2007 PREVIEW OVERALL ▲	MULTIMEDIA TESTS ▼ WINDOWS MEDIA ENCODER minutes: seconds	PHOTOSHOP CS3 minutes: seconds	GAMING TESTS ▲ CRYSIS 1,024 x 768*	WORLD IN CONFLICT 1,024 x 768*
HP HDX16t	**2:08**	**136**	**0:58**	**0:29**	17.8	**20**
Acer Aspire 6920G-6071	**3:42**	92	1:31	0:48	21.4	16
HP Pavilion dv5t	3:12	127	1:07	0:31	**22.9**	**20**
Sony VAIO VGN-FW198UH	1:56	132	1:05	0:31	N/A	11

RED denotes Editors' Choice. N/A—Not applicable: The product could not complete the test, or the test was too limited. * Anti-aliasing/Anisotropic filtering was set to off.

INSIDE

23 Hardware
32 Business
38 Software
44 Consumer Electronics

Dell UltraSharp 2408WFP
$689 direct

●●●●◐

PROS Excellent color and text quality. Tons of A/V ports. Highly adjustable.

CONS Has trouble displaying the very darkest shades of gray. No auto pivot. You pay a premium price for this premium monitor.

For more: go.pcmag.com/dell2408wfp

DELL ULTRASHARP 2408WFP

Big Screen, Bold Color

If you're looking to make the move to a 24-inch desktop monitor, put the Dell UltraSharp 2408WFP on your short list. The overall image quality on this versatile, 1,920-by-1,200 display is outstanding, and it offers an unusually large variety of multimedia connections. Its wide-color-gamut technology—which translates to vibrant images with great color fidelity—is icing on the cake.

This attractive display has clean lines with a thin black bezel and silver trim, while the back is predominantly silver with black grillwork. The panel is supported by a V-shaped base and mounting arm that provide the full range of position adjustments, including height, tilt, swivel, and pivot maneuverability. On the back of the display you'll find all sorts of A/V connections, including HDMI, DisplayPort, analog (VGA) inputs, dual-DVI ports, three USB ports, and connectors for composite, component, and S-Video. There are two additional USB ports and a 9-in-2 card reader on the side.

The 2408WFP, with its 6-millisecond (gray-to-gray) pixel response, handled fast-motion video and 3D gaming quite well. I was unable to detect any sign of ghosting or lag while blasting my way through a round of F.E.A.R., and our test DVD looked spectacular. I did observe a slight loss of detail in the darker scenes, but it was barely noticeable. Although this display is expensive, its superb image quality, rich color rendition, adjustability, and multimedia functions helped it to garner an Editors' Choice and make it well worth the expense for those who demand the most in performance and features.—*John R. Delaney*

Lenovo IdeaPad S10
$469 list

●●●●○

PROS Runs the Intel Atom platform. Big 10-inch screen. Very light. 160GB hard drive.

CONS Needs a bigger battery. Noisy mouse buttons. Its 90 percent keyboard falls short of the competition.

For more: go.pcmag.com/lenovos10

ALSO REVIEWED AT PCMAG.COM

ASUS Eee PC 900
$550 street

●●●●○

Dell Inspiron Mini 9
$399 direct

●●●○○

HP 2133 Mini-Note PC
$749 direct

●●●●○

MSI Wind
$480 street

●●●●○

RED denotes Editors' Choice.

LENOVO IDEAPAD S10

Netbook with the Right Stuff

The rapid emergence of netbooks, or UMPCs (ultra-mobile PCs), over the past year has changed the landscape of affordable mobile computing. Although these little ultraportables are meant to satisfy basic computing needs, an imaginative user can take them well beyond their intended roles. Only a few netbooks have gotten it right so far, and the Lenovo IdeaPad S10 is one of them. Its right stuff includes a 10-inch screen, Intel Atom processor, 160GB hard drive, ExpressCard slot, and a price as sweet as that of our current Editors' Choice, the MSI Wind.

The S10 is clad in white (a red version is also available), and its dimensions of 7.3 by 9.8 by 0.9 inches (HWD) are similar to those of the Wind. Its shape resembles a rectangular box, and at 2.7 pounds, it is one of the heaviest netbooks out there. The S10's keyboard is a bit underwhelming, and the mouse buttons are noisy and overly resistant when pressed. This netbook's feature set is as strong as the Wind's, however: It has two USB ports, a 4-in-1 card reader, VGA-out, Ethernet, a webcam, and 802.11g Wi-Fi.

The 1.6-GHz Intel Atom N270 is a wise choice as well, as it is the fastest and most energy-efficient netbook processor. The S10's Overall score of 39 on SYSmark 2007 Preview, although it's 2 percent lower than that of the Wind, means that this laptop is fine for office tasks, Web browsing, and light photo editing. And its score of 4 minutes 38 seconds on our video encoding tests is much faster than the Wind's. Battery life was almost identical. Its cramped keyboard and lack of battery options kept it from an Editors' Choice, but it is still a great choice.—*Cisco Cheng*

Specs: 1.6-GHz Intel Atom N270; 1GB DDR2 SDRAM; 160GB, 5,400-rpm hard drive; 64MB Intel Graphics Media Accelerator 950; 10.2-inch, 1,024-by-600 display; Broadcom 802.11g; 2.7 pounds (3.4 pounds travel); two USB ports; 28-Wh, 2.5-Ah lithium ion battery; Windows XP Home Edition.

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- Heather Clancy, ZDNet.com

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APPLE MACBOOK PRO 15-INCH (DUAL GRAPHICS)

MacBook Pro Offers Speed and Endurance

Rarely does Apple update an entire line of laptops in one fell swoop. While the new aluminum MacBooks didn't come as a surprise, a new MacBook Pro seemed like a long shot. The latest crop of MacBook Pros benefit from a new manufacturing process and host of performance tweaks that keep them among the best notebooks on the market. The Apple MacBook Pro 15-inch (Dual Graphics) is an amazing piece of design engineering, with a glass screen, a lighter and thinner aluminum chassis, a multipurpose touchpad, and dual nVidia graphics cards.

At 5.5 pounds, this MacBook is slightly heavier than the previous MacBook Pro (5.3 pounds), but it's the only 15-inch mainstream laptop that is less than one inch thick. Though not the first to have a glass screen, the 15.4-inch widescreen is still a sight to behold. Typing on the MacBook's keyboard is an absolute pleasure, and the illuminated keys are a great asset in darkly lit areas. This system also comes with gesture capabilities, such as pinching, rotating, and enlarging with two fingers. And don't forget about the dual graphics: The nVidia GeForce 9400M GT preserves battery life, while the nVidia GeForce 9600M GT boosts 3D performance. One feature I missed was a flash memory card reader.

Because of a lower clocked processor, the MacBook Pro trailed our comparison system, the HP HDX16t, on most of our benchmark tests, including the video-encoding tests, CineBench R10, and SYSmark 2007 Overall. However, this system did perform well on 3D benchmark tests. If you are a Mac loyalist, you will love this laptop. But comparing features head-to-head, the HP system offers a little more for your money.—*Cisco Cheng*

Apple MacBook Pro 15-inch (Dual Graphics)
$2,499 direct
●●●●○

PROS Now less than one inch thick. Design has no equal. Switchable graphics. Gesture and clickable touchpad. Still the lightest 15-inch laptop. Gorgeous glass screen. Illuminated keyboard. Excellent typing experience.

CONS Lacks a built-in media card reader. Features aren't the strongest. Pricey.

For more: go.pcmag.com/macbookdual

APPLE MACBOOK 13-INCH (ALUMINUM)

High Design Doesn't Come Cheap

This MacBook is made with a completely new manufacturing technique that begins with a thick slab of aluminum and ends with a lusciously thin and gorgeous product. Design alone could undoubtedly attract both Mac fanatics and Windows converts. However, features are still a little weak. And the price? Well, it's not the $800 MacBook that we were all hoping for.

It is easy to mistake the new silver MacBook for the MacBook Air, since their dimensions are nearly identical: The MacBook Air is just slightly thinner. The aluminum enclosure, which is a huge departure from the long-standing tradition of Apple's white polished laptops, is a testament to brilliant design engineering. In many ways this MacBook is a cheaper and more feature-rich version of the MacBook Air. Here you get the edge-to-edge glass screen as well as superior typing and navigation (including gesture capability). But unfortunately, the feature set is the most underwhelming part, hampered by such factors as the lack of a media card reader and no upgrades to the ports on this system (except for the new mini-DisplayPort).

Performance scores were what I expected from a system with the energy-efficient Intel Penryn P8600 processor, though the video-encoding and Photoshop CS3 scores seemed a little low for this processor and memory configuration. Battery performance took a slight hit because of the nVidia graphics card, lasting 3 hours 10 minutes on our tests. Again, Apple scores big points for design. But like the 15-inch MacBook Pro, this system offers a little less for the money than equivalent Windows-based systems.—*CC*

Apple MacBook 13-inch (Aluminum)
$1,599 list
●●●◐○

PROS Aluminum design is absolutely gorgeous. Half a pound lighter than the original MacBook. Glass screen adds to its overall sex appeal. Unique touchpad that incorporates the mouse click. Adds gesture capabilities to touchpad. Excellent typing experience. Improved performance. Better 3D graphics.

CONS Omission of a media card reader inconveniences point-and-shooters. No ExpressCard slot for expansion. No more FireWire. Smaller battery than the original MacBook.

For more: go.pcmag.com/macbookaluminum

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Sony VAIO VGC-RT150Y
$3,999.99 list
●●●●○

PROS Quad core in an all-in-one PC. Huge 25.5-inch LCD screen. Wireless networking and connectivity (Wi-Fi, BT, keyboard/mouse). HDMI input and output. Lots of I/O ports. ATSC/HDTV TV tuner. eSATA. Easy access to hard drives. Looks like a monitor. Blu-ray burner.

CONS Crazy pricey. Runs a little hot under load. Still some crapware (but much less this time). Tray-loading Blu-ray drive. Only 90 days Windows Live OneCare (antivirus, backup, and firewall).

For more: go.pcmag.com/sonyrt150y

SONY VAIO VGC-RT150Y

A Digital Artist's All-in-One PC

Look out, Apple—there's a stylish new all-in-one desktop in town. The Sony VAIO VGC-RT150Y, a sleek black multimedia PC with quad-core power, can compete with the best Macs out there. Unlike the VAIO TV/PC combos of yore, the RT150Y is a professional-grade system—with a price to match.

The RT150Y's centerpiece is its 25.5-inch LCD screen, with a native resolution of 1,920-by-1,200 (16:10), which is perfect for creating 16:9 HD video content or viewing a two-page spread. It has a matte finish for combating glare and Sony's XBrite-FullHD technology—along with 1080p support. Inside, this system has powerful components, including a 2.66-GHz Intel Core 2 Quad Q9400 processor, dual 500GB hard drives in a RAID 0 array, and 8GB of RAM. Most notable is its envy-inspiring multimedia hardware: an ATSC/HDTV tuner, a Blu-ray burner, flash memory card readers, and HDMI input and output ports. This is the first system I've seen that has HDMI input as well as output. The system's 512MB nVidia GeForce 9600M GT graphics card is good enough for medium-level 3D gaming.

The RT150Y is a very good multimedia performer, scoring 28 seconds on Photoshop CS3 and 40 seconds on Windows Media Encoder, among the best scores I've seen for multimedia PCs. This system can play newer 3D games like World in Conflict (35 frames per second), but it struggled with Crysis (27 fps). I was pleased to find that the crapware typically found in VAIO systems has been cut way back, which gives a nice performance boost. Although this VAIO is a bit overpriced, high-level pros who love good design and want to stick with Windows should consider the RT150Y.—*Joel Santo Domingo*

Specs: 2.66-GHz Intel Core 2 Quad Q9400 processor; 8GB 800-MHz DDR2 SDRAM; two 500GB, 7,200-rpm SATA hard drives in a RAID 0 array; 512MB nVidia GeForce 9600M GT graphics card; Blu-ray writer; five USB 2.0 ports, one FireWire port, integrated 2.1 speakers, Windows Vista Ultimate (64-bit).

PERFORMANCE TESTS

▲ High scores are best.
▼ Low scores are best.
Bold type denotes first place.

	SYSMARK 2007 PREVIEW OVERALL ▲	MULTIMEDIA ▼		GAMING (fps) ▲	
		WINDOWS MEDIA ENCODER min:sec	PHOTOSHOP CS3	CRYSIS 1,920 x 1,200*	WORLD IN CONFLICT 1,920 x 1,200*
Sony VAIO VGC-RT150Y	N/A	**0:40**	0:28	27	7
Apple iMac (24-inch Penryn 3.06 GHz)	**147**	0:57	**0:26**	**37**	**15**
HP Pavilion Elite m9400t	132	0:46	0:29	20	7
HP TouchSmart IQ506 PC	N/A	1:34	0:40	6	N/A

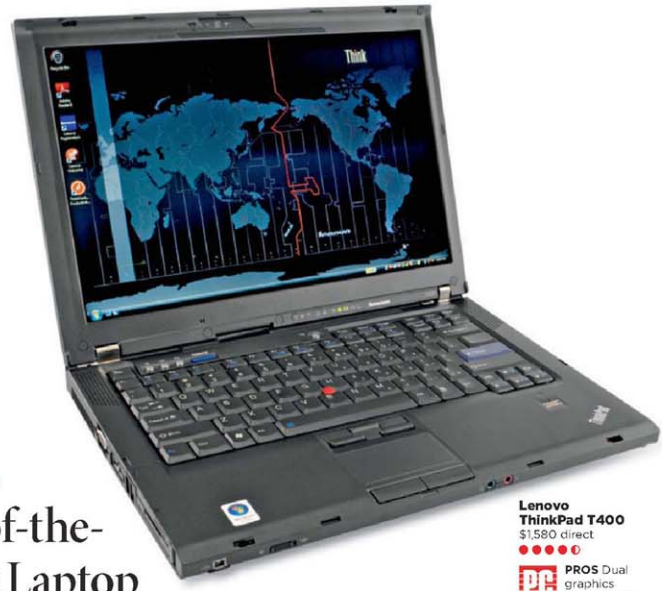
RED denotes Editors' Choice. N/A—Not applicable: The product could not complete the test, or the test was not compatible.
* Anti-aliasing/anisotropic filtering was set to 4X.

Quick Looks

Visit pcmag.com for the full reviews of these and scores of other hardware products.

RED indicates Editors' Choice

	PROS	CONS	BOTTOM LINE	SPECS
DESKTOPS				
HP Pavilion Elite m9400t $1,109 list, $1,400 with 20-inch wide-screen monitor ●●●●○	• Quad-core performance • Nice design • Dual removable hard drive bays • ATSC/HDTV TV tuner • Blu-ray/HD DVD combo drive • Abundant inputs and outputs	• Contains crapware • Smallish installed hard drive (though lots of options for expandability)	The m9400t is chock-full of must-haves for the multimedia maven. The result is the multimedia PC you want, for around $1,000.	2.4-GHz Intel Core 2 Quad Q6600 processor; 3GB 800-MHz DDR2 SDRAM; 500GB, 7,200-rpm SATA hard drive; 512MB nVidia GeForce 9500 GS graphics card; HD DVD/Blu-ray combo drive; HP 2.1 speakers; Vista Home Premium.
Dell Studio Desktop $1,079 direct, $1,369 with 20-inch wide-screen monitor ●●●○○	• HDMI and DisplayPort • 802.11n wireless networking • Minimal crapware	• No Blu-ray • Pricier than competition • Only 30-day subscription to McAfee Internet Security • Awkward hard drive expansion	Wedged between the Inspiron line and the high-end XPS line, the Studio 540 is a jack of all trades, yet master of none. You can find less expensive multimedia desktops that offer you more features.	2.33-GHz Intel Core 2 Quad Q8200 processor; 2GB 800-MHz DDR2 SDRAM; 640GB, 7,200-rpm SATA hard drive; 256MB ATI Radeon HD 3650 graphics card; dual-layer DVD±RW drive; Dell A525 2.1 speakers; Vista Home Premium.
LAPTOPS				
Lenovo ThinkPad X301 $3,000 list ●●●●○	• Great battery life • Terrific resolution • An abundance of embedded wireless devices • Adds a DisplayPort • Centrino 2 parts • Environmentally friendly	• Outrageously expensive • Ultra-low-voltage processor is not speedy	The Lenovo ThinkPad X301 is the most impressive ultraportable in its class. Too bad only a high-paid executive can afford one.	1.4-GHz Intel Core 2 Duo U9400; 2GB DDR3 SDRAM; 64GB SSD hard drive; 32MB Intel 4500MHD graphics;13.1-inch, 1,440-by-900 display; Intel WiFi Link 5100; 3.3 lb (4 lb travel); 43-Wh lithium ion battery; Vista Business.
Gateway T-6836 $800 street ●●●○○	• Spacious hard drive • 4GB of system memory • Good performance	• Surprisingly heavy system weight • Video output limited to VGA	The T-6836 is a mainstream notebook that offers decent performance and features. However, there are other alternatives from Dell, HP, and Lenovo that offer more features (and flare) for around the same price.	2.0-GHz Intel Core 2 Duo 5750; 4GB DDR2 SDRAM; 250GB 5,400-rpm hard drive; 358MB Intel GMA X3100 integrated graphics; dual-layer DVD±RW drive; 802.11n; 49-Wh, lithium ion battery; Vista Home Premium (64-bit).
PRINTERS				
HP Photosmart C6380 All-in-One Printer $199.99 direct ●●●◐○	• High-quality photos • Prints directly from cameras, memory cards, and USB keys • Scans to USB key • Wired and Wi-Fi network support	• No fax modem • No automatic document feeder	Aimed primarily at home users, with a nod toward light-duty home-office use, the C6380 is most notable for its high-quality photo output.	AIO inkjet; one-pass color; 8-in-1 flash memory card reader; flatbed scanner; copier; cost per page: 1.9 cents (mono), 7.9 cents (color); 125-sheet input capacity; 8.2 by 17.8 by 16 inches (HWD); 16.4 pounds.
Ricoh GX3050SFN $800 street ●●●○○	• Laser-class speed • Standalone copying, faxing, and e-mail • Duplex printing and scanning	• Surprisingly heavy for the size • Although easily good enough for most business uses, output quality is less than ideal	A capable all-in-one for a small office or workgroup, this Ricoh unit prints, scans, copies, faxes, and even works as a standalone e-mail sender.	AIO inkjet; one-pass color; 10-in-1 flash memory card reader; flatbed scanner; copier; 6.9 by 17.1 by 19.3 inches (HWD); 52.2 pounds.
PROJECTORS				
BenQ MP771 $1,799 direct ●●●●○	• Short throw • High-quality image with good brightness and contrast ratio • Analog and digital connections	• Although sound quality is good, the volume is barely loud enough for even a small room	The MP771 offers both an impressively short throw and a high-quality image paired with useful touches that include digital and analog connections.	DLP engine; 4:3 aspect ratio; rated brightness, 3000 ANSI lumens; component, composite, S-Video, DVI-I, and D-Sub video inputs; 5.1 by 10.9 by 13.3 inches (HWD); 9 pounds.
DISPLAYS				
LG Flatron W2452T $499.95 list ●●◐○○	• Stylish cabinet • Good text readability	• Poor grayscale performance • Flimsy stand • Lacks A/V ports	The LG Flatron W2452T is an attractive 24-inch LCD monitor that does a good job of displaying small fonts, but there are better-performing models out there for around the same price.	24-inch LCD; 1,920-by-1,200 native resolution; analog VGA and DVI-D; 16:10 aspect ratio.
ViewSonic VX1962wm $299 list ●●●○○	• Excellent small-text reproduction • Good color performance	• Some tinting • Weak grayscale performance • Lacks multimedia connections	One of the few 19-inch widescreen displays to offer a 1,680-by-1,050-pixel resolution, this model is a good choice for users who want a high-res display but don't have the room for a larger monitor.	19-inch LCD; 1,680-by-1,050 native resolution; analog VGA and DVI-D inputs; 16:10 aspect ratio.



LENOVO THINKPAD T400

Cream-of-the-Crop Biz Laptop

Nothing epitomizes *classic* more than a ThinkPad. Lenovo is the one laptop maker that would be castigated for changing its flagship brand's color scheme, so no one will complain that ThinkPad T400 sticks with a basic black case design.

The differences are inside. With a widescreen LED display and a 56-Wh extended battery, the T400 still weighs in at a mere 5.2 pounds, so it's one of the lightest 14-inch business laptops. It packs in features: three USB ports, a FireWire port, a webcam, a fingerprint reader, a dual-layer DVD burner, a 7-in-1 ExpressCard media card reader, and Switchable Graphics. It covers the gamut of integrated 3G services from Verizon, AT&T, and Sprint. It delivers an untouchable typing experience—and it offers an amazing starting price. The T400, like many of its siblings, earns our Editors' Choice.

The T400's performance is propelled by its 2.8-GHz Intel Core 2 Duo T9600 processor, its 160 GB (7,200-rpm) hard drive, and Centrino 2's Switchable Graphics (which lets you choose between the Centrino integrated graphics—to boost battery life—and the ATI Mobility Radeon 3400 chipset). Switching made a huge difference on our MobileMark 2007 results: The T400 lasted 4 hours 12 minutes with the ATI chipset but yielded 5 hours 20 minutes using the integrated graphics. And you don't need to reboot to switch.

But the T400's excellent performance isn't limited to battery life; it also did superbly on Adobe Photoshop CS3 and the video-encoding tests. In fact, this system's scores edged out or came close to those of one of its main competitors, the HP EliteBook 6930p. With performance like that, combined with excellent battery life, light weight, phenomenal user experience, and an unexpectedly low price, the T400 just makes good business sense. —*Cisco Cheng*

Specs: 2.8-GHz Intel Core 2 Duo T9600; 2GB DDR3 SDRAM; 160GB, 7,200-rpm hard drive; ATI Mobility HD Radeon 3400 Series, 256MB; 14.1-inch, 1,440-by-900, widescreen LED display; Intel WiFi Link 5100; 5.2 pounds (6.1 pounds travel); three USB ports, one FireWire port; 56-Wh, 5.2-Ah lithium ion battery; Windows Vista Business.

Lenovo ThinkPad T400
$1,580 direct

●●●●◐

PC MAGAZINE EDITORS' CHOICE

PROS Dual graphics chipsets. Fastest Centrino 2 processor that's not branded Extreme. Fast, spinning hard drive. Wide range of wireless options. Excellent resolution on an LED screen. Priced well below past launches. Impressive battery life, especially with the integrated graphics set. Unmatchable user experience.

CONS BD-ROM option would be nice.

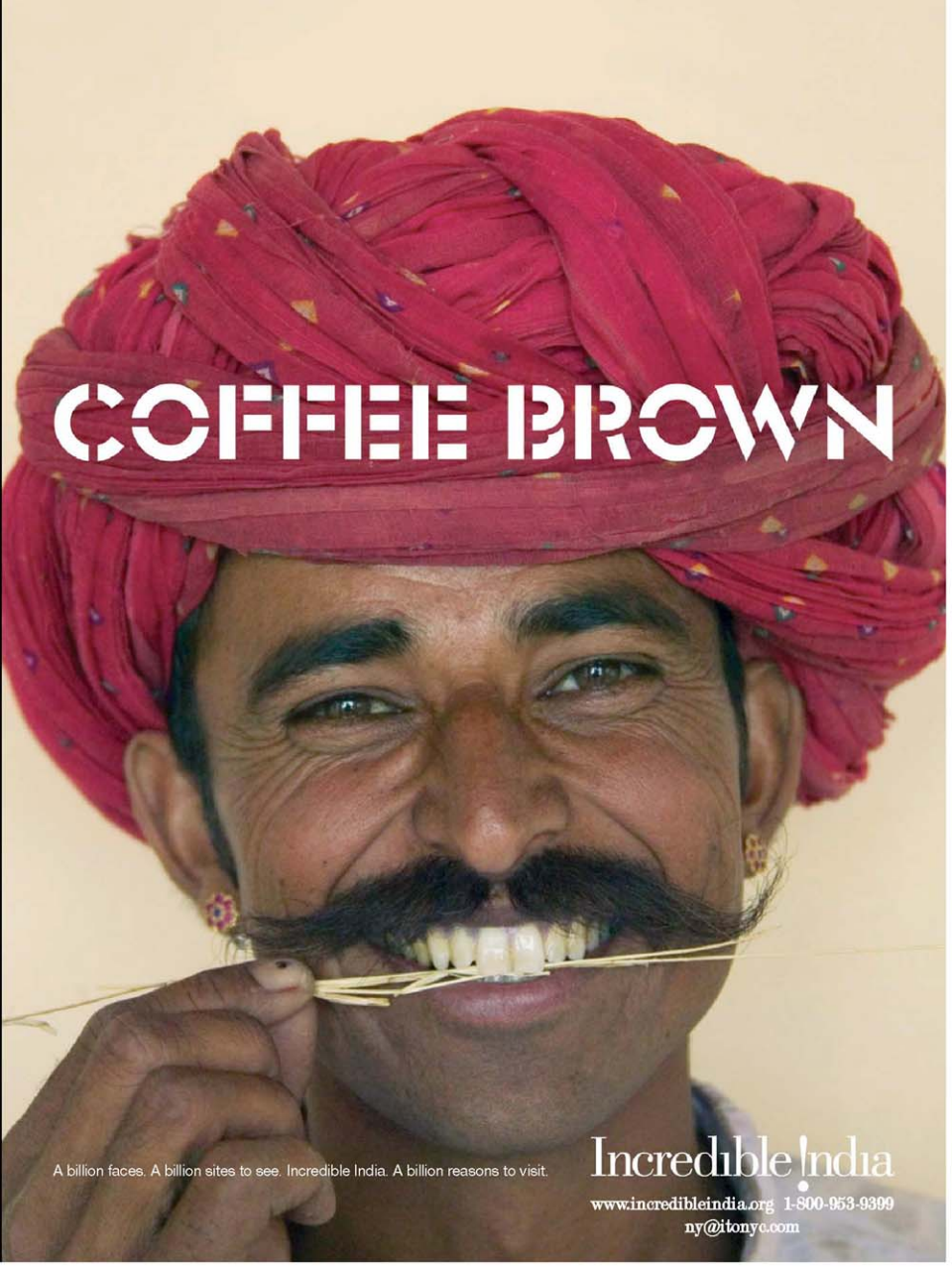
For more: go.pcmag.com/lenovot400

PERFORMANCE TESTS

▲ High scores are best.
▼ Low scores are best.
Bold type denotes first place.

	MOBILEMARK 2007 ▲ hr: min	SYSMARK 2007 PREVIEW OVERALL ▲	MULTIMEDIA ▼ WINDOWS MEDIA ENCODER min:sec	MULTIMEDIA ▼ PHOTOSHOP CS3 min:sec	GAMING (fps) ▲ CRYSIS 1,024 x 768*	GAMING (fps) ▲ WORLD IN CONFLICT 1,024 x 768*
Lenovo ThinkPad T400	**4:12**	146	**0:59**	**0:26**	**12.7**	**12**
Dell Vostro 1310	3:39	94	1:22	0:39	N/A	N/A
HP EliteBook 6930p	2:18	**149**	1:13	0:32	12.2	12
Toshiba Satellite Pro U400-S1001X	3:28	106	1:17	0:36	N/A	N/A

RED denotes Editors' Choice. N/A—Not applicable: The product could not complete the test, or the test was too limited.
*Anti-aliasing/anisotropic filtering was set to Off.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HP COLOR LASERJET CM2320NF MFP

AIO with Almost Everything

In most ways, this HP printer is one of the best color laser all-in-ones (AIOs) yet for the price. It offers good speed and high output quality, as well as almost any AIO function you can think of. Unfortunately, it stubs its toe by leaving out one fundamental feature: duplexing, the ability to print on both sides of the page. What you're left with is an AIO that's well worth considering but that's one duplexer short of a slam-dunk winner.

Clearly targeted for a small office or workgroup, the LaserJet prints, scans, and faxes over a network and can act as a standalone fax machine and color copier. In addition, it can send e-mail or scan to a PC on your network, automatically opening a new message with the PC's e-mail program and attaching the scanned document to the message.

Despite the lack of a duplexer, the paper handling should be adequate for most offices, with a standard capacity of 300 sheets. The flatbed scanner is limited to a maximum of letter size, but the automatic document feeder (ADF) can handle legal-size paper.

Text quality is a bit below par for a laser but definitely good enough for most business needs. Graphics output is superb, with no major flaws. Photo quality, similarly, is in the top tier for a color laser AIO. One annoyance we noted on our test was that all the paper came out with a slight curl. But overall, this printer is an attractive choice.—*M. David Stone*

HP Color LaserJet CM2320nf MFP
$699 direct
●●●●○

PROS Reasonably fast. High-quality graphic and photo output. A 50-page ADF. Standalone fax, copier, and e-mail sender.

CONS No duplexer option. Network scanning requires manual setup.

For more: go.pcmag.com/hpcm2320nf

WESTERN DIGITAL MY BOOK MIRROR EDITION

Double Protection

External drive backups are all about securing the data on your PC. Nothing exemplifies this more than the Western Digital My Book. The Mirror Edition links two identical 3.5-inch 1-terabyte hard drives together to give you 1TB of RAID 1 (mirrored) storage (good for over 200 DVD movies or roughly two hundred thousand digital photos), which will be protected from the failure of a single hard drive.

The My Book Mirror Edition is a squat 6.75-by-4-by-6-inch (HWD) black box with ventilation holes punched into three of its sides. On the back you'll find the power button, a jack for the power adapter, and a mini USB port. In front is a vertical line of blue LEDs forming the activity/capacity indicator. The system is marketed as a 2TB drive because there are physically two drives, each 1TB, but you get that total capacity only if you go into the included WD RAID Manager and reset the drives to RAID 0. The drive is a decent performer, especially considering that it copies everything twice. The My Book took 57 seconds to copy our standard 1.2GB test folder via Windows drag-and-drop and a pokey 3 hours 10 minutes via WD's Anywhere Backup utility. But that was just for the first backup; subsequent backups were almost instantaneous. Anywhere Backup isn't suited to full disaster-recovery backups, but the software will back up your data and media files.

The drive comes with WD Drive Manager, WD RAID Manager, and trial subscriptions to MioNet for online remote access and Memeo AutoSync for syncing folders between multiple PCs. And with GreenPower drives, this unit is quiet and energy efficient. Any digital media enthusiast or business owner definitely needs one of these.—*Joel Santo Domingo*

Western Digital My Book Mirror Edition
$399.99 list
●●●●○

PROS Capacious storage. Protected storage. Low power consumption. Quiet. Easy to replace internal hard drives.

CONS A little pricey on a dollar-per-GB basis. Install disc contains crapware. Capacity indicator requires software installation. Backup is data-oriented, not disaster-recovery-oriented.

For more: go.pcmag.com/wdmybookmirror

Dell recommends Windows Vista® Ultimate.

Windows Vista Ultimate

Monitor not included. Add a 24" monitor for $349.

THERE'S NO SUCH THING AS AN UNFAIR ADVANTAGE.

Introducing the new XPS 730x. When it's you against hordes of mythical nasties hell-bent on furious destruction, it helps to have the best weapons. We'd recommend a brand-new Intel® Core™ i7 processor (it's really fast) with factory overclocking* (makes it even faster), tri-channel DDR3 memory* (ditto), and upgrading to Windows Vista® Ultimate (increased RAM utilization available with 64-bit OS makes it – you guessed it – extremely fast). Throw in Dell's optional H_2C liquid cooling system and an Alienware® AlienFX® lighting system, and those odds start looking better and better. Just don't let the whole "humanity's only hope" thing go to your head, ace. Yours is here.

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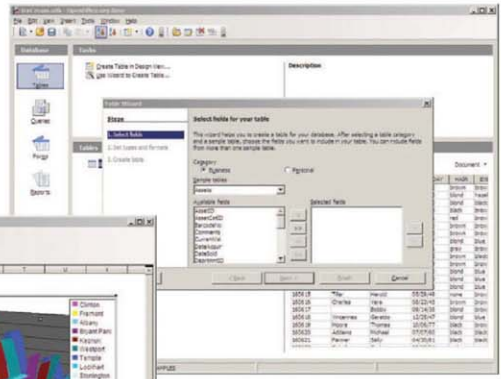
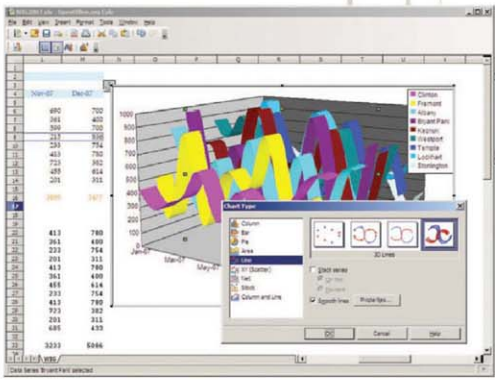


DEALING WITH DATA OpenOffice's database module makes SQL-compatible databases easy to manage. This wizard helps create a new table.



CHARTING A COURSE OpenOffice.org's charting has received major improvements since the early versions. It can't match the razzle-dazzle of Excel's latest charting, but it's flexible and does a good job.

OPENOFFICE.ORG 3.0

A Serious Rival to Microsoft Office

OpenOffice.org 3.0
Free
●●●◐○

PROS Free. Open-source. Feature-packed. Highly compatible with Office 2007 formats. Single interface for all apps.

CONS Interface is uninformative; makes little use of spacious monitors. Some features are unreliable. Not all Office features are supported.

For more: go.pcmag.com/openoffice3

OpenOffice.org 3.0, is a free, open-source replacement for Microsoft Office. It is also the first and only application suite that can be seriously considered a substitute for the massive power and flexibility of Microsoft's suite. OpenOffice.org used to look clunky and work slowly, but V 3.0 is sleek and fast, retaining the essential look and feel of Office 2003 instead of imitating the new ribbon interface of Office 2007. That's a plus for many users who want as much continuity as possible when switching to a new application. OpenOffice.org doesn't include all of Office's features, but it does add some conveniences that Office can't provide, such as built-in PDF export and a single interface for opening and editing word-processing documents, HTML files, worksheets, presentations, and drawings. For government offices and corporations that don't want to depend on Microsoft (and don't want to continue paying Microsoft's prices), OpenOffice.org 3.0 deserves an attentive look.

The suite has six basic components: Writer, a word processor and HTML editor; Calc, a spreadsheet; Draw, a graphics editor; Impress, a presentations program; Math, an equation editor; and Base, a database application. I was impressed with the way the interface hews closely to the familiar Microsoft Office 2003 standard and even improves on the placement of some menu items. However, I was less fond of the word processor's limited view options. In OpenOffice.org's spreadsheet, I missed the graphic flexibility of Excel's conditional formatting, but I managed well enough with the low-frills, 20th-century conditional formatting features.

Overall, I found performance impressively fast, on a par with that of Microsoft Office but with some limitations. File loading and saving, in all parts of the application, was almost instantaneous. OpenOffice is also the only major application suite that runs on Windows, Mac OS X, and Linux with almost exactly the same feature set on all platforms. Furthermore, it works astonishingly well with your existing Office docs. Although it still has rough edges, OpenOffice's impressive feature set, a generally lucid interface, and pure open-source credentials are reason enough to give it a try—especially considering that it's absolutely free.—*Edward Mendelson*

Give your iPhone or BlackBerry® more than double the juice.

Finally, 1800 mAh in a pocket-sized backup battery!

by Richard Thalheimer

Thinking of getting a backup battery for your iPhone or iPod?
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The dual-port USB car charger will charge the RichardSolo 1800 and power another device. The RichardSolo 1800 also features a built-in laser pointer, and super bright LED flashlight, with lock button to prevent accidental use.

For iPhone, sturdy support brace holds iPhone and RichardSolo 1800 securely together. And, this is the only snap-on battery available with an actual latching mechanism for iPhone, to keep the RichardSolo 1800 and iPhone firmly attached.

Polymerized lithium-ion battery takes hundreds and hundreds of charges. Three LED lights indicate charge status. RS001 certified for iPhone 2G/3G, and all iPod models except shuffle. RS007 works with most BlackBerry models except 8830 World Edition, and most phones with mini-USB charging port.

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Made for iPod Works with iPhone

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I had read a number of glowing reviews about RichardSolo quality, and am thrilled to discover your support is top notch. Thanks again for the fantastic customer care — you've certainly gained my loyalty. ***— D.G.***

To have you and your company exhibit such exceptional service is unbelievably refreshing. Thank you, thank you, thank you!!! I will be highly recommending your company to anyone I encounter. ***— P.S.***

Dear Richard and Team: This is what I call great customer support. I wish more companies would figure this out these days. Thank you so much. ***— D.C.***

You have provided me one of the best services I have ever encountered on any on-line/telephone shopping. ***— T.K.***

Richard, thank you. That was the fastest response I have ever received. Great product by the way. Appreciate the assistance. ***— M.W.***

This is absolutely the best customer service experience I have had in a long time. ***— L.L.***

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— MobilityToday.com

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— BuyMeAniPhone.com

"If you own an iPhone or recent iPod, this is the backup battery to buy!"
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PROS Intuitive. Simplifies small-network management for non-techies.

CONS Encryption feature buggy. No Linux support.

For more: go.pcmag.com/networkmagicpro5

Home and small-office networks have spread like wildfire. But users attempting to configure, secure, and maintain those networks may too often feel as if they're battling a blaze in the Santa Ana wind. That's where Network Magic comes in. Though it doesn't yet succeed in its toughest challenge, making security effortless, it's still a valuable tool for the home or business user who isn't a tech expert but needs to manage a network of up to eight computers—along with attached devices like printers and NAS appliances.

If you are already a Network Magic user, the first thing you'll notice in this version is the improved control dashboard. The graphical interface displays a map of your network with pictorial representations of all the connected devices, which the utility finds automatically. You can point and click to connect devices, control Internet access, and track online activity. Sharing connections, files, and devices such as printers is is just as easy.

Every time you make a change—or more important, someone else does—a pop-up notifies you of the change, so you know what's happening at all times. Network Magic even finds and reports wireless devices that aren't broadcasting an SSID, so you'll know if someone is trying to connect clandestinely. Then you can isolate any unknown machines and mark them as intruders. Having this level of visibility is as useful as installing security software.

Unfortunately, the product's most serious failing is in its most important new capability: the Change Wireless Protection (CWP) feature, through which Network Magic can enable WEP or WPA encryption on supported routers. In testing, CWP failed to work properly with my supposedly supported business router, the Linksys WRVS4400N. As a result of the bug my testing uncovered, Cisco has, for the moment, taken business routers off the list of devices supported by CWP. Cisco's consumer routers, however, will still be supported. Although this is bad news for businesses, home users (especially networking novices) can still benefit greatly from Network Magic.—*Mario Morejon*

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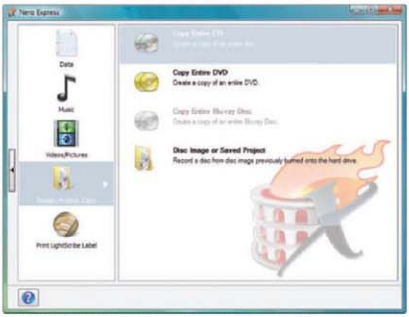


EXPRESS AUTHORING Nero Express is the simplified version of Burning ROM, listing all of your burning options, such as data, music, video, label, and image/project/copy.

NERO VISION Nero lets you clip transitions, effects, and titles to your digital movies.

NERO 9

Good (but Not Perfect) Media Creation

Nero 9
Download, $79.99 direct; CD, $99.99
●●●◐○

PROS Simple, well-designed interface. Blu-ray burning included. TV-viewing software provides DVR features. Data-recovery tool. Gives good feedback about progress of disc burning. Burned DVD faster than Roxio.

CONS Setup takes too long. Occasional crashes. Blu-ray authoring is problematic.

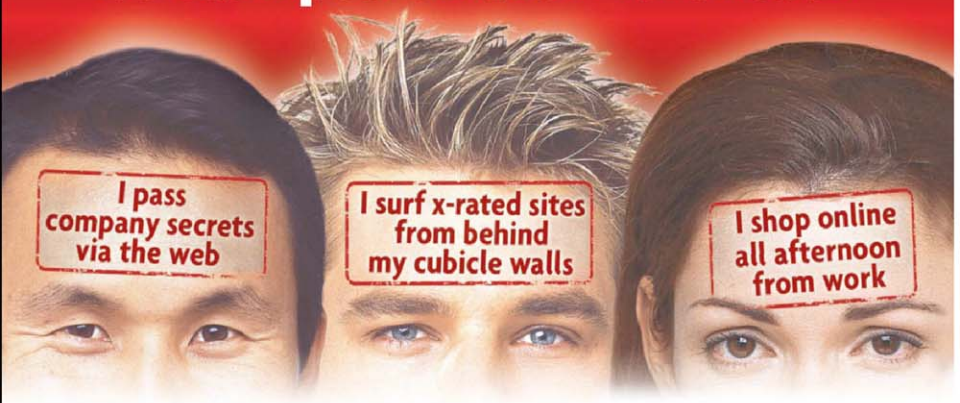
For more: go.pcmag.com/nero9

Every fall since 1995, Nero and archrival Roxio have come out with new versions of their media creation suites. Since these suites made their debuts, many of their functions have been incorporated into operating systems or are available as freeware. Nero 9 is the better of the two titans this year, but the question still remains: Is either of these monster suites still worth its price?

One capability in Nero 9 that you can't get in Windows or Mac OS X is Blu-ray authoring and burning, although I did encounter some problems during testing. You can also burn ISO disc images, and you get data recovery along with the Nero Live TV-watching software. Nero has also added some subtle changes to its interface with this version, including the ability to play, rip, burn, copy, and back up content right from the main window, without launching another of the suite's applications. Vision, the suite's video-editing component, has a simpler, more workflow-oriented interface, which aggregates the whole process of adding videos, transitions, effects, and text overlays with the process of authoring and burning a disc. For DVD burning, there are several ways to go about this, and Nero's burn time for our test image was 18 minutes, far better than Roxio's 35. Nero has also added Gracenote support for finding song and artist information for music files, along with a Music Grabber feature to capture soundtracks from videos and add them to your MP3 library. Some downsides to Nero are that it crashed a couple of times during testing and that the setup is cumbersome and time-consuming.

The Nero suite also includes PhotoSnap and PhotoSnap Viewer, the latter of which duplicates existing viewers in Windows and Mac. Its Edit button takes you to the full Nero PhotoSnap, which lets you do things like crop images and fix red-eye and lens distortion. A couple of nice extras are the hot pixel fixer and the JPEG Artifact Remover. And the RescueAgent file recovery tool can back up either to local storage or to Nero's online service (for an extra fee). So while Nero wins over Roxio this year, I did not award either an Editors' Choice, because neither is as polished as it should be for the money.—*Neil Rubenking*

With Spector 360, it might as well be stamped on their forehead!



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	PROS	CONS	BOTTOM LINE
MOBILE APPS			
Facebook for the iPhone Free ●●●○○	• Free • Delivers basic Facebook functionality • No ads	• No search function to find new friends • No News Feed or Applications • Doesn't use iPhone's GPS functions	Facebook's iPhone app delivers a streamlined version of the immensely popular social-networking service, including status updates and basic chat, mail, and photo functions. But it could stand to be a little more robust.
Pandora (for iPhone) Free ●●●●◐	• Personalized stream of music on your iPhone, free • Attractive, uncluttered interface • Retains Web version's thumbs-up, thumbs-down ratings on songs	• No sharing features • Can't browse stations by genre • Some performance issues	Pandora's version of its user-customizable Internet music service for the iPhone keeps its simple charms and clean interface while eschewing a few of its more advanced features.
Sportacular (for iPhone) Free ●●●◐○	• Updates scores on most major sports games every 30 seconds • Shows play-by-play, pitch counts for baseball	• No NFL play-by-play • Limited college football reporting • NASCAR coverage not included	The free and frequently updated Sportacular helps you keep track of the latest sports scores or fantasy stats on your iPhone.
Yahoo! oneConnect (for iPhone) Free ●●◐○○	• Free • Officially brings Yahoo! Internet Messenger to the iPhone • Centralized contact list for various social networks	• Slow import for large Yahoo! Mail contact lists • Confusing IM implementation • Limited social networking	With the free oneConnect, Yahoo! attempts to offer the ultimate social-networking app for the iPhone. But the interface is confusing and the feature set is too limited.
MEDIA CREATION SUITES			
Roxio Creator 2009 $99.99 direct ●●●○○	• One-stop shop for all types of media creation and burning • Accepts AVCHD camcorder movies • Burns Blu-ray video discs and high-def AVCHD on DVDs • Thorough help system	• Except for the main welcome screen, interface looks long in the tooth • Many bugs and crashes encountered in testing • Slower DVD burning and CD ripping than with the competition	Roxio's latest suite adds a prettier start interface and a couple of new goodies like audiobook support and a Beatmatch feature, but the included apps are still too complex and generated plenty of errors during testing.
MEDIA PLAYERS			
Simplify Media Free ●●●●○	• Streams music from your computer to your iPhone • Lets you share streams with up to 30 friends • Displays artist bios, song lyrics	• Buffering delays •Requires restart when iPhone switches back and forth between EDGE and 3G networks	Simplify Media may not be quite perfect, but it offers an excellent way to share or listen to music streamed to your iPhone from your computer. It won't stream secure AAC files to iPhone.
UTILITIES			
GreenPrint World World edition, free; Home Premium, $29 direct; Enterprise, $70 (per system) ●●●◐○	• Needs no printer setup • Clean, functional interface • Includes PDF generator. Reports savings	• No switch from color to black-and-white • Preview generator tends to lag • Free version displays ads	All three versions of the GreenPrint paper-conservation software integrate seamlessly with the Windows print dialog to give you a practical way to save paper, ink, money, and the environment.
Reimage Three repairs, $79; other plans available ●●◐○○	• Simple to use • Automated • Inexpensive	• May require creation of an XP boot disc • Left one test PC running slow; failed entirely on another	Reimage has potential as an automated PC repair tool, but judging by our tests it doesn't yet perform well enough to earn our recommendation.
ONLINE MEDIA STORAGE			
Zune Marketplace (October 2008) Software, free; unlimited downloads, $14.99 monthly ●●●○○	• Slick album graphics and MixView • Now sells TV shows in addition to music • Can download music wirelessly with Zune players • Works on all Zunes sold to date	• Perplexing point system for song and video purchases • No movies, rentals, games, or apps available • Significantly smaller library than competition offers	Slowly and steadily, Microsoft has improved the Zune Marketplace to the point where it's a slick, viable alternative to the Apple iTunes juggernaut—but only for music lovers, and only if you can get past the point system.

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T-MOBILE G1

A Solid First Try for Google Android

The first-ever Google Android smartphone is a respectable initial effort that, given an open development platform, will grow with time. It's missing a bunch of key features, such as a decent media player and support for corporate e-mail. But the G1, manufactured by HTC, is a quality phone with few bugs. I'm confident that more features are on the way.

The 5.6-ounce G1 looks like a grown-up Sidekick. It has a big 3.2-inch, 320-by-480-pixel touch screen that's bright and responsive. Volume and camera controls are on the sides of the handset, and the 3-megapixel camera is on the back. Slide the screen up to reveal a comfortable little QWERTY keyboard. You get about 60MB of available space for apps and data, as well as a slot for a microSD memory card.

A quad-band EDGE, dual-band HSDPA phone (1,700/2,100), the G1 works on T-Mobile's 2G and 3G networks in the U.S. and on high-speed networks overseas. We achieved 600-to-700-kilobit-per-second speeds in the G1's browser on the 3G network, which is fairly typical for a 3G phone. We also connected to our WPA2-secured 802.11g wireless network without a problem.

Calls on the G1 sound terrific, at least to the user; the person on the other end may hear background noise. E-mail reads well, but attachment support is poor. As you might expect from a Google phone, the G1 has one of the best Web browsers around. There are holes in the phone's media capabilities: There's no video player or video camera, for example. Nonetheless, the G1 is a phone with a bright future that's worth checking out.—*Sascha Segan*

T-Mobile G1 (Google Android Phone)
Price: $179.99 with two-year service contract
●●●◐○

PROS First Google Android phone. Connects to Google services. Very good Web browser. Highly configurable. Solid call quality.

CONS Poor music and video options. Subpar document support. No Flash support in browser. No Microsoft Exchange e-mail connectivity. Nonstandard headphone jack.

For more: go.pcmag.com/tmobileg1

BLACKBERRY PEARL FLIP 8220 (T-MOBILE)

Don't Flip Yet—This BlackBerry's Still in Beta

A rare misstep for RIM, the BlackBerry Pearl Flip 8220 combines interesting new hardware with software that's a bit underbaked. Hold off on buying a Flip until there are software revisions to fix the many bugs I encountered on my early review unit.

I question the reason for the 8220's very existence, but RIM execs insist that there are a lot of people out there who won't buy a phone that doesn't flip. So the first clamshell BlackBerry device was born. When it's closed, the Flip is about the size of a BlackBerry Pearl 8120, with a handsome black face and deep red body. There's a big external screen and a camera on the front, and various buttons and ports on the sides (including the useful BlackBerry mute button). The microSD card slot on the side even accepted the latest 16GB SanDisk card without a problem.

The crisp 2.3-inch, 320-by-240-pixel screen and a hybrid SureType keyboard were both a pleasure to use. But in terms of software, my 8220 was so buggy that it felt as if it had been released too soon. On the first call I made from a Bluetooth headset after a cold reboot, when I flipped the phone closed, a garbage message briefly appeared on the external display. When I played music, closed the flip, and hit the up and down volume buttons quickly in sequence, the external display went wacky. And at one point, the external screen clock just vanished—I could bring it back only with a cold reboot. But the biggest problem, by far, was with the Web browser, which struggled with JavaScript and loaded pages at a painfully slow pace. Wi-Fi wasn't much better. Overall, RIM has built some solid hardware here. But I can't recommend a phone that's this buggy until the kinks have been worked out.—*SS*

BlackBerry Pearl Flip 8220 (T-Mobile)
$349.99; $149.99 with two-year service contract
●●◐○○

PROS Spacious, comfortable keyboard. Excellent camera. HTML e-mail. Six instant-messaging clients. Includes DataViz Documents To Go for editing Office documents. Music sounds good.

CONS Very buggy. Web browser has serious issues.

For more: go.pcmag.com/pearlflip

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> ***John S. Hansmann**, MIS, Time Warner Cable Media Sales*

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CANON POWERSHOT A1000 IS

A Point-and-Shoot Winner for Beginners

Canon PowerShot A1000 IS
$199 list
●●●●○

PROS Excellent image quality for the price. Handy "Easy Mode" prevents you from accidentally changing settings. Fast recycle/boot-up times with little shutter lag.

CONS Bulky. Viewfinder clips part of your images. High amounts of noise even at low ISO settings.

For more: go.pcmag.com/powershota1000

At $199, the A1000 IS is the least expensive 10-megapixel camera Canon has released this year. Despite its low price, it's an excellent pick for those who prefer to shoot using auto settings. In Easy Mode, the camera delivers crisp images. Make no mistake, however: Images from this camera aren't on a par with those from higher-end Canon models. But the A1000 IS's image quality edges out comparable (and pricier) cameras, such as the Casio Exilim z250.

Though it looks a bit larger, at 2.5 by 3.8 by 1.2 inches (HWD), the A1000 IS is actually slimmer than its 8MP predecessor, the PowerShot A580—and it's a bit sleeker, too. The A1000 IS features a 4X optical zoom lens and a focal length of 6.2mm to 24.8mm. This camera also has some new buttons (one that combines the Playback/Shoot button and another that serves as a dedicated face detection button) and color options (blue, brown, gray, and purple). The 2.5-inch LCD has 115,000 pixels, about half the number you'd usually find on a display this size. Still, the screen's brightness and contrast are decent. You also get 17 preset shooting modes.

In testing, the A1000 IS showed quick boot and recycle times. I was impressed by how little noise and distortion there was in its photos, except those taken at higher ISO settings—if you stick with the camera's automatic settings, you won't have a problem. Image stabilization and face detection work well, and the A1000 IS's video is fluid and clear, recording at a resolution of 640 by 480 at 30 frames per second.

In short, this entry-level camera excels at the basics: "Easy Mode" shooting, sharp images, and speedy performance, all at a very good price. With all this value, it easily earns our Editors' Choice for best low-cost point-and-shoot model.—*PJ Jacobowitz*

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RIM BLACKBERRY BOLD 9000 (AT&T)

Bold in the USA

If the Bold works, don't fix it. AT&T has mostly done well by following that advice for its version of RIM's BlackBerry Bold 9000, which is very similar to the Bold model for Canada's Rogers Wireless. This is an excellent executive smartphone with a gorgeous screen, reliable e-mail, MS Office document editing, and a terrific media player. But we wish AT&T had worked on the troubled Web browser, which still struggles to load pages that contain JavaScript.

At 4.5 by 2.6 by 0.6 inches (HWD), the 4.8-ounce device feels solid in your hand. Although the keys are slippery, the keyboard is roomier than others and easy to use. This phone has the best-looking screen (320 by 480 pixels) I've ever seen on a mobile device; I just wish the display were a bit larger (it's 2.6 inches, compared with the iPhone's 3.5).

The Bold features a 624-MHz Marvell Tavor CPU, which is a little bit faster than the iPhone's processor. BlackBerry handhelds are typically very responsive, and I found the Bold to be snappy except for its Web browser, which was often sluggish. This phone did not drop calls during testing, and it transitioned between 2G and 3G networks seamlessly. But our Bold had trouble connecting calls in areas with weak 2G signal. Its battery life—4 hours 28 minutes—is about the same as that of other 3G smartphones but will disappoint BlackBerry loyalists. The iPhone has a better Web browser, but the decision really comes down to what you prefer—a keyboard or a touch screen.—*Sascha Segan and PJ Jacobowitz*

RIM BlackBerry Bold 9000 (AT&T)
$549.99 direct;
$299.99 and up with contract
●●●●○

PROS Luxurious feel. Beautiful ultra-high-resolution screen. Integrated Office document editor. Solid camera.

CONS Web browser shows some rough edges. No mainstream IM client.

For more: go.pcmag.com/bold9000.

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R-Tools offers world-class recovery and protection solutions to all users, from the most inexperienced to professional support staff

Can you afford the time and expense to send your computer to a professional data recovery service? Few of us can conceive of going without data access for days, let alone the extended period it may take to get your hard drive back.

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PIONEER XMP3

To-Go Satellite Radio

Pioneer's XMp3 is the sequel to the Inno, XM Radio's laudable stab at integrating its satellite radio service into an MP3-player-size device. It was a terrific concept, and now Pioneer and XM have upped the ante with the XMp3, which is smaller, lighter, and features a microSD slot and new recording features. As its name suggests, the player also handles MP3s (and unprotected WMA files), but the screen has no video or photo capabilities—other than displaying station graphics. The XMp3 isn't without its flaws—spotty reception (especially indoors) and a jumpy control wheel, for example—but it's worth considering if you're into satellite radio.

Looking like a cell phone with a stubby, old-school antenna, the 3.1-ounce XMp3 measures 3.6 by 2 by 0.6 inches (HWD). Its 2.2-inch screen displays still graphics only. The player comes with mediocre earbuds, a dock with an attaching antenna and a line-out-to-RCA cable, a remote control that's larger than the player itself, and a USB cable for PC file transfers. You get only 2GB of integrated storage, but there's a microSD slot on the top panel.

The controls and user interface are simple and intuitive, and the recording features are top-notch. The player can record up to five channels simultaneously and has a built-in DVR-like function to pause a live radio program and replay up to 30 minutes of it. One drawback is that you can't move recorded content from the player to your PC. Another shortcoming is that indoor reception is very poor unless you use the dock and external antenna. But for outdoor use it's an ideal choice for XM subscribers—albeit an expensive one.—*Tim Gideon*

Pioneer XMp3
$279.99 list
●●●◐○

PROS Records up to five satellite radio stations simultaneously. Pauses live radio. Features a timed-record option for favorite programs. Also plays MP3s and WMAs.

CONS Has trouble receiving a signal indoors unless the player is docked. Only 2GB of storage. Can't move recorded content onto PC.

For more: go.pcmag.com/xmp3

ALTEC LANSING EXPRESSIONIST BASS FX3022

Solid, Space-Saving Sound

Altec Lansing's latest audio product line has a definite industrial vibe, the best example of which is the Expressionist Bass FX3022. This system looks more like a set of futuristic kitchen appliances than PC speakers. While the FX3022 might sound like a 2.1-channel set, it's short the big, boxy subwoofer that would take up space under your desk. Instead, each speaker has its own built-in independent, downward-firing subwoofer. You won't get a ton of booming bass, but the sound is fantastic at moderate volumes. For a small pair of PC speakers, this set delivers crisp audio and quality low-end sound.

Each cylindrical speaker measures 10 by 5.3 by 5.3 inches (HWD), wider at the base than at the top. The speakers connect to one another via a thick, hardwired cable; the right-hand speaker is home to 3.5mm audio and aux inputs and the power adapter connection. There is no remote control, so the setup is as simple as can be. At lower volumes, these speakers produce excellent sound, but the bass begins to distort at a party-level volume. Minor drawbacks are the lack of a remote control and of an extra cable for the auxiliary input; the lack of a dedicated bass-level control is a bit more serious. (If there were a knob to lower the bass volume, the distortion at high volumes could be limited—or avoided altogether.)

Overall, this speaker set is not our favorite for an affordable 2.1 system, but it meets a need in cramped office spaces and offers good enough sound for most situations.—*TG*

Altec Lansing Expressionist Bass FX3022
$129.95 direct
●●●◐○

PROS Cool industrial design. Crisp audio performance. Built-in subwoofers save space.

CONS Distorts at high volumes. Lacks bass-level control. No remote control.

For more: go.pcmag.com/bassfx3022

Vizio SV420XVT
$1,399.99 list
●●●●○

PROS Affordable price for cutting-edge technology. Very good picture quality once calibrated. Four HDMI ports. Bundled HDMI cable.

CONS Out-of-box color is slightly off and requires manual calibration. Occasional visual artifacts from 120-Hz technology.

For more: go.pcmag.com/sv420xvt

VIZIO SV420XVT

Cheap Yet High-Tech HDTV

It is now common knowledge in the HDTV world that LCDs with fast 120-Hz refresh rates produce a better picture than those with the standard 60 Hz. Problem is, you usually end up paying a lot more for that better picture. But Vizio is bringing 120 Hz to the masses with the 42-inch SV420XVT, one of the most affordable LCDs of its kind on the market. You also get stylish modern design and a bundled HDMI cable. Aside from one notable flaw in the 120-Hz technology, this HDTV is otherwise a winner.

A glossy black bezel surrounds the set's impressively thin antireflective screen (1.3 inches). With the stand attached, the set measures 27.2 by 39.4 by 9.5 inches (HWD) and weighs 46.3 pounds. The bundled remote, which has a narrow baton-style design, can control a wide variety of VCRs, DVRs, cable and satellite set-top boxes, audio amplifiers, and additional televisions. This LCD's selection of HD video connections is similar to those of other premium HDTVs, but the location of some of its ports is a bit inconvenient for some home-theater configurations.

The 42-inch screen provides full 1080p resolution (1,920-by-1,080), and I was pleased that the VGA, HDMI, and component video ports were compatible with 1080p60 video signals. The set's HDMI ports also support 1080p24 input from compatible Blu-ray players. At its highest resolution settings, 1080i/p for increased detail and clarity, the set had no problems with overscan. However, I found the TV's out-of-the-box picture quality to be slightly off. Manually calibrating the TV's color temperature and other video menu settings resolved these problems.

The 120-Hz LCD technology enhanced the detail and clarity of the resulting picture, but jagged edges and related interlaced video artifacts remained visible. Also, in the Blu-ray version of *Iron Man*, several scenes caused the TV's interpolation function to fail, resulting in some obvious, distracting image corruption. Finally, if you fast-forward on a DVR, you'll find that the set will occasionally hiccup as the DVR returns to normal playback speed.

The SV420XVT represents a solid improvement in HD picture quality for Vizio, even though the TV's full potential is realized only after professional video calibration. Overall, this HDTV offers a definite bargain for cutting-edge LCD technology.—*Robert Heron*

PORTS INCLUDED

CableCARD	0
Component	2
Composite	3
DVI	0
Ethernet	0
FireWire	0
HDMI	4
RF	1
RS-232C	0
S-Video	1
USB	0
VGA	1

Quick Looks

Visit pcmag.com for the full reviews of these and other consumer electronics products.

RED indicates Editors' Choice.	PROS	CONS	BOTTOM LINE	SPECS
SMARTPHONES				
Motorola Krave ZN4 $349.99; $149.99 and up with Verizon contract ●●●◐○	• Beautiful design with high-resolution touch screen and "floating" earpiece • Epic battery life • Features Verizon's V Cast Mobile TV	• Other than the mobile TV, the software is a big yawn • Easy to start TV accidentally when the phone's flip is closed • Inflexible camera	Verizon's Motorola Krave ZN4 is a gorgeous little TV phone that looks like a *Star Trek* communicator. But with more exciting software, it could be so much more.	CDMA; 1xRTT, EV-DO Rev 0 data networks; 2.2-inch, 240-by-320 TFT LCD; 2MP camera; 4.1 by 2 by 0.8 inches (HWD), 4.6 ounces.
Samsung Knack SCH-U310 $159.99; $39.99 and up with Verizon contract ●●●●○	• Extremely simple to use • Solid reception and sound quality • Loud	• No Bluetooth	The Samsung Knack SCH-U310 is an easy-to-use phone for those who simply want to make calls.	CDMA; 2.2-inch, 176-by-220 LCD; 3.8 by 2.0 by 0.7 inches (HWD), 3.6 ounces.
GPS				
Navigon 2200T GPS Navigator $229 list ●●●●○	• Small and thin • Text-to-speech conversion • Multisegment routing • Handy features including Reality View Pro and Lane Assistant Pro	• Small POI (points-of-interest) database • Relatively limited POI search capabilities • Includes maps only for the continental U.S.	If you can live with a 3.5-inch screen, the Navigon 2200T, with its free lifetime traffic update subscription, is an excellent GPS bargain.	3.5-inch, 320-by-240-pixel screen; accepts SD and MMC flash memory; preloaded maps of continental U.S.; 2.9 by 3.8 by 0.7 inches (HWD); 4.4 ounces.
HDTV				
Toshiba 42XV540U $1,599.99 list ●●●◐○	• Excellent picture detail with HD video sources • Wide selection of A/V ports • Includes swivel base stand	• Lackluster picture contrast • Greens are oversaturated	This Toshiba HDTV delivers a detailed HD picture, but its mediocre picture contrast makes it less impressive when viewed in a dimly lit environment.	1080i; 1,920-by-1,080-pixel screen resolution; four HDMI ports, two component video ports, VGA and RF inputs; 27.3 by 39.8 by 12.1 inches (HWD); 48.4 pounds.
LG 50PG60 $2,699.95 list ●●●◐○	• Excellent detail with HD sources • Comprehensive picture controls • Attractive design • Swivel-base stand	• THX picture preset could be better optimized • Weak picture contrast compared with similar models	This LG 1080p plasma HDTV delivers a detailed high-definition picture, but its color and contrast lag behind the competition.	1080i; 1,920-by-1,080-pixel screen resolution; four HDMI ports, two component video ports, USB port; 33.4 by 48.7 by 14.3 inches (HWD), 96.4 pounds.
HD PLAYERS				
Sony BDP-S350 $299.99 direct ●●●●○	• Excellent Blu-ray and very good DVD upconversion image quality • Automatic firmware update notification • Laudable energy efficiency	• Lacks 1080p24 upconversion with DVD video • Faster start-up option increases power consumption • Limited multimedia features, such as JPEG and MP3 playback	A fast, solid performer, Sony's new entry-level BDP-S350 Blu-ray player delivers a terrific viewing experience.	1080i support; S-Video, composite, component, HDMI outputs; optical (Toslink), coaxial, HDMI, stereo RCA audio; HD DVD, Blu-ray, CD audio, CD playback; 2.4 by 16.9 by 8.8 inches (HWD).
MEDIA EXTENDERS				
Nero LiquidTV | TiVo PC $199.99 list ●●●○○	• Adds excellent TiVo interface and features to your PC • Complete hardware/software package includes TiVo remote and IR blaster • One year TiVo service included	• No premium channels through included tuner without a set-top box • Only one set-top box supported, and setup requires wiring • Requires a lot of PC horsepower	Nero's LiquidTV brings the top-notch TiVo interface and all its talents to your PC. It's not a replacement for a traditional TiVo DVR, it's a solid attempt at TV-PC convergence.	NTSC and ATSC support; remote and IR blaster.
Slingbox PRO-HD $299 list ●●●●○	• Streams HD-quality video over a home network and near-HD-quality content over the Internet • Can pause and resume live TV • New program guide is a welcome addition	• Program guide and Setup Assistant contain a few rough edges • Still no Wi-Fi, DVR capability, or HDMI input • Ties up the television the device is attached to	The Slingbox PRO-HD is one of the best-performing, easiest-to-use media extenders out there. It's a snap to set up, and it works exactly as advertised.	1080i support; component video, composite video, and Ethernet inputs; 2.4 by 13.3 by 5.6 inches (HWD); 4 pounds.
DIGITAL CAMERAS				
Fujifilm FinePix Z200fd $299 list ●●○○○	• Attractive • A bevy of features • Wireless capabilities	• Priced on the high side • Images are not as sharp as those from the competition • Significant color fringing • Wireless uses an infrared signal rather than Bluetooth or Wi-Fi	Pictures from the FinePix Z200fd point-and-shoot camera are a lot less sharp than those from the competition and display color fringing.	10.2MP resolution; 5X optical zoom; 2.7-inch LCD; 20MB onboard memory; accepts SD, SDHC, and xD-Picture Card flash memory; 2.3 by 3.8 by 0.8 inches (HWD); 5.3 ounces.
DIGITAL CAMCORDER				
RCA Small Wonder EZ205 $99.99 list ●●◐○○	• Inexpensive • Expandable memory • Flip-out LCD display adds an extra shooting angle	• Poor image and sound recording quality • Bulky • Small, dull LCD • Requires disposable batteries	The Small Wonder digital camcorder is a solid choice for YouTube filmmakers who can settle for so-so video capture at a reasonable price. But its design leaves a lot to be desired.	Digital image stabilization; 2X optical zoom; 2-hour battery life; 1.5-inch LCD; supports Secure Digital flash memory; 1.49 by 5.5 by 7.48 inches (HWD); 5.3 ounces.

Moneual™ recommends Windows Vista™ Home Premium Microsoft intel Core 2 Quad

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JOHN C. DVORAK

A Windows Retrospective

Did you realize you missed the 25th anniversary of Microsoft Windows? The product was officially announced on November 10, 1983. A lot has changed since then, but you have to be struck by the fact that the OS is still around.

Windows, which began life as a product concept called Interface Manager, stemmed from the announcement of VisiON by one of the dominant software companies of the 1980s era, VisiCorp. VisiCorp invented VisiCalc, which was the original spreadsheet for the IBM PC.

At the 1982 Comdex, VisiCorp showed VisiON as a radically new user interface and made it look as if the company was going into the operating-system business. Microsoft (aka Bill Gates) freaked, since it owned the desktop OS space.

What to do? Well, one thing you might want to do is announce something similar, so when the next Comdex rolled around in 1983, Microsoft did just that. And then the story begins to get weird.

A month before the Microsoft announcement, VisiON shipped and went nowhere. Microsoft must have noticed this, as it coincided with the GUI-centric Apple Lisa in 1983, which sold zilch computers. At the same time, the Xerox Star, the progenitor of the entire GUI computing concept, wasn't setting the world on fire, either.

I've always been convinced that Microsoft would have dropped the whole Windows idea completely after these failures. It was Steve Jobs who kept the hope alive. Once his engineers redesigned the Lisa as the Macintosh in 1984 and got a huge buzz (and managed to keep the Mac division the center of attention), Microsoft began to take the GUI seriously.

Meanwhile, other players were jumping into the game and putting even more pressure on Microsoft. In July of 1985, the GEM OS appeared. This code from Digital Research, a company screwed over by Microsoft in many ways, would evolve into a solid mouse-centric OS that gathered some steam before Microsoft headed it off. GEM eventually gravitated to the Atari PC and lost its foothold in the business world.

A few months later, Workbench, the jazzy Amiga GUI-OS, would appear. To this day none of the Microsoft products can multitask better than this thing could.

Things today are pretty much at a dead end, although nobody wants to admit it. Windows is 25 years old and needs to be swapped out for something better.

By Comdex 1985, Microsoft had Windows 1.0 ready to show. It was a laughable product that was nothing more than a shell interface running on top of DOS. It was a curiosity at best, and nobody was buying it.

It could only tile its "windows," and there were no major programs that ran on it. It came with a crude clock, a miserable text editor, and a game called Reversi. Compared with the then year-old Macintosh, it was pathetic.

But someone at Microsoft knew that this GUI thing was the future, and they continued to pursue the idea. The eventual key, to my thinking, was Microsoft's partnering with IBM on joint development of OS/2. Microsoft put itself into a position where it could jump ship at an opportune moment and throw all its newfound GUI OS expertise into Windows.

It all ended up leading to Windows 3, which was functional and popular and eventually led to the blockbuster Windows 95, which dominated the scene like nothing before and nothing since. Microsoft was at the top of its game.

The hubris was eventually reflected by the 1995 release of Microsoft Bob, a shell program that turned your user interface into a cartoon-like system dominated by a cartoon dog. For some unknown reason, Microsoft thought this would appeal to adults and sold it to an older audience rather than to the kids. It failed miserably.

Windows itself continued to improve up to and including the release of Windows 2000, which many (including me) believe was the apex of the Windows franchise.

Things today are pretty much at a dead end, although nobody wants to admit it. Windows is 25 years old and needs to be swapped out for something new and better. When Microsoft first showed the OS, in 1983, Ronald Reagan was in his first term as president. It was the year of those dopey Cabbage Patch dolls, and the year that camcorders first appeared. *Tootsie* was a big movie, and Woody Allen's *Zelig* introduced audiences to unusual special effects. *Star Wars: Episode VI—Return of the Jedi* was the top grossing movie. The USA invaded Grenada. This was a long time ago!

In the tech business, the Osborne Computer Corp. declared bankruptcy. The first commercial cellular phone service was launched in Chicago.

One of the much-covered technology items in 1983 was the RCA video-disc player. The system used stamped recording technology and needle-in-groove techniques to reproduce a prerecorded video from a platter that looked like a vinyl LP.

A lot of things have come and gone since 1983. But Windows remains. Can we put this old dog to sleep? Please?

DVORAK LIVE ON THE WEB *John's Internet TV show airs every Wednesday at 3:30 ET on CrankyGeeks.com. You can download back episodes whenever you like.*

Dvorak's Inside Track

Windows 7 is at the top of this month's gossip items as early reviews start coming in. Despite all the supposed new features that will probably disappear before official release, most people see Windows 7 as **SP3 of Vista,** and perhaps that is what it should be.

One of Windows 7's characteristics apparently is that it seems **snappier.** Tests appear to conclude that while it is actually **not faster than Vista,** it feels as if it is. What does that mean? It means, to me at least, that the OS is organizing tasks differently and perhaps buffering things like directories in a manner that makes it feel faster.

I've harped on this problem over the years. Too often **Windows will choke** on something like loading a download directory and bring up the little flashlight as if it's looking for something. **It's often ridiculous.** The OS should be better at anticipating or understanding what you are trying to do.

Some people are asking if this is the **last iteration of Windows** that we will be seeing. Perhaps the Windows franchise is over. What will Microsoft do? Let's face it: The moniker **"Windows" is old.** In fact, it's 25 years old.

The reason that there are no parties celebrating this anniversary is because Microsoft does not want to **remind** people how old this product actually is. "Twenty-five years! Holy crap! When are they going to do something new?!?"

Apple has reinvented its OS numerous times, and Microsoft has not. Microsoft evolved DOS from a product it bought from someone else. Then it developed Windows while supposedly working with IBM on OS/2. A quarter of a century later, we have Windows 7 and nothing else. With all its money and resources, **you'd think** Microsoft would have a half dozen parallel projects running as experiments. Even Intel has made **some effort** to decouple from the *x*86 architecture. It has not been successful, but at least it's trying.

Criticism aside, I did see one interesting specification on the Windows 7 list. Apparently Windows 7 will **support up to 64 processors.** Does this mean the OS will actually do load balancing on an eight-core CPU? Let's hope so.

Guessing Game Dept.: The forecast for PC sales for 2009 **appears gloomy,** but forecasters keep getting these predictions wrong. The past year was supposed to be gloomy, but sales of processors, for example, were up 15 percent worldwide. A lot of this has to do with the emergence of the smartphone as a platform, the unforeseen popularity of the netbook computer, and the ridiculously low prices of full-size notebooks. It's **amazing** what you can get for $600. Go shopping!

Whither UWB? Dept.: It looks as if **Intel is going to bail** out of the technology known as ultra wideband (also called pulse radio). UWB is one of the **biggest disappointments** in technology I have encountered since discussing this 20 years ago. Nothing much has come of it. Intel was developing a putative commercial iteration of the idea, but now it's given up, and UWB will continue to be a back-burner notion.

Meanwhile, **Intel is pursuing WiMAX to the max** as Sprint rolls out WiMAX to various test markets. WiMAX covers a much broader territory than Wi-Fi and can transmit for miles and miles. But because the receivers—especially the mobile ones—are unlikely to have the same amount of wattage to transmit signals back, the **practical distances** will probably be around 1.5 miles at most. This means a lot more towers than were talked about when WiMAX first joined the conversation and the idea was to have a 25-mile radius.

Personally, I think the idea of **mobile WiMAX is a dead duck.** Let the cell-phone companies have that business. I think fixed WiMAX to the home is the only chance the technology has to gain a foothold.

Predicting the Future Dept.: The affable Brian Halla, CEO of National Semiconductor, sees a rosy future for, of all things, analog chips, saying in a recent press conference that analog is better than digital for many applications. Of course! He went on to outline what he called the **five waves of semiconductor demand** in the transistor era. The first wave was DRAMs for mainframes. Then came the demand for microprocessors. Number three was networking chips, as the Internet took off. The fourth wave was for mobile phones. His fifth (predicted) wave is a **sketchy hodgepodge** having something to do with health care, renewable energy, and "personal mobile devices." In other words, he doesn't have a clue. While I cannot subscribe to this list of five, I do think the mobile phone "wave" is just beginning, as the smartphone becomes a **computer platform.** Most observers would see the next wave as microelectromechanical systems (MEMS) rather than the Halla witches' brew that drops his love of analog chips into the pot.

MEMS are made like semiconductors but contain minute mechanical capabilities. Some would say that these are nanotechnology devices. From my perspective, the **first practical MEMS device** was the Texas Instruments DLP (digital light processor), which was originally called a DMD (digital micromirror device). The little mirrors on the chip are mechanical. Other MEMS products include sensors, microgyroscopes, weird display chips, and even microphones. **Nobody can guess** where this technology will head.

WANT MORE DVORAK? *John writes a weekly column for our Web site, too. Log on to* go.pcmag.com/dvorak. *You can also e-mail him at* pcmag@dvorak.org.

SASCHA SEGAN

Spoiling the Smartphone Party

If the furious arrival of the BlackBerry Storm has shown anything, it's just how fast, and how far, the Apple iPhone has pushed the smartphone industry forward. Although they are locked in fierce competition, manufacturers also seem to be working together to create the next great generation of smartphones.

Unfortunately, the looming financial crisis, and wireless carriers' pricing strategies, could limit the appeal of smartphones in the months to come.

Right now, smartphones are selling like mad in the U.S. market, where sales jumped 84 percent between 2007 and 2008, according to NPD, the market-research firm. Smartphones now constitute 19 percent of the handsets sold in the U.S., NPD says. And technologically, at least, the news keeps getting better.

Now, the last two pieces of the puzzle started by the iPhone's launch are falling into place: RIM's BlackBerry Storm and Nokia's 5800. RIM, the handheld world's most passionate proponent of keyboards, solved the "How the heck do I feel a touch keyboard?" problem with its touch-click keyboard design. (You can read about my initial hands-on experience with the Storm at *go.pcmag.com/storm9530.*) Nokia, an 800-pound gorilla in Europe, took on the mobile-content question and decided to sit on the record labels until they gave up unlimited, free music for phones.

These announcements followed the launch by HTC and Google of the T-Mobile G1, which is basically a less expensive, less totalitarian version of the iPhone.

This is one of those happy situations where everybody seems to be doing R&D on some different aspect of smartphone design or service. Apple is the user interface king. RIM knows about keyboards and corporate manageability. Nokia is trying to turn itself into "a services company," so it's creating a new model for delivering mobile content to subscribers. HTC has always been a great commoditizer, bringing high-end concepts to a range of carriers, form factors, and price brackets. And Google likes it when things cost as close to zero dollars as possible.

Now everybody is going to build on everybody else's advances. The result: In 2009, smartphones are going to be cheaper. They're going to be easier to use. We're going to have tactile touch screens, great media capabilities, and lots and lots of cool third-party software. Customers and providers will benefit.

The relentless march of smartphones may be stopped by the prices of wireless carriers' data plans. Prices are coming down, but probably not fast enough.

RIM, Nokia, and HTC must be writing love notes to Steve Jobs for helping them out like this. By making exclusive deals with carriers, Apple left lots of room in the market for competitors to flourish. Here in the U.S., Apple aligned itself with AT&T, which created massive pressure for the other three carriers to come up with something as cool as the iPhone. Verizon (serious, controlling, known for quality) went to RIM (serious, controlling, known for quality). And T-Mobile (cheap and cheerful) met with Google (free and cheerful).

Sprint seems to have thrown its lot in with Windows Mobile, with the HTC Touch Pro. But the Touch Pro doesn't really add much to the conversation, largely because Windows Mobile looks like last year's OS. Its last major upgrade, version 6.0, arrived in February 2007. Though it's had a minor update since then and device manufacturers keep putting new skins on the OS so it looks fresh, Microsoft needs to overhaul the whole thing soon if it wants to be any sort of leader.

Unfortunately, the relentless march of smartphones may be stopped by the prices of wireless carriers' data plans. If Americans tighten their belts during a 2009 recession, people will be looking very closely at their monthly bills. Data-plan prices are coming down, but probably not fast enough to help people move over from voice phones.

AT&T's standard smartphone data plan dropped from $45 to $30 recently, and Verizon's dropped from $45 to $40. But those lower prices still represent a big chunk of change to add to your phone bill in tough economic times.

And in some cases, data-plan prices are actually rising! Case in point: the T-Mobile G1. Earlier T-Mobile smartphones worked with a $19.99-per-month data plan, but the G1 has a new, $24.99-per-month plan. Then there's the iPhone, whose plan went from $20 to $30 with the transition to 3G.

I know the financial crisis has made me hyper-aware of my monthly bills. I'd even be willing to spend more up front so I'm not on the hook for higher monthly bills from here to eternity.

But the cell-phone carriers don't seem to understand that situation. Now that the phone manufacturers have finally gotten things moving, it would be a pity if the smartphone revolution ended up being derailed because wireless carriers want a bigger slice of Americans' shrinking monthly pie.

STAY PHONE-SMART *Keep up with the latest on smartphones by reading Sascha's column at* go.pcmag.com/segan.

DAN COSTA

Metered Net Good for Mom

Comcast finally went public with the fact that it is putting a hard cap on its customers' Internet usage. The average user may be initially shocked to find out you can't just download—or upload—as much as you want, but the truth is that Comcast's limits won't affect the average user—at least not right now. This cap does represent a major shift in the broadband industry, a shift that should concern casual browsers and power users alike. But putting the larger issue of Net neutrality aside, I just don't think my mother and I should pay the same rate for Internet usage.

My mom has a cable modem. She hits the Web every day to get news, forward inspirational e-mails, and send me photos of the latest varmint or reptile that has wandered into her backyard. I doubt she reaches 1MB of data per day.

I have a cable modem too, but my usage looks a lot different. When I'm home, I'm constantly online, blogging, writing, and sending files and high-resolution artwork back and forth to my coworkers at PCMag.com. I also download music, videos, and podcasts from iTunes, grab old TV shows from BitTorrent, and stream movies through Netflix, and I've recently started playing Warhawk with others online on my PlayStation 3. All are bandwidth-intensive applications. On a busy weeknight, I can blow through a few gigabytes of traffic, easy. On weekends: much, much more.

No reasonable person would say that my mom and I should pay the same price for our service. It's a fundamental issue of fairness. We both want our Web pages to load quickly, but we aren't using anything close to the same service. In fact, I already pay Optimum more to get my "enhanced" 20-megabit-per-second cable connection instead of the standard 10-Mbps connection. If I want to use my system as a multimedia server to distribute content across the globe, I don't have a problem paying a few bucks more than my mom, who uses her connection for e-mail and light surfing.

Of course, I would like to know exactly what I'm getting for my money. And ISPs have been a bit dodgy on that issue.

Last October, Comcast began *officially* limiting usage for its 12.9 million customers, although the company had been doing this quietly since 2005. The difference is, for all those years no one knew what the "magic cap" was until Comcast came calling to tell you that you'd gone over. If after that you continued to exceed the secret cap, the company canceled your service. Now, thanks to an FCC sanction this summer, we have a number. And that number is 250GB per month.

It does seem clear that we need a new pricing scheme for Internet access. The one we have now doesn't make sense. Metering access deserves a chance.

That's pretty generous, actually. Especially when compared with the pricing scheme that Time Warner is testing in Beaumont, Texas. There, the caps start as low as 5GB, which goes for $30 a month. For $55 per month you get 40GB. After that every extra gigabyte you use in a month costs you a buck. Not cheap, but it does seem clear that we need a new pricing scheme for Internet access. The one we have now just doesn't make sense. Metering access deserves a chance.

Of course, for metering to work, ISPs need to tell users exactly what they are using. Sprint's WiMAX XOHM network went live in Baltimore recently, and the service includes some cryptic legalese that will let Sprint manage network traffic. The company is clear about the fact that it reserves the right to do just about anything it wants to control the volume of traffic you use. The usage policy reads:

To ensure a high-quality experience for its entire subscriber base, XOHM may use various tools and techniques designed to limit the bandwidth available for certain bandwidth-intensive applications or protocols, such as file sharing.

That is the biggest blank check since Treasury Secretary Henry Paulson asked for $700 billion. Where are the specifics? Comcast didn't want to come clean with the details, but the FCC forced it to. Sprint should spell out its plans. For that matter, so should every other broadband supplier.

If a provider wants to charge per megabit, the least it can do is explain what you're getting for your buck. And it wouldn't be difficult to let users know exactly what they are using. Better still, express usage in a desktop widget. That way, a user can track it in real time. You can do this with tools like the Multi Router Traffic Grapher (*oss.oetiker.ch/mrtg*), but it really should be an app your ISP gives you.

I realize I'm simplifying the issue of Net neutrality, if not bypassing it altogether. I haven't touched on the stifling effect that tiered pricing would have on the technology industry or ISPs' not-so-veiled efforts to shut down online content providers. Or even the fact that we currently have some of the highest prices for broadband access—and some of the lowest rates of adoption—in the civilized world. And I haven't even mentioned Google. But that is for another column.

For now, can't we all agree that my mom and I shouldn't be paying the same price for broadband?

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Sneak Peek Inside Windows 7

Latest code shows a smoother interface, better hardware support, a lighter footprint, and maybe even a performance increase. *By Michael Muchmore*

We got our hands on the official pre-beta version of Windows 7 at the recent Microsoft Professional Developers Conference, and our initial reaction is: Sure beats Vista.

Though there are similarities with Vista, the new OS includes major user interface updates, and it promises to work much better with third-party hardware and software than Vista did at its launch. All in all, the new system is impressive, though it will probably see significant changes before its expected release later in 2009. (The official beta version is slated for release in early '09.)

Based on our inspection of build 6801 of the prerelease beta software, some of the key features Microsoft plans to make part of our daily computing lives include HomeGroup, simplified home networking for sharing media files and printers; Device Stage, a single page giving access to all the capabilities of a device such as a phone, MP3 player, printer, or camera; and Windows Touch, for mouse-free PC interaction on touch-sensitive screens. We also got a look at a later build (6933) that contains user interface updates, such as a redesigned and more powerful Taskbar.

TAKE A LOOK Hovering the cursor over a Taskbar button shows previews of the app's open documents, such as these Internet Explorer pages.

GOOD START The *Start* menu resembles Internet Explorer 8's address bar dropdown, offering recent and frequent documents and applications. Not shown here: When you hover the mouse over an app in the left-hand list, recent documents for that app appear to its right.

Steven Sinofsky, senior vice president for Windows and Windows Live Engineering Group, and Mike Nash, who's responsible for Windows Product Management, made the point that all software and hardware that works with Windows Vista will work with Windows 7, as driver support remains the same. Furthermore, the kernel version number will stay at 6.1, which should help avoid some problems with older software not updated to work with a new major version number.

Taskbar and Desktop Behavior

In Windows 7, Taskbar buttons are bigger but take up less horizontal space and include devices (printers, scanners, and so on) as well as applications. Hovering your mouse over a Taskbar button brings up horizontal preview thumbnails of each document open in an app, and hovering over one of those brings up a full-screen preview of the document. You can now drag Taskbar buttons along the bar, positioning them where you like, instead of where the OS wants to put them. You can even pin an app's Taskbar button, leaving it always accessible from the same place on the Taskbar. That's handy for often-used applications.

The unlabeled rightmost toolbar button lets you "peek" at the desktop, or quickly show it while you have other windows open. The desktop now includes your gadgets—the sidebar has gone away! Microsoft considered the sidebar too great a hog of screen real-estate, especially with so many people moving to laptops, where screen space is at a premium. Instead, you just peek at the desktop and the gadgets all remain visible. And another specific Task-

SO LONG, SIDEBAR The Sidebar is gone. Windows designers considered it too big a screen hog, so now gadgets float on the desktop, which can be revealed with a click of the *Peek* button in the bottom right-hand corner of the screen.

PLACE FOR YOUR STUFF A new feature in Windows Explorer, Libraries are basically virtual folders for holding similar content types. Libraries can span multiple folders, drives, and even multiple PCs on a network. For example, the library shown here gathers photos from such various places.

bar button, that for Windows Media Player, can now play songs from thumbnails, without requiring you to launch the player software. That's not a major improvement, but it is pretty cool.

Window behavior has also changed for the better. Dragging a window to the side when there's another window behind it neatly arranges the windows in side-by-side half-screen mode, and dragging a window's title bar to the top of the screen maximizes the window. This process, called "snapping" windows, saves you from having to resize windows manually to fit the available space.

MEDIA ACCESS Choose what to play right from the Taskbar, using thumbnails on the Windows Media Player Taskbar button.

Share Folders with Libraries

New in Windows Explorer is the concept of Libraries. These are virtual folders that can live across multiple folders and even multiple networked PCs. The default libraries are for Documents, Downloads, Music, Pictures, and Videos. So if you're using your work laptop at home, you can play music that lives on a home PC's drive from the laptop. It was easy to create a new Library, and just as easy to include whatever folders I liked from any PC connected to the home network (whether Wi-Fi or wired) that I could browse to using the *Include a folder in [library name]* dialog. I could even drag a folder into the Library to include it.

The notification area (or System Tray) has also gotten less noisy. Now you can determine what events and applications can place icons in the tray and when they can pop up warning messages. A new entry in the tray is the Action Center icon, which consolidates messages from many purveyors of unwanted messages, including Security Center; Problem, Reports, and Solutions; Windows Update; and User Account Control.

Simpler Home Networking

As soon as you connect to a wireless network with a Windows 7 PC, you're asked whether it's a home, work, or public network. If you choose home, you can set up file and printer sharing in a couple of simple steps. After I connected to a Wi-Fi network, I was presented with a wizard-generated password, which is required for adding new computers to maintain security. And as Microsoft's Linda Averett demonstrated, when you take a laptop from work to home, the OS will automatically switch to the printer that's nearby, rather than requiring a visit to the printer setup dialog. I haven't tested this function yet, but if it works, it's a clever and welcome improvement.

Other types of connectivity have also gotten simpler. I was easily able to get Windows 7 to recognize and connect with my Bluetooth Motorola MotoRazr 2 using a simple three-step wizard. This process is much smoother than the same one undertaken with Vista, which forces you to go through Control Panel settings. Windows 7 will let you sync your contacts and cellphone photos with its Media Sync, and there's also a ringtone editor. Support for Bluetooth 2.1 has been added, as has support for ultra wideband (UWB).

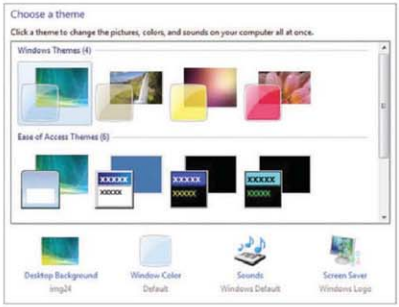
Better Device Support

According to Microsoft's Dennis Flanagan, responsible for Windows 7 hardware support, the new OS will have much more widespread support for devices than Vista initially did, because it uses the same driver standards. All that work getting hardware to function with Vista won't need to be repeated with Windows 7. That's huge.

The new Devices and Printers folder, along with a Device Stage page for each piece of hardware, will make using those devices and getting to all their capabilities much clearer and easier. When you connect a device and its drivers are downloaded, the hardware gets an icon in Devices and Printers that actually looks like the object you connected, as opposed to one of those diagrammatic Windows illustrations. Multifunction printers will have just one entry with all their functions, rather than separate ones for scanning, faxing, and printing. That's much handier.

The Device Stage page, supplied by the hardware makers, will use an open XML format provided by Microsoft to present a photo of the device, access to all its settings and capabilities (for example, changing ringtones on a phone) and a link to its manual or vendor-supplied software. After Microsoft receives the XML document, it is digitally signed and distributed to your PC using the Windows Metadata Information Service—which Microsoft uses also to deliver album art and TV listings.

KNOW YOUR GEAR A key new component of Windows 7, Device Stage shows all capabilities for any device you plug into the PC. Content comes from the device's manufacturer. This feature makes getting stuff like pictures and music onto and off of your cell phone, for example, much simpler.



NEW GLASSES Themes can be set to change monthly, and customizing the window border "glass" tint has been made a more obvious choice.

The Device Stage could be very helpful. A lot will depend, however, on Microsoft actually being able to deliver staging pages for a critical mass of hardware on release of Windows 7.

Nice Touch

Though I wasn't able to test the touch capabilities myself, demos at the Professional Developers Conference showed off the technology's power and how Windows 7's interface has been designed to take advantage of it. Improvements range from the simple, such as *Start* menu choices automatically enlarging when a screen is touched, to the more sophisticated, such as support for multitouch gestures—the ability to flick your finger to pan down through many-page-deep windows or Web sites, for instance. Whenever you press your finger to the display, a "water drop" appears, showing that the touch has been recognized, and the mouse cursor disappears, to avoid input confusion.

Newly Accessorized

The Paint image-editing tool that's been included with Windows since last century has finally been updated with the Ribbon-style menu bar. The big *Copy* button is especially useful for grabbing images from the clipboard or for taking quick screenshots with the Print Screen key without the need to install screen-capture software.

The freebie, bare-bones text editor WordPad has been beefed up with highlighting, line breaks, additional text colors, bullets, indents, print preview enhancements, picture insertion, and zoom.

The age-old Calculator is also updated. Now it can save a history of your number entries, do unit conversions, create calculation templates, and date calculations.

A new accessory is Sticky Notes, a digital equivalent of the adhesive squares that decorate cubicles everywhere.

WHERE'S WI-FI? A single click on the Networks icon brings up the list of available wireless connections.

Less-Intrusive User Account Control

User Account Control has been one of the bugaboos of Vista. UAC is the feature that has you okay a warning dialog every time you install a program or change a system setting. Vista users object because it's just too intrusive, needlessly delaying you from the task at hand. In Windows 7, you can adjust UAC enforcement with a slider that offers options ranging from "Always notify" to "Never notify." For one-person PCs, the latter makes sense, whereas family PCs will probably want more safeguards against system changes, even though it means more notifications. Confirmation requires your admin account to approve system changes and program installations, which makes sense if you want to control what your kids are doing. As a halfway measure, you can tell Windows 7 to notify you only when programs try to install software, and not for system changes.

In the Cloud

Several Windows apps have changed address—to the cloud. Specifically, they've relocated to that part of the Internet cloud occupied by Windows Live services and software. The plan is to deliver Windows Live Essentials—Mail, Photo Gallery, and Movie Maker—online rather than with the OS installation discs.

The Windows Live Group intends to update the programs periodically, for things like adding more video-editing tools to Movie Maker. Another goal for Live Essentials is to make them play better with third-party online services. For example, Windows Live Mail can aggregate your AOL, Gmail, and Hotmail mail accounts. Photo Gallery will be able to upload your memories to services like Flickr, and to Microsoft's own Live Spaces.

First Impression: Slimmer, Faster

It's too early to say much about performance, but Windows 7 already seems a little faster than Vista. On a 2.6-GHz Dell XPS M1330 with 3GB of RAM, it started up in 22 seconds. It shut down completely in 8 seconds, even with a few apps open. For what it's worth, the Windows folder for Windows 7 was 9GB, while that on my Vista machine is 15GB.

Though Windows 7 has the same kernel number as Vista, there are plenty of major changes in the new OS, a slick new UI, and a trimmed-down memory footprint. Its designers have also put a lot of thought into preventing software from doing bad things, such as de-allocating memory that doesn't belong to it. The new features, interface changes, hardware support, and hardening of the OS result from a mountain of feedback that Microsoft has collected from users.

Windows 7 is a chance to remedy the bad impression made by Vista, which has been roundly criticized for incompatibilities and steep hardware requirements, among other things. The user experience promises to be improved, and the touch features could even change the way we interact with our PCs—assuming there's mass movement to machines with touch screens. Though the transition from Vista looks to be relatively painless if everything goes as advertised, users moving from XP will be in for more of a shock. However, that shock probably won't include the compatibility headaches suffered by those who made the switch from XP to Vista. We won't know until we have the final code, but based on this first look at Windows 7, Microsoft is moving in the right direction.

CHECK PCMAG.COM for ongoing analysis and regular updates on Windows 7.

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Make Vista Great

With some easy tweaks and a few utilities, you can boost the performance, improve the stability, and customize the OS to better fit your needs. *By David A. Karp*

Shortly after Microsoft released Windows Vista in 2007 came growing frustration at the software's poor performance, lousy hardware support, and remarkable ability to crash with no input from the user. So Microsoft snapped into action, and more than a year later delivered Service Pack 1, which fixed, well, a few things.

Luckily, most of Vista's shortcomings are fixable. If you're willing to roll up your sleeves and do some tweaking, you can turn Vista into a pretty great OS. Let's start under the hood.

Improve Performance and Stability

Of all Windows Vista problems, poor performance and instability are the least forgivable. Experience has shown that Vista can underperform on even the hottest hardware. If your 3-GHz quad-core system takes 20 seconds to open Control Panel, grimace but don't give up: Vista can still be saved with a little sweat, not too many tears, and the following tactics.

Room to Zoom

Your PC uses memory the way your car uses the fast lane: The more space you've got, the faster you can go and the less likely you are to crash. If your PC has less than 1GB of RAM and there's space for more, upgrading to at least 2GB is a cheap and effective way to give it the room it needs. Remember, though, that anything more than 4GB is wasted on a PC running 32-bit Vista; you'll need the 64-bit edition—and an x64-compatible processor—to make use of 4GB or more of RAM.

Investigate Crashes

Believe it or not, Vista keeps track of every application crash, blue screen of death, and hung application you close through Task Manager. Just open the Problem Reports and Solutions page in Control Panel, and click the *Check for new solutions* link on the left.

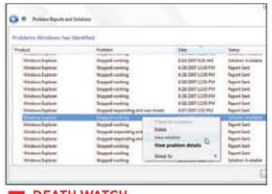
Now don't expect the OS to fix all that many problems by itself; the page is more a learning tool than anything else. When it's done "checking," Vista might ask you to send information—which may amount to hundreds of megabytes of log files—to help Microsoft create future solutions. Do it if you have the time; as the saying goes, it's the only way they'll learn.

But if you want to learn something about what's crashing Vista, click the *View problem history* link back on the main page to see a list of recently recorded crashes. Right-click any entry and select *View solution* (if available) to see Microsoft's suggestions, but skip the *View problem details* entry unless you enjoy reading cryptic 16-bit Hang Signature codes.

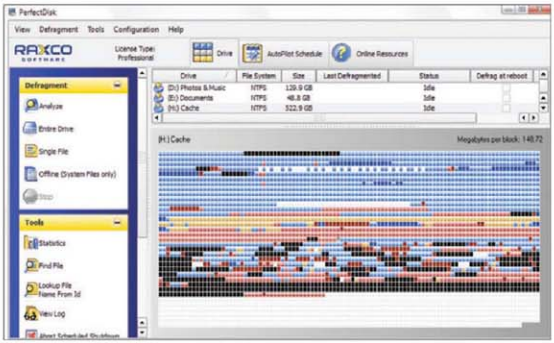
But most important, review the *Information about other problems* section on the main Problem Reports and Solutions page to see if there are any software updates that are known to fix recent crashes. Don't be surprised if you see several update notices for things you've forgotten about, such as third-party video codecs and applications

1 WHAT'S YOUR PROBLEM? Use the Problem Reports and Solutions page in Control Panel to research recent application and driver crashes—and even find solutions to some nagging issues.

2 GET DETAILS Click *Show problem details* to see what problems Microsoft is researching before you begin sending hundreds of megabytes of log files.



3 DEATH WATCH The system even records Windows Explorer crashes caused by the Green Ribbon of Death. Right-click any entry to see what Microsoft knows about the problem.



SWAP THIS PerfectDisk does a much better job than Vista's Defrag tool at keeping your hard disk fast and healthy, which ends up making Vista faster and healthier.

that aren't normally covered by the Windows Update feature.

Hunt for the Resource Hog

Your PC would be infinitely fast if it didn't have anything to do. Alas, it has plenty to do, most of which takes place behind the scenes. Whenever Vista's performance appears to drop precipitously, press Ctrl-Shift-Esc to open Task Manager, and then choose the *Processes* tab. Turn on the *Show processes from all users* option at the bottom, then click the CPU column header twice to group the biggest resource hogs at the top of the list. (If you don't see a CPU column, go to *View* | *Select Columns*, and turn on *CPU Usage*.)

If all is well, you'll see the harmless System Idle Process consuming 95 to 97 percent of your CPU cycles, with a handful of single-digit tasks all doing their own thing. But if any task consumes more than 80 percent on a single-core processor system or more than 45 percent on a dual-core, that task is likely slowing down your PC. Try closing the program to see if the problem abates; if the program won't respond, use the *End Process* button to terminate it.

Mind Your Hard Drive

The speed of your hard drive has significant impact on your PC's performance and stability. Keeping at least 10 percent of your hard drive free is critical to decent performance: Show me a hard drive that's 95 percent full and I'll show you a system that's sluggish and crash-ridden. And while there's disagreement about its effectiveness, defragging can't hurt and can help.

Unfortunately, Vista's own Disk Defragmenter utility (defrag.exe), which is supposed to keep things running smoothly, is slow, hard to use, and not particularly good. It may be worth investing about $40 in PerfectDisk Professional (*raxco.com*). Not only can PerfectDisk defragment your paging (swap) file, file table (MFT), and file system metadata, it pays specific attention to contiguous free space, which speeds up the writing of new files and reduces future fragmentation. And it has a pretty drive map for you to look at while it's working.

Repair Cracks in Windows Explorer

The Vista interface and UI doo-dads look great, but there's more to an OS than surface beauty. Hard-core PC users are more interested in getting things done, without the interface getting in the way. These steps will eliminate some Explorer glitches.

Cure Vista Explorer's Amnesia

Windows Explorer has a nifty thumbnail display that shows iconic previews

PERSISTENT VIEW After applying the Default Folder Template Patch, these new options will appear in your Folder Options window, enabling you to override Explorer's propensity to pick the wrong view settings automatically.

of your pictures, videos, PDFs, and even MP3 album folders. But accompanying this eye candy is Explorer's baffling inability to determine the type of files in a given folder, a problem that leads to displaying the wrong view almost every time. This is why you may see spreadsheet files as thumbnails and JPEG images in the Details view, and why changing the view doesn't ever seem to stick.

The root of the problem is *templates*, Vista's cumbersome method of saving different view settings for different types of files. You can right-click a folder, select *Properties*, and then click the *Customize* tab to choose the template to use for that folder (Pictures, Documents, and so on), but that alone won't stop Explorer from ignoring your preference and picking whichever template it wants.

To fix the problem:

- Go to *www.annoyances.org/exec/show/choosetemplate*.
- Download ResetExplorer.exe and ChooseTemplate.reg. Then double-click ResetExplorer.exe and answer *Yes* to clear Explorer's cached data.
- Double-click ChooseTemplate.reg and answer *Yes* to apply the patch.
- From Windows Explorer's Organize drop-down, select *Folder and Search Options*.
- Click the *View* tab.
- From the *Default Folder Template* branch in *Advanced Settings*, choose how you'd like all folders to be viewed by default and click *OK*.

Thereafter, Windows Explorer will stop guessing at a folder's contents and will use your preference each time. To forcibly switch the template for a folder or branch, use the *Customize* tab as described earlier. To save a new view or sorting preferences for the currently selected template, go ahead and make those changes, then return to the *View* tab (also described earlier) and click the *Apply to Folders* button.

Stop the Green Ribbon of Death

Any Vista user is likely to recognize with fear the green progress bar across the top of Windows Explorer: If it's there for more than a few seconds, that could mean Explorer has crashed. Regardless, you're stuck waiting as long as a minute for a simple Explorer window to become usable! To reset Explorer without restarting Windows, press Ctrl-Shift-Esc, choose the *Processes* tab, and click the *Image Name*

BUSTED Broken media files often cause Windows Explorer to crash while it tries to make thumbnail previews of them.

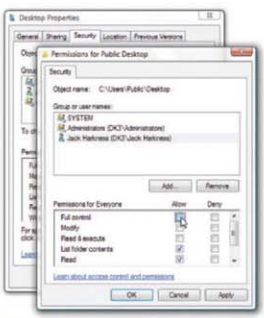
column header to sort the list. Select each instance of Explorer.exe in the list and click *End Process* to close it. Don't panic if you lose your desktop along the way; from Task Manager's *File* menu, select *New Task*, type *explorer*, and click *OK* to restore your desktop.

Unfortunately, there are many reasons Explorer hangs or crashes. One fixable culprit is Vista's thumbnail display. If you open a folder with a corrupt or empty video file, a garbled photo, or any media file that uses a defective driver (called a codec), Explorer crashes while generating the thumbnail. To fix the problem, rename the extensions of troublesome files (for example, you could change *myvideo.wmv* to *myvideo.wmv.broken*).

You can also stop the crashing by disabling thumbnails altogether. Open the *Folder Options* dialog in Control Panel, choose the *View* tab, select *Always show icons, never thumbnails*, and click *OK*.

Scale Back UAC

User Account Control (UAC) protects your PC by asking your permission before allowing access to protected folders and applications. If only it didn't nag so often, people might not disable it entirely, thus negating its protective capabilities.



DON'T ASK To reduce annoying UAC prompts, loosen security on the All Users Desktop folder, which lets you rename any desktop icon without having to give permission every time.

To skip the UAC prompt for simple actions such as renaming desktop icons, you need to unprotect the associated folders on your hard drive. Open Windows Explorer and navigate to the All Users Desktop folder (C:\Users\Public\Desktop). Right-click the folder, select *Properties*, choose the *Security* tab, and click *Edit*. Select your account name in the list and then click the check box next to *Full control*, in the Allow column, and click *OK*. Repeat for any other folders that give you trouble.

For other ways to reduce UAC headaches, visit *go.pcmag.com/uacfixes*.

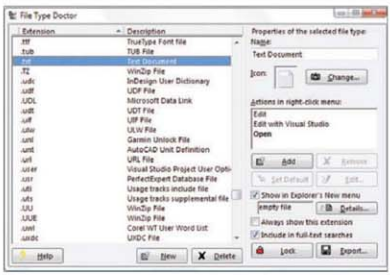
Fill in Your Favorite Missing Pieces

It's okay: We understand mourning the loss of an operating system feature. We pine, too, for the golden days of Windows XP, for a handful of gadgets we've seemingly lost after making the big OS switch. But grieve not: Here are some tools to fill the holes in Vista.

Customize File Icons and Associations

Vista lacks the File Types window, the tool used in earlier versions of Windows to edit context (right-click) menus and customize document icons. Granted, it wasn't the best-designed utility around, but it was the only way to associate more than one application with a file type or clean up debris left over by the myriad installers you've used over the years. Vista won't even let you change a file-type icon—a typically useless but somewhat popular pursuit. All you're allowed to do in Vista is choose the default application—the one that appears when you double-click a file of a certain type—by either using the Default Programs page in Control Panel, or by right-clicking a file, selecting *Properties*, and clicking the *Change* button.

Here are two substitutes we like, although neither is free. QuickAssociation (*go.pcmag.com/quickassociation*) lets you easily change "friendly" file descriptions, select different icons, change default programs, and even lock file types to prevent other programs from obliterating your preferences. And File Type Doctor, which is part of Creative Element Power Tools (*creativeelement.com/powertools*; $18 after free trial), performs similar tasks, plus lets you customize icons and edit context menus. Naturally, you need to have administrator privileges to make changes to your file types.

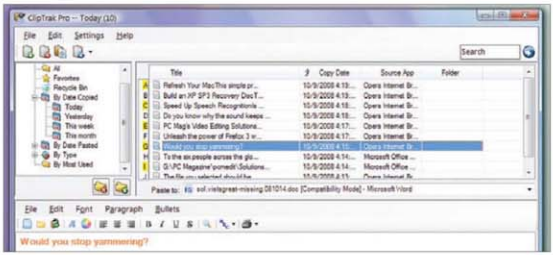


FILE PHYSICIAN Right-click any file and select *Edit File Type* to customize file icons, edit context menus, and lock file types with File Type Doctor.

Get Back Real-Time Search

The handy search field located in the *Start* menu and every Explorer window makes finding files easy—or so Microsoft would have you believe. What you're actually searching is an index, somewhat like the one Google and other search engines use, which means results may be incomplete or out of date. This is why, after searching for *.jpg in a folder full of JPG files, Vista's search results could be entirely empty.

Although it was significantly slower, the old search tool from Windows XP, 2000, and back actually scoured your files each time you conducted a search, which led to more accurate and comprehensive results. To get the same results in Vista, click the *Search Tools* drop-down in



CLIPBOARD Use ClipTrack Pro to access previously copied data.

any open search window (aka Windows Explorer, after you've performed a search), and select the Search Pane. Then, click the *Advanced Search* button to the far right to see more options. Here, turn on the *Include non-indexed, hidden, and system files* option, and then wait patiently while your hard drive chatters away. It could take 20 seconds or 20 minutes, depending on how much work there is to do, but you'll eventually see search results that actually represent the files on your drive.

If you don't want to mess with the clunky Search Pane each time you search, you can force a real-time search every time by removing key locations from your index. From the *Search Tools* drop-down, select *Modify Index Locations*, and then click the *Modify* button. Remove the check box next to any folder you don't want indexed. Click *OK* when you're done.

Mimic Desktop Scraps

For the six people across the globe who miss XP's confusing "desktop scraps" feature, there are other ways to save bits of text from Office applications. Of course, there's always copy-and-paste, but since old stuff left on the clipboard ends up in the land of wind and ghosts once something new is copied, you probably want something that's less short-lived. Check out ClipTrack Pro (*go.pcmag.com/cliptp*), which automatically saves the text you copy to your clipboard and organizes it for easy retrieval.

Build Your Own Ultimate Edition

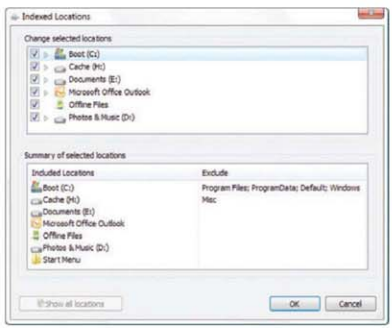
If you didn't spring for Vista Ultimate or one of the other more expensive editions—smart budgeting. You can cobble together the extras you like, and usually at no cost. Here are some alternatives to what comes in the Microsoft box.

Backup and Restore Center

In earlier versions of Windows, everyone got backup software (although it was hidden on the CD in some editions of 2000 and XP). But for Vista, Microsoft has decided that only higher-paying customers have data important enough to back up.

Oh, sure, everyone gets the flimsy *Back Up Files* wizard that can safeguard a subset of your personal documents, but only the Business, Enterprise, and Ultimate editions include the Complete PC Backup and Restore tool to back up your entire hard drive. Fortunately, a number of free backup tools exist for those using Home Premium or Basic, such as PC Backup Utilities Free Edition (*www.pcdisktools.com/pcutil.htm*) and Bacula (*www.bacula.org*). Of course, many external hard drives come with their own automatic backup software.

BETTER RESULTS Remove certain folders and drives from Vista's search index to force a real-time search of your data. It's slower, yes, but more accurate.



DVD Maker

The Windows DVD Maker is a rudimentary tool that lets you put photos and videos on a disc to play on an ordinary DVD player and television. If you don't have Home Premium or Ultimate, you can burn movies to DVD free with DVD Flick (*www.dvdflick.net*) or DVDStyler (*dvdstyler.de*). To burn a photo slideshow to disc, try the free DVDSlideshowGUI (*download.videohelp.com/tin2tin*).

Fax and Scan

Don't shed any tears if you can't use the crummy scanning tool that comes only with the Business, Enterprise, and Ultimate editions; even the cheapest scanners come with better software. But if you need to send a fax with Home Premium or Basic, forget tying up your phone line and use a free service instead, such as FaxZero (*faxzero.com*) or FreeFax (*freefax.com*). To receive a fax, get a free phone number from FaxDigits (*www.faxdigits.com*) or eFax (*www.efax.com/efax-free*), and you can receive incoming faxes as e-mail attachments.

File, Folder, and Drive Encryption

File Encryption is built into every copy of Windows Vista, but only Business, Enterprise, and Ultimate owners can make use of it to protect sensitive files. And the BitLocker tool, used to encrypt an entire drive, is available only in Enterprise and Ultimate. But no matter which edition you have, you can use FreeOTFE (*freeotfe.org*) or the free TrueCrypt (*www.truecrypt.org*) to encrypt your data.

Media Center

Originally a special edition of Windows for living-room PCs, Media Center is now just another application in Vista (Home Premium and Ultimate editions), one that lets you turn any PC with a TV tuner card into a fully functional DVR (digital video recorder—like a TiVo). Sure, it's not expandable, works only with certain infrared remote controls, and is a bit clunky, but Media Center does score high on the gee-

whiz factor. Of course, you can turn any Windows PC into a DVR, regardless of OS edition, with a program like MediaPortal (*mediaportal.sourceforge.net*).

Policy Editors

Geeks love policy editors, such as the Group Policy Object Editor (*Start | gpedit .msc*), Local Security Policy Editor (*Start | secpol.msc*), and Local Users and Groups tool (*Start | lusrmgr.msc*), because these tools make it easy to turn off some of Vista's annoyances, such as User Account Control (UAC), or mess around with the log-on page. If you're using one of the Vista Home editions, however, you can accomplish nearly every task using either the net.exe command-line tool or by editing the Registry. For example, see "Vista Log-In Hacks" (*go.pcmag.com/loghacks*) for instructions on how to hide the list of users from the Welcome screen using both the Local Security Policy Editor and the Registry Editor.

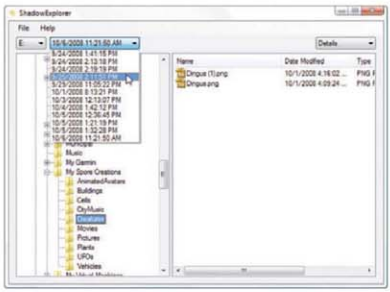
Remote Desktop

Only in the Business, Enterprise, and Ultimate editions can you control a PC remotely with Remote Desktop. If you want to see your desktop while you're away, and you're using Home Basic or Premium (or, while we're at it, Windows XP Home, Mac OS X, Linux, or even an Apple iPhone), just install UltraVNC 1.0.5 or later (*www.uvnc.com*); it's free. For details and instructions, see "Control a PC for Free" (*go.pcmag.com/controlfree*).

Shadow Copies

Vista's *Previous Versions* feature (aka Shadow Copies) is Microsoft's understated counterpart to the clumsy Time Machine tool in Mac OS X, but you get it only with the Business, Enterprise, and Ultimate editions. Funny thing is, the *Volume Snapshot Service*, the background process responsible for shadow copies, runs on all editions of Vista. To access shadow copies in Home Premium or Home Basic, use ShadowExplorer (*www .shadowexplorer.com*), which is free.

GO BACK IN TIME You can use ShadowExplorer to access previous versions of your files regardless of whether you have an edition of Vista that formally supports Shadow Copies.



VISTA VARIATIONS: WHAT'S IN EACH BOX

	HOME BASIC	HOME PREMIUM	BUSINESS	ENTERPRISE	ULTIMATE
Aero Glass interface		●	●	●	●
Backup Files wizard	●	●	●	●	●
Backup scheduler		●	●	●	●
Complete PC Backup and Restore			●	●	●
Dual-core processor support	●	●	●	●	●
Dual processor support			●	●	●
Encryption: BitLocker drive encryption				●	●
Encryption: file and folder encryption (EFS)			●	●	●
Fax and scan			●	●	●
Group Policy Editor (gpedit.msc)			●	●	●
IIS (Internet Information Services) 7.0		●	●	●	●
Web server		●	●	●	●
Join a corporate network domain			●	●	●
Local Security Policy Editor (secpol.msc)			●	●	●
Local Users and Groups Manager (lusrmgr.msc)			●	●	●
Multilingual User Interface				●	●
Off-line files and folders (sync with network folders)			●	●	●
Premium games (InkBall, Mahjong Titans, Chess Titans)		●			●
Remote Desktop			●	●	●
Shadow Copies			●	●	●
Subsystem for Unix-based Applications (SUA)				●	●
System memory supported (64-bit only)	8GB	16GB	128GB	128GB	128GB
Tablet PC extras		●	●	●	●
Windows DVD Maker		●			●
Windows Media Center		●			●
Windows Meeting Space	Join only	●	●	●	●
Windows Movie Maker high-definition support	SD only	HD+SD	SD only	SD only	HD+SD
Windows SideShow support		●	●	●	●
Windows Ultimate Extras					●

Source: Windows Vista Annoyances: Tips, Secrets, and Hacks, by David A. Karp, O'Reilly Media Inc., 2008.

Windows Ultimate Extras

It wasn't until Summer 2007 that items started appearing under the Windows Ultimate Extras heading in Windows Update. To date, the extras consist of a couple of games (Hold 'Em Poker and Tinker), additional sound schemes, language packs, and Windows DreamScene (which lets you replace desktop wallpaper with motion video). If you're using any lesser edition of Vista and want to eat up all your processor cycles—and give yourself motion sickness at the same time—try Stardock's $19.95 DeskScapes (*go.pcmag.com/stardesk*), which does pretty much the same thing as DreamScene at a fraction of the price of the Vista Ultimate package.

Vista has its shortcomings, like any OS. (The recently announced Service Pack 2 should address some of them.) But with the adjustments we've suggested, you can tweak Vista into a system that works the way you want it to work.

MORE ON THE WEB Learn 198 nifty Vista tricks at *go.pcmag.com/morevistatips*.

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Make the Most of Your New PC

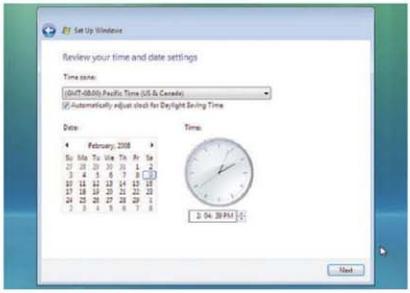
Follow this simple 12-step program to guarantee maximum performance, security, and ease of use. Plus, decide how to deal with all your old stuff. *By Eric Griffith*

Did you receive a pristine, mint Windows Vista computer this holiday season? Great, but right out of the box it's far from perfect. Unlike most electronic devices, which you can plug in and use instantly, PCs—particularly those with Windows—need some adjustment before they're ready for everyday use. You need to make your new system safe, and also personalize it with your own preferences. There are things on the hard drive you should get rid of, and other things you should add immediately. If you haven't yet been introduced to Vista, or it's been a while since you've set up a new machine, we'll walk you through it all in these 12 simple steps. And if your new baby is a Mac, you've got a much shorter to-do list; see "Easy, Mac" on page 70.

1. First Start

After you've devised clever ways to use your new collection of Styrofoam, and made the basic initial connections (power, monitor, Ethernet, keyboard and mouse), Vista will ask you to do various things, like set your language, time zone, clock and calendar, and perhaps most important, create a user account and password. Forgo this

Illustration by Douglas B. Jones



SPRING FORWARD? Select the Daylight Savings box and know your PC will have the right time even if your alarm clock doesn't.

DANGER, WILL ROBINSON! Double-down on security with a combination of ThreatFire and AVG Anti-Virus Free.

only if you're 110 percent sure no one else will want to gain access, ever, or if you're so dull-as-dishwater that it wouldn't matter.

2. De-bloat the System

Big-name system vendors typically install software on their consumer PCs at the factory. These "extras" go by many names:

CUT THE CRAP Use PC Decrapifier to eliminate "extras" you don't need.

bundleware, begware, bloatware, and my favorite, crapware. That's because a lot of it is just that: useless crap. The vendors install it under the guise of helping you out, but mostly they do it to get money from the software makers. A few vendors, like Sony and Dell, offer some options to avoid crapware, but usually just for small businesses. Boutique manufacturers, like Velocity Micro, do a better job of providing a clean system.

What can you do to decrapify your new PC? Download and run the free **PC Decrapifier** (*www.pcdecrapifier.com*). It will hit the flotsam you might not want, from AOL installers to Yahoo! Toolbar, but it won't get them all. If you can identify more crapplications it missed, try **Revo Uninstaller** (*www.revouninstaller.com*), a free utility that does more to fully eradicate errant software than the built-in Windows control panel.

This is a good time to kill anything you don't want that's part of Vista itself. Load up the control panel called Programs and Features. Click "Turn Windows Features on or off" at left. You'll get a User Account Control warning; click Okay. Uncheck anything in the list you definitely don't want, such as games, Tablet PC Optional Components, and so forth. If you don't know what an item does, hover the mouse over the name for a description. If you still don't know what it does, best to leave it.

Don't confuse crapware with *trialware*—a trial version of software you might actually want that is active for a limited time. It might be worth keeping, especially if it's a free trial of a solid security product, which leads us to…

3. Activate Shields

If you're willing to pay to protect your system from malware, and get some extra firewall protection to boot, we recommend you install our Editors' Choice security package, **Norton Internet Security 2009.** Its defense against spyware and viruses is extremely effective, and impact on system performance is minimal.

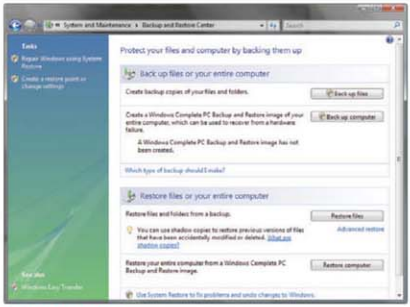
If you don't want to pay, you can set up a pretty good one-two punch with **AVG Anti-Virus Free 8.0** (*free.avg.com*) and another Editors' Choice, **ThreatFire 3.5** (*www.threatfire.com*). The former uses virus signatures to detect problems; the latter uses behavior analysis. Thus they don't conflict, as two anti-malware programs running on one machine usually do. (Keep in mind that ThreatFire can be almost too effective, and should probably be turned off when you're installing new software. Otherwise it may see the new program as a threat.)

Everyone on a broadband connection needs a software firewall to control which applications on your PC can access the Internet. The firewall in your network router is *not* enough. When it comes to free firewall software, **Comodo Firewall Pro** (*www.comodo.com*) remains our top pick.

4. Download Updates

At some point your PC will tell you there are Windows Vista updates available. If you haven't already, feel free to grab them. You may have an icon in the system tray at the lower right, or you can select *Windows Update* from the main Vista menu

GET THE LATEST Check for OS updates once you're up and running. Vista makes it easy.



SAVE YOUR IMAGE Use Complete PC Backup now; be glad later.

OLD TO NEW Easy Transfer migrates your old files and settings.

at the lower left (choose *All Programs* to find it).

Depending on which version of Vista has been installed on your computer and when, you could have quite a few updates—big updates—to download. Let this process run its course. Walk away. Eat some leftovers, go out for a mocha latte, watch an Adam Sandler movie. It's going to take a while, and the Sandler movie will seem to last forever.

When the downloads are done, run Windows Update *again*. Updates tend to beget updates. Three times should be sufficient. By now you've got a truly pristine system.

5. Ghost the Machine

After something catastrophic happens, some techies would just as soon reinstall from the original CDs to get a fresh start, but that means going through all those updates again. Instead, back up your pristine system *completely* right now with the full, updated OS, so you can restore everything quickly after a disaster.

Make a complete drive image (aka a ghost) of the C: drive. You can make images with **Norton Ghost 14, Acronis True Image 11,** or a freebie like **DriveImage XML** (*www.runtime.org*). If you've got Vista Business or Ultimate, use the built-in tool called **Complete PC Backup** to do the job. Store the image on an external drive, if you've got one, and burn it to a DVD.

6. Transfer Files

Vista makes this relatively simple with the **Windows Easy Transfer** utility. It works with the methods we'll discuss (disc, network, and transfer cable) to move not only data files and folders but also settings from your old Windows system to the new. It even re-creates your user accounts, if you want that. It does *not* move your old applications. To take advantage of Easy Transfer, your old PC must be running Windows 2000, XP, or Vista.

TWOFER If buying a transfer cable, buy one that doubles as a KVM switch, like IOGear's.

You can always use old-school sneakernet—putting files from the old PC on a CD, DVD, or thumb drive, then copying them over to your new machine—but if you've got a lot of files, this could take minutes or days. That really big external hard drive with a USB connector you bought for backup is an option. A better solution might be to reuse the old hard drive. A **USB 2.0 to SATA/IDE Adapter** (about $20) can turn an old drive into an external drive for use on your new PC.

But as you know, the home network is your slickest alternative—once you have it set up right. Go into the System control panel, click *Advanced system settings*, and then go to the *Computer Name* tab under *System Properties*. Click the *Change* button. Make sure the new computer has a name that's unique among the computers in the house, and that the Workgroup name is exactly the same for all the computers in the house. Otherwise, they can't see each other to share. Go into your software firewall and check that it's open to other PCs on your network (and that the firewalls on the other computers are open to the new PC, as well). Find the folder containing the files you want to share, right-click on it to get *Properties*, and tell Windows to share the folder. On Vista systems, the folder should now show up in the Network and Sharing Center when you click *View computers and devices*.

You might be tempted to buy a migration utility to move your old stuff. Or you might succumb to Microsoft's pitch for a special USB cable (from Belkin) to use with its Easy Transfer utility. Neither option is worth the money, especially for an action you'll likely take only once. An option that might be a good buy is a cable with software that lets it do much more, like IOGear's **USB Laptop KVM Switch** (*www.iogear.com*). It not only handles file transfers between computers but lets you switch instantly

from PC to PC, using a single monitor and keyboard/mouse. At $129 it's not cheap, but it is one way to ensure that both your old and your new computers remain useful.

7. Prep for Data Backup

No doubt you've heard this a zillion times, but in case this advice hasn't taken, I'll repeat: A simple backup regime is great for peace of mind. Online backup services like **MozyHome** (*www.mozy.com/home*) make it painless. You can start with a free account that stores up to 2GB of data. Perfect for your unfinished novel or other small projects. (You can get unlimited online storage with Mozy for $4.95 per month.)

If you've got multiple machines, consider one of the many new services that synchronize files between computers and add online backup in the middle, so you can get to files when you're at someone else's PC. **Dropbox** (*www.getdropbox.com*) is an up-and-comer that supports sync between multiple Windows, Mac, and even Linux PCs. Basic service is free and gives you 2 gigs of online storage; it costs $9.99 a month to get 50 gigs.

Local backup of your data gives you more control. One option is to partition your hard drive into multiple drives—C: for the system and programs, D: for data, E: for items you don't need to back up. That way, you can tell Vista's built-in **Backup and Restore Center** control panel to look at one drive only. Buy an external hard drive that's at least 1.5 times larger than the data partition (a 500GB external drive to back up your 300GB partition, for example) as a target drive. Now even huge video and photo files are no big deal to back up. Simply put them in the same spot every time—always "D: for data" (for example)—and let the software do its job.

8. Geek Out Firefox

Firefox is our *PC Magazine* Editors' Choice Web browser for good reason. It's fast, friendly, and infinitely configurable. Sure, you could go your whole life using Firefox and never change a thing, but once you install a few key extensions, you'll wonder how you ever lived with Internet Explorer or how Google's Chrome will ever measure up.

Here are some key add-ons worth trying (in the Firefox menu bar, go to *Tools*, then *Add-ons*, and search for them in the *Get Add-ons* tab):

- **Cooliris:** Turns browsing into a full-screen 3D experience.
- **DownThemAll!:** Download manager handles multiple downloads at once.
- **FireFTP:** If you need an FTP client, get one that stays within Firefox.
- **Foxmarks:** If you use multiple PCs, you can synchronize the bookmarks on each one.
- **Greasemonkey:** Using scripts from UserScripts.org, it can change the look

Easy, Mac

One thing you don't have to worry about with a Macintosh computer is crapware. Companies like Dell or HP can justify lame extras by claiming they provide functions that are unavailable (or insufficient) in Windows. The MacOS and hardware is a closed system controlled by Apple, a company that prides itself on user experience. The Apple folks are not about to sully that rep with a bunch of third-party junk; they'd have no one to blame but themselves. Of course, Apple will gladly sell you some extras, like the iWork and iLife suites.

MacOS 10.5 (aka Leopard) comes with an application firewall to control any connections made by your software to the Internet. You can find it in the System Preferences folder to make adjustments. As for antivirus software, you can buy it (both Symantec and McAfee sell such packages), but Apple's market share is still small enough that the Mac is seldom a target of malware.

Migrating files from old Mac to new is a breeze. In the Applications/Utilities folder, find the Migration Assistant.

TO MAC AND BACK Drag files from Windows to Mac with Kensington's cable.

X FACTOR Mac OS X includes a firewall and a migration utility.

Hook two Macs together with a Firewire cable and run the Assistant. The settings from the older Mac (with Mac OS 10.4.10 or later) will transfer to the new system with Leopard. That includes data like browser bookmarks and user profiles. It doesn't include apps that come with the Mac OS; Apple assumes the new Mac will have the latest Safari, for example. If you've got a modern MacBook, including the Firewire-free MacBook Air, you can migrate files over the wireless network.

If you're going from Mac to Windows, or vice versa, you can always fall back on a USB drive to move files, but you're on your own finding the data you want to transfer. And it's slow. A faster method might be the **Media Sharing Cable for PC and Mac** from Kensington. This $60 cable allows you to drag and drop files between systems—very handy for really big media. If your file sizes are modest, **Microsoft Live Foldershare** (*www.foldershare.com*) does real-time synchronization between folders on multiple Windows and Mac OS systems.

and feel of almost any site.

- **IE Tab:** If you absolutely must view a site in Internet Explorer, do it within a Firefox tab.
- **ScribeFire:** If you blog, ScribeFire makes it easier.
- **Tab Mix Plus:** Take complete control of the tabs in Firefox.
- **Update Notifier:** Never let your Firefox extensions go un-updated again.

If you used Firefox on your old computer, you probably want the same settings, bookmarks, and extensions. Back up the old Firefox using freeware **MozBackup** (*mozbackup.jasnapaka.com*), save the file to your new PC, and use MozBackup to restore. It also works with **Thunderbird** to back up e-mail. (For our favorite hidden Firefox features, see page 75.)

You have your own list of favorite utilities, but we recommend installing these programs no matter what browser you use: **QuickTime, Adobe Flash, Microsoft Silverlight, Windows Media Player,** and a PDF reader (try the free **Foxit Reader** from *www.foxitsoftware.com;* it's faster and smaller than Adobe Reader).

9. Place Your Programs

This is one area where you're on your own: We can't decide what software you want or need. But if you're configuring this new machine for someone else, remember that no PC is complete without at least an office suite, a photo-editing tool, a media manager, and something for e-mail. And there are free alternatives for almost any program you might need; see our no-cost favorites at *go.pcmag.com/bestfree08*.

If you want the same setup as your previous machine, check the Program Files folder on the C: drive of your old PC. Make a listing of the programs there using an online word processor like Google Docs so you can access the list from any computer. Keep in mind that you'll also want to carry over the settings and log-in info for software like e-mail and IM clients.

Gather those monstrosities known as registration codes for your software. Record them somewhere permanent and accessible. Write them on the discs themselves or keep them in a notebook, or whatever method you have for preserving data you know you will need again.

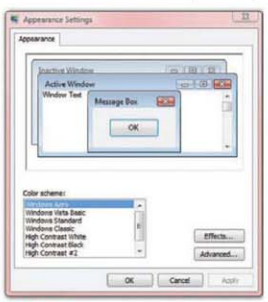
Some software is limited to a certain number of machines. For example, **iTunes** will play only songs you've bought online on up to five PCs. So check that the software is de-authorized on the old PC if you won't be using it there. Uninstalling might be all it takes.

CLEAN SCREEN Turn off the Sidebar and save some valuable desktop space.

10. Tune-Up Time

Windows Vista on the right system is very fast, but first you have to decide: Do you want a system that's fast—or good-looking? Here are a few steps to tweak your new PC's performance in favor of speed, not appearance:

- Set the desktop to a plain, one-color background. Big photographic wallpaper can slow load time.
- If you're not into desktop widgets along the screen's edge, or maybe prefer those from another source (like Google), turn off **Windows Sidebar.** It takes up space on your desktop. Go to the Windows Sidebar Properties control panel and deselect *Start Sidebar when Windows starts.*
- Aero is the name for the fancy graphics interface in Vista that delivers things like transparency in windows. Cool as it looks, Aero can slow down your system. In the Personalization control panel, select *Windows Color and Appearance.* In the next window, click *Open classic appearance properties.* Change the color scheme to something else, such as Windows Standard, and click *Effects* to turn off menu shadows and the ability to see windows as you drag them.
- Go to the System control panel, click *System Protection,* and on the *Advanced* tab, click the button in the *Performance* box. If you turn off every option under *Visual Effects* (like animated controls, fading menus, and shadows under your mouse cursor), it should speed things up.
- The network icon in the system tray



SIMPLIFY! Get a boost by choosing an older look instead of Vista's swanky Aero.

What to Do with Your Old PC

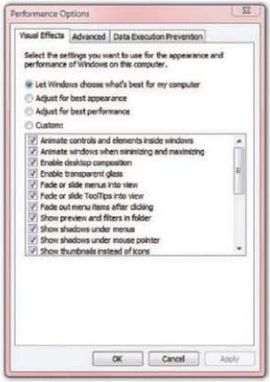
You can probably put your old PC to some kind of good use. But sometimes, you want that old dinosaur out of the house. Here are some options to consider:

1. Revitalize it. You may think that ancient laptop is too slow for use, but try installing the tiny, consumer-friendly, Linux-based operating system gOS 3 Gadgets (*www.thinkgos.com*). It may turn that geezer into the perfect Web-surfing speed demon for your least PC-literate family member.

2. Give it away. Whether you hand it down to family or to a local charity, there's got to be someone clamoring for your old, working PC. If you can't find anyone, check *www.freecycle.org* for a mailing list of people in a city near you who love free stuff. Your junk is their gold.

3. Pick a dump spot. Find a PC Donation center in your area that will make sure PC toxins don't end up in a landfill. Search **Earth 911** (*earth911.org*) or **MyGreenElectronics.org** for places that will dispose of electronics responsibly.

No matter what, sanitize that hard drive before you pass it on. At the very least, format the drive and reinstall the operating system before recycling the old PC. If you're very paranoid, keep in mind that formatting isn't enough to be 100 percent certain data is completely unrecoverable. Specialty software DBAN (*sourceforge.net/projects/dban*) will do the job free, running from a bootable CD-ROM, but it can take hours and hours to kill the data. And then there's the Swiss cheese option: Take the drive out to the workshop and drill holes through it.



GLITZ VS. SPEED Turn off effects like animated controls to accelerate operations.

shows a subtle animation to indicate you're online; right-click and select "Turn off activity animation" to stop it—unless you like incessant reminders that you're online.

• If you've got a very fast USB thumb drive, insert it and activate Windows ReadyBoost. This cache can help a bit with performance while the drive is inserted.

• Adjust the power settings, especially if you've got a laptop that is unplugged while in use. The "high performance" presets will drain juice faster.

Visit **PCMag.com** and **ExtremeTech.com** for many more tips on speeding up Vista and your PC.

11. Review Hardware

Starting out with a new PC is the perfect opportunity to reassess the hardware attached to the old PC. Before you start plugging things in, consider carefully how much you need them. Do you really need that old flatbed scanner now that the pictures you take are digital? For some, the answer will be no. Same with items like ancient USB hubs (you probably have more ports on your new box, and you don't want a hub that doesn't support USB 2.0) and low-capacity portable hard drives.

Old hardware moved to a new PC means you need the latest drivers. Hit the manufacturer's Web site for your scanner, printer, camera, media player, and so on, and download what you need. **DriverMax** (*www.innovative-sol.com*) can back up drivers for when you need them later.

That mouse and keyboard that came with your new system should be considered suspect. PC vendors aren't known for including highly ergonomic input devices with their commodity systems. Consider instead the **Microsoft Wireless Laser Desktop 7000,** which comes with a rechargeable wireless mouse and ergonomic keyboard. Consider them even if your new PC is a laptop, especially one you don't move around much. Your wrists will thank you later.

12. Register Everything

It's no guarantee of great technical support, but if you register your PC with the manufacturer, as well as the software and peripherals with their respective creators, you stand a better chance of being recognized when the time does come to call for help—and you know that time will come. Getting a vendor to honor a warranty might depend on knowing when you bought or received the product.

Registering online is relatively painless; you're on the Web anyway, so you might as well. One downside is that registration can also put your name on endless mailing lists, so if that bothers you, deselect that option when signing up. Keep in mind that it's smart to be registered in case there's a recall—you don't want to be the only person walking around with a laptop battery that might catch on fire, do you?□

KEYS TO HAPPINESS Replace a flimsy keyboard/mouse with an ergonomic one.

Recycling Old Hardware

Some manufacturers will ship you a recycle kit for your old PC when they send you a new one. Some retailers have trade-in programs that will take any product with any brand name. Here's a quick guide, but be sure to consult with the manufacturer or retailer when you buy your new machine.

Dell recycles any older product—PCs, displays, scanners, and printers—with the Dell brand (and a unique Dell identifier) free. You can also recycle printers, toner cartridges, and inkjet cartridges when you buy new ones. The recycle kit is a free option with any new purchase at *Dell.com*.

HP offers free recycling of inkjet and toner cartridges. The printer giant will charge you for other items, providing a quote (see *https://warp1.external.hp.com/recycle*) when you describe the hardware. Cost is usually from $10 to $35.

Apple recycles iPods and cellular phones for free. Anyone in the U.S. buying a new Mac or Apple display can recycle an old one through the company; just opt in while making your online purchase.

Gateway's Trade-in or Recycle Program offers cash for your "old technology," or will recycle it if it's deemed worthless. Trade-ins require a special account with Gateway; you get a check in the mail after you send the PC. You can also trade in iPods, GPS systems, camcorders, game consoles, and handhelds. Recycling is handled via Dealtree.

Lenovo provides free recycling for anything with a Lenovo logo (and some other logos) through the Eco Take Back partnership (visit *lenovo.ecotakeback.com*).

Staples will accept any kind of technology item, purchased at its stores or not, and charges a $10 fee for each. Occasionally (during Earth Week, for example), Staples offers totally free electronics recycling.

Circuit City works with EZtradein.com to determine how much old computers and iPods are worth. Create an account at *cc.eztradein.com*, send in the device, and get a Circuit City gift card in return.

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Solutions

PROBLEMS SOLVED THIS ISSUE

78 Ask the Experts
- Get rid of the Win XP setup option on boot-up
- Move Sent mail to your Inbox
- Choose one graphics card, not two
- Change folder-sharing security settings
- Determine how your graphics memory is being used

80 Office
- Unleash nine hidden Outlook tricks

82 Security
- Learn to be your own support tech

83 Tips
- Print pages in the right order
- Force-quit iPhone apps
- Use Symbian keyboard shortcuts
- Open Excel workbooks in separate windows
- Find an open application or file in Windows easily
- Save valuable "scraps" in XP

Make the Most of Firefox 3

Unleash the power of Mozilla's latest browser version with these features.

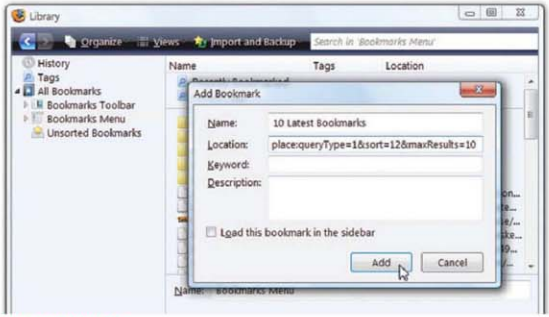
By Logan Kugler

The latest version of Mozilla's popular open-source browser enjoyed one of the most successful launches in software history, with a record-setting 8.2 million downloads the first day it was available. Because users can drastically expand the browser's functions using plug-in extensions and Greasemonkey scripts, many of Firefox 3's built-in features are overlooked. Here are seven of our favorites.

1. DUPLICATE TABS WITH DRAG-AND-DROP. Duplicating tabs is a piece of cake: Simply hold the Ctrl key while dragging the tab you want to duplicate to an empty space on the tab bar.

2. MINIMIZE THE TOOLBAR. Free up a little extra screen real estate by getting rid of the big, round "Back" button and replacing it with a more streamlined control. Right-click the toolbar, choose *Customize*, and select *Use small icons*. The new controls are perfectly functional but smaller, allowing the toolbar to shrink and leaving more room for viewing sites.

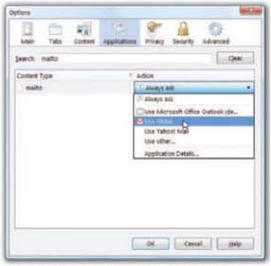
3. USE SMART BOOKMARKS. Smart bookmarks are live bookmarks that don't just refer to particular sites but actually generate live lists of sites according to parameters you define. For example, you might have a smart bookmark that lists the 10 sites you visit most often, or the last 20 sites you've visited with a particular keyword in their title.



LIVE BOOKMARKS Create bookmark lists such as the 10 sites you visit most often.

To create a smart bookmark, select *Organize Bookmarks* from Firefox's *Bookmarks* menu. In the window that opens, select *Bookmarks Menu* in the left-hand pane, then click *Organize* in the toolbar at the top and *New Bookmark* in the drop-down menu. Give your smart bookmark a descriptive name like "10 Most Recent Bookmarks." In the *Location* field, you enter a line of code telling the smart bookmark what to do. For the ten most-visited sites, you'd enter: *place:queryType=1&sort=12&maxResults=10*. There are dozens of parameters you can use; Mozilla's developer site includes a list of commands (*developer.mozilla.org/en/Places_query_uris*) you can use in smart bookmarks. Here are a couple of the most useful:

- The ten sites you've visited most recently (some installations of Firefox to come with this smart bookmark already in place on the Bookmarks toolbar): *place:queryType=0&sort=8&maxResults=10*.



GMAIL BY DEFAULT You can change your default e-mail account in Firefox.

• The ten most-visited sites with some search term in them: *place:queryType=0&sort=8&maxResults=10&terms=*keyword (replace "keyword" with your desired term).

4. SEND E-MAIL VIA YAHOO! MAIL OR GMAIL BY DEFAULT. Normally, clicking on an e-mail address on a Web page will open up a new e-mail using your default e-mail program. If you'd rather use Yahoo! Mail, open up *Options* under Firefox's *Tools* menu, select the *Applications* tab, and scroll down to the *mailto:* entry. Select *Use Yahoo! Mail* and click *OK*. Gmail is not included as a built-in option in every installation of Firefox, but if yours doesn't have it, you can add Gmail easily enough. Skip the *Options* dialogs for now and instead type *about:config* in Firefox's address bar and hit Enter. In the Filter field, type *gecko.handlerServiceAllowRegisterFromDifferentHost*. Actually, you can simply type *gecko* and find the entry in the filtered list. Double-click the *gecko.handlerServiceAllowRegisterFromDifferentHost* entry to change it to *True*.

Next, cut and paste this line into the address bar: *javascript:window.navigator.registerProtocolHandler("mailto","https://mail.google.com/mail/?extsrc=mailto&url=%s","Gmail")*, and hit Enter.

A message will appear at the top of the browser window asking if you want to add Gmail as an application. Now, repeat the process above for choosing Yahoo! Mail, but select the new *Use Gmail* option instead.

5. CHANGE THE BEHAVIOR OF THE AWESOME BAR. Mozilla has dubbed Firefox 3's address bar the "Awesome Bar" because of the useful suggestions it makes as you type. By default, the Awesome Bar bases its recommendations on your recent history, pages you've tagged, and your bookmarks. You can change the way the Awesome Bar acts in the configuration page. Open *about:config* and change the following values, depending on the features you want:

• To disable the Awesome Bar entirely and revert to Firefox 2–like functionality, change the value of *browser.urlbar.maxRichResults* to -1.

• To allow the Awesome Bar to recommend only sites whose address you've typed directly into the address bar, change *browser.urlbar.matchonlytyped* to TRUE.

• To remove unvisited bookmarks from the pool of recommendations, change *places.frecency.unvisitedBookmarkBonus* to 0 (zero).

• To remove all bookmarks from the Awesome Bar, change *both places.frecency.unvisitedBookmarkBonus* and *places.frecency.bookmarkVisitBonus* to 0 (zero).

6. SEARCH ANY SITE FROM THE ADDRESS BAR WITH SMART KEYWORDS. The smart keyword function allows you to create searches for any site with a search engine, and trigger the search from the address bar using your choice of keyword. For example, you could create a smart keyword *me* to search the archives of your own site. If you wanted to see if you'd ever written about cat juggling, you'd type *me cat juggling* into the address bar and Firefox would return the results from your own site's search page. Visit the site you want to search and right-click its search box, selecting *Add a keyword for this search*. In the window that pops up, add a short description of the search and enter a short, memorable keyword that you'll use to trigger it. For example, to create a smart keyword for PCMag.com, I visited the home page, right-clicked the search field, opened the smart keyword window, titled my search *PCMag.com*, and then entered the keyword *pc* as my search keyword. Now, if I want to search our site for something—say, laser printers—I just type *pc laser printers* into Firefox's address bar and the search is run.

7. VIEW YOUR SAVED PASSWORDS FOR ANY PAGE. To view the passwords associated with any site, go to the log-in page and right-click anywhere on the page. Select *View Page Info*, then the *Security* tab. Click *View Saved Passwords*. Another window will pop up showing the usernames associated with that site. Click *Show Passwords* to see the passwords for each username.

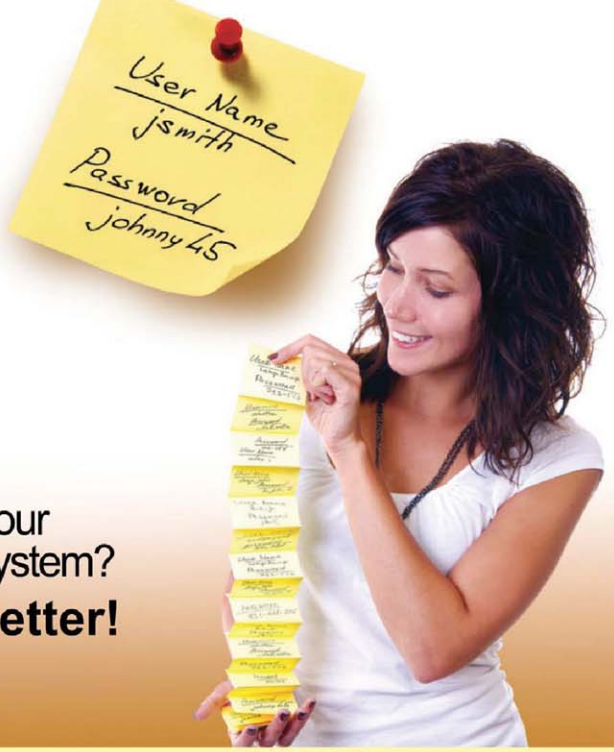
If you want to view *all* of your saved usernames and passwords, open *Options* under the *Tools* menu and select the *Security* tab. Click *Saved Passwords* to open a list of every site you've ever saved a password for. Again, click *View Passwords* and the list will display all of your passwords. You can't print this list, but you can just as easily take screenshots if you want to print out your passwords for safekeeping. You're probably wondering: Isn't this a huge security hole? Why, yes, it is. Knowing how easy it is for anyone with access to your PC to view all your passwords, maybe you'd like to password-protect your passwords. In the *Options* | *Security* tab, click *Use a master password* and enter a password. Now this password will have to be entered anytime you or anyone else tries to view saved passwords. You'll be asked to enter your master password every time you open Firefox; without it, Firefox won't automatically enter saved passwords for you. Make sure you don't forget this one! □

QUICKER SITE SEARCHES You can create smart keywords that allow you to search sites from Firefox's address bar.

OVER 100 5 STAR RATINGS

PC MAGAZINE EDITORS' CHOICE

May 24, 2005
RoboForm Pro 6.3



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Ask the Experts

Unwanted Win XP Setup at Boot Time

Q *My computer has Windows XP installed. During a period of computer constipation I decided to reinstall XP. After the file copying from CD to hard drive had begun, I changed my mind and aborted the installation process. Since then, a panel appears on boot-up showing two operating systems, Microsoft Windows XP and Microsoft Windows XP Setup, with the setup one being the default. If I don't watch the monitor during start-up and select the regular OS, the setup one begins, then hangs because the Setup CD and balance of the installation files are missing. So I end up getting a blue screen with the option of pressing F3 to abort the setup and restart the computer. Is there any way, short of actually reinstalling Windows, that I can get rid of that setup option on start-up and just have the regular Win XP start-up?—Charlie Hull*

A Sure! Click *Start*, choose *Run*, and enter *msconfig*. Click the *BOOT.INI* tab. You'll see that there are two lines under *[operating systems]*. First try clicking the *Check All Boot Paths* button; this might remove the Setup option automatically, depending on how incomplete the setup is. If that doesn't do it, click the Microsoft Windows XP line, click the *Set As Default* button, and set the timeout to 0 seconds. Now the system will boot directly into regular XP without that annoying prompt.—*Neil J. Rubenking*

Automatically Move Sent Mail to Outlook Inbox

Q *I need to force all sent messages to be stored in the Inbox folder. I attempted to create a rule but could not find the right "expression." Please help.—Ricardo Vidrio*

A Outlook's message rule system can definitely handle this task. In addition to putting your sent messages into the Inbox, you'll probably want to tag them with a Category, so there will be no confusing these with actual new messages. Here are the steps that you should take if you're using Outlook 2007:

Select *Rules and Alerts* from the *Tools* menu.

Click the *New Rule* button to open the Rules Wizard. (In previous versions of Outlook you'd go straight to the Rules Wizard from the *Tools* menu.)

Near the bottom click *Check messages after sending*. Click *Next*.

Click *Next* again without checking any condition.

Click *Yes* to confirm that this rule applies to all messages.

Check the box *Move a copy to the specified folder*.

MOVE MAIL: Force sent messages into your inbox using Outlook's Rules Wizard.

Click the word *specified* and select *Inbox*.

Check the box *Assign it to the category category*.

Click the underlined word *category* and select or create a category.

Check the box *Stop processing other rules*.

Click *Next* and *Next* again.

Name the rule and click *Finish*.

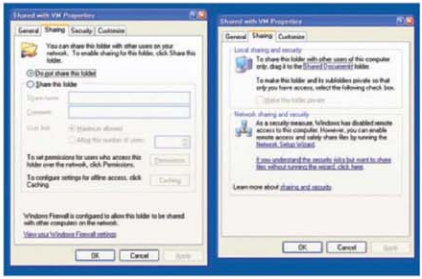
From now on each message you send will be copied to the Inbox and marked with the category you specified.—*NJR*

Double Up on Graphics Cards?

Q *I was about to build a system with two 512MB nVidia GeForce 8800 GT cards in SLI mode, but recently nVidia released the GeForce GTX 260 and GTX 280. Now that has me wondering: What will be a better value for the money, two 8800GTs or one GTX 260? What's your take on this?—Umar*

A I'm generally not much of a fan of dual-GPU solutions, particularly if you can get a powerful-enough single-GPU card that will do the job. Given recent price drops, I'd go with a single GTX 260 over a pair of

RESET OS DEFAULT: If an aborted OS reinstall gets in the way at start-up, use the System Configuration Utility to return your regular OS to default status.



ADD BACK THE SECURITY TAB: To make sure all the tabs are visible in your folder-sharing security settings, uncheck *Simple File Sharing*.

8800 GTs. Fewer headaches, good dual-display support, and great game performance.—*Loyd Case*

Missing Security Tab in XP

Q *I have a question about folder-sharing security settings. There's a difference between my two PCs in the window that I see after right-clicking on a folder to click on* Sharing and Security*... One PC has the usual three tabs, the other has an additional* Security *tab. How can I change the first to make it display the same as the second?—Eduardo Ojeda*

A The system with fewer tabs is using XP's "Simple File Sharing." Microsoft recommends it; I don't. In Windows Explorer choose *Tools* | *Folder Options* from the menu. Click the *View* tab. At the bottom find *Use Simple File Sharing (Recommended)* and uncheck it. Besides the addition of the *Security* tab, you'll find that the *Sharing* tab is significantly different with this feature turned off. Note that in its infinite wisdom Microsoft has decided that XP Home users aren't allowed to turn off this feature—go figure!—*NJR*

Graphics Memory Not Registering?

Q *I bought a Compaq Presario SR1917 Media Center PC running an AMD 3500 64-bit CPU. It features 2.5 gigs of RAM, a 200GB hard drive, and 256MB integrated nVidia 6150 graphics, and it's running the Vista Home Premium OS.*

My problem is that when I run a performance check it says I have only 64MB of video graphics. Can you explain why this is so, and what I can do to resolve this problem?—Jamie

A I don't have specifics on your Compaq, but I wouldn't worry about it. Integrated graphics chips don't always have their own dedicated memory, as discrete graphics cards do. Instead, they often borrow a portion of system memory for their own use. And many integrated GPUs support dynamically allocated memory when running in 3D mode. That is, when a game or other app that uses 3D acceleration kicks in, the GPU grabs the memory it needs, up to the maximum (256MB in your case).

However, some older motherboards with integrated graphics force you to do the memory allocation in the BIOS setup. If that's true in your case, you can enter the BIOS setup and manually set it to use more of your system memory—the catch is, that memory will not be available for normal applications.—*LC*

NEED ANSWERS? *PC Magazine* software expert Neil J. Rubenking and ExtremeTech.com editor Loyd Case tackle readers' questions in each issue. Send your toughest to *askneil@ziffdavis.com* or *askloyd@ziffdavis.com*.

If you purchased an aftermarket Samsung- or Samsung PLEOMAX-branded Hard Disk Drive, you could be eligible for benefits from a class action settlement.

WHO IS AFFECTED?

All persons and entities in the United States who purchased an aftermarket Samsung- or Samsung PLEOMAX-branded HDD from September 8, 2002 through October 15, 2008. Purchasers must have resided in the United States at the time of purchase; purchased the HDD new (i.e., not second hand) in the United States from an entity that regularly sells/sold such devices; and not purchased the HDD for resale.

WHAT IS THE ACTION ABOUT?

The lawsuit alleges that Samsung violated California law in connection with the packaging, labeling, marketing, promotion and/or advertisement of HDDs by allegedly failing to disclose that storage capacities are based on the decimal standard, and that accessible capacity may vary depending on disk partitioning and/or formatting, internal operational data storage requirements, and environmental operating conditions. Samsung denies these allegations. The settlement is not an admission of wrongdoing or an indication that any law was violated.

WHAT CAN YOU GET FROM THE SETTLEMENT?

If the Court grants final approval of the proposed settlement, Samsung will provide Class Members who submit valid, timely Claim Forms with partial refunds of 15% of the retail purchase price of each Qualifying HDD, excluding taxes and including any discounts at the point of sale.

HOW DO YOU GET A PAYMENT?

A detailed Notice and Claim Form packet contains everything you need. You may get the Notice and Claim Form by visiting www.HDDsettlement.com or by writing to:

In re Samsung HDD Settlement
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P.O. Box 9236
Dublin, OH 43017-4636

Claim forms are due by March 23, 2009. To submit a claim, you will need to provide an original proof of purchase or the serial number of each Qualifying HDD and a sworn statement affirming purchase details. No duplicate claims will be permitted.

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If you do not want payment and you do not want to be legally bound by the settlement, you must exclude yourself by **February 5, 2009**, or you will be unable to sue Samsung regarding the legal claims in this case. Class Members may object to the settlement by **February 5, 2009**. The detailed Notice explains how to exclude yourself or object. The Santa Clara County Superior Court will hold a hearing in Department 17C, 191 North 1st Street, San Jose, California 95113 in this case (*Tao v. Samsung Semiconductor, Inc.*, Case No. 1-06-CV-070765) on **February 27, 2009 at 9:00 a.m.**, to consider whether to approve the settlement and to award an incentive of $1,500 to plaintiff, and $200,000 to Class Counsel for attorneys' fees and costs. Payment of attorneys' fees will not affect Class Member benefits. You may appear at the hearing, but you are not required to. For more details, you may call Class Counsel at (310) 208-2800 or (800) 437-7918, go to www.HDDsettlement.com, or write to the Independent Claims Administrator at the address above. Questions should not be directed to the Court.

www.HDDsettlement.com

Nine Things You Didn't Know You Could Do in Outlook

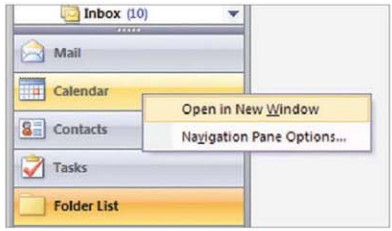
Make e-mailing less of a chore by taking advantage of these handy features. *By Edward Mendelson*

1. OPEN CALENDAR, CONTACTS, OR TASK LIST IN A SEPARATE WINDOW Tired of clicking on the navigation buttons every time you want to switch between your Inbox and Calendar? Right-click on any of the Navigation buttons and choose *Open in a New Window*, and you can keep your Calendar or Contacts open in windows of their own. They'll stay open while you deal with messages; simply use Alt-Tab to navigate between the windows.

2. DISPLAY MULTIPLE DATES IN THE CALENDAR You can display multiple, noncontiguous dates in your Calendar by going to the small monthly calendar display and Ctrl-clicking on the dates you want to view. Each date you Ctrl-click will appear as a column in the main Calendar display. You can also display any continuous range of dates by dragging the mouse over a series of dates on the monthly calendar.

3. CUSTOMIZE THE FLAG AND CATEGORY ICONS You probably already use the flag icon in the Inbox message list to remind yourself of messages that you'll need to look at in the future; or perhaps you use the category icon to help organize your mail. (The flag icon appears at the far right of each entry in Outlook's message list; the category icon is the rounded square just to the left of the flag icon.) You can specify which color flag or which color category will appear by default when you click on those icons. Simply right-click on any flag or category icon, choose *Set Quick Click...*, and select the category or flag that you want to use as the default.

4. USE SHORTHAND ABBREVIATIONS FOR DATES AND TIME Outlook's calendar understands both plain English text and terse abbreviations in its *Start Time* and *End Time* fields, making it easier to book appointments. For example, instead of typing a date, you can simply type "next Tue" or "next month" and the Calendar will insert the correct date. ("Next month" becomes the date one month from today.)



MULTIPLE WINDOWS You can view your Inbox, Calendar, and Contacts in separate windows.

In the time field, you can enter "now" or an abbreviated time like "4p," which Outlook will expand to "4:00 p.m." The same plain text shorthand also works in the *Scheduling* window, which means that you can go to the *Appointment Recurrence* dialog and enter "next Thursday" as the Start time, and Outlook will specify the right date.

5. MODIFY OUTLOOK'S MENUS Do you want the commands you use most often to appear at the top of Outlook's menus? In Outlook 2007, choose *Tools* | *Customize*, then the *Commands* tab, and click *Rearrange Commands...*. In the dialog that opens you can move menu items up and down in the list, delete items you don't use, and add ones that you want. You can also save time by specifying "accelerator keys" that will launch a menu item when you type a single letter while that menu is open. To change or create an accelerator key for a menu item, click *Modify Selection* in the *Rearrange Commands* dialog, and insert an ampersand (&) immediately before the letter in the menu item that you've chosen to serve as the accelerator key.

6. ADD HOLIDAYS TO YOUR OUTLOOK CALENDAR If your company observes religious holidays, or observes the same holidays honored in a head office in another country, you can add those holidays to the Outlook calendar. Use *Tools* | *Options*; on the *Preferences* tab, click *Calendar Options...*, then click *Add Holidays...*, and place check marks next to the national or religious holidays you want marked in your calendar.

7. INSERT CALENDAR DATA INTO YOUR E-MAIL If your e-mail account is on a Microsoft Exchange server and you're writing to someone else who uses the same Exchange server, you can insert data from your calendar into an e-mail. In the message-editing window, go to the Message ribbon (selected by default), choose *Calendar* from the Include group, and specify the time period and level of detail that you want to include. This option isn't available if your account is on a POP or IMAP server.

8. ADD A CONTACT FROM AN E-MAIL MESSAGE To add the sender of an e-mail message to your Contacts, go to the message itself (not the entry in the message list), right-click on the sender's name, and choose *Add to Outlook Contacts*.

9. GET RID OF UNWANTED ADD-INS Keep Outlook 2007 sleek and fast by removing add-ins that other software installs with asking your permission. Go to *Tools* | *Trust Center...* then click on *Add-ins*, find the *Manage:* item at the foot of the window, make sure that *COM Add-ins* is the current item, and click on *Go...*. From the *COM Add-ins* dialog you can disable an item by clearing its check box, or remove it entirely by clicking *Remove*.□

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Troubleshoot Like a Pro

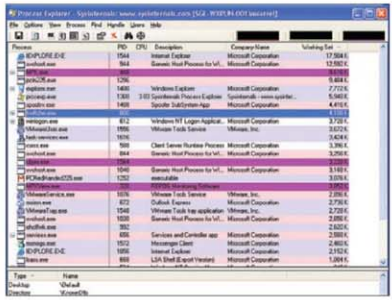
Rarely does a call to tech support "teach a man to fish." Heck, often enough, you don't even get a fish out of it. Why not learn to be your own support tech? *By Matthew D. Sarrel*

It happens to hundreds of people every day. You're at your PC, and seemingly without any cause, it slows to the point of being unusable. Maybe the hard drive light is lit constantly, maybe not. You reboot and the same thing happens. What could it be?

Many users, at this point, make the dreaded phone call to tech support and inevitably get sucked into the blame game miasma. Microsoft says it's a conflict with Symantec; Symantec says it's a hardware issue and to call Dell; Dell says to call Microsoft. And all of them ask the same questions: Is the PC plugged in? Did you reboot? Have you logged in successfully? Did you boot in safe mode?

Fortunately, there's a solution: a free utility by Sysinternals called Process Explorer (*technet.microsoft.com/en-us/sysinternals/bb896653.aspx*) that's extremely helpful. Think of it as a pumped-up Windows Task Manager, examining processes to see which are stealing CPU cycles and detecting which process has which file open. It also tells you about the process chain, or which processes depend on each other to run. Process Explorer is made up of two windows. The top window shows a list of currently active processes, their dependencies, properties, CPU history, and memory usage. The bottom window provides more information about a selected process or search results.

Once you get familiar with Process Explorer, it will be much easier to figure out what's happening on your Windows PC. It won't fix errors on its own, but it will point you in the right direction.



PROCESS EXPLORER The top window of Process Explorer shows a list of currently active processes, their dependencies, properties, CPU history, and memory usage.

Tips for Using Process Explorer

1. Sort by CPU usage to identify processes that may be misbehaving. You can dig down to individual threads to try to figure out why the process has become a hog. You can also suspend a process to judge whether it is the culprit. If it isn't, resume the process and keep looking.

2. Get to know what is running on your PC. The first time you launch Process Explorer, click *View*, then *Select Columns*, and make sure that *Process Name* and *Description* are checked, then check the radio boxes to add *Company Name* and *Command Line*. Click the *DLL* tab next and check *Path*; then select the *Process Memory* tab and check *Working Set Size* before clicking *OK*. To configure the lower pane, click *View* and make sure that *Show Lower Pane* is checked; then mouse over *Lower Pane View* and select *DLLs*.

3. The following are not suspicious and should be ignored: smss.exe, winlogon.exe, services.exe, alg.exe, and lsass.exe.

These, however, are suspicious:

- Any process running from a temporary directory (shown in the Command Line column) such as C:\Temp or C:\Windows\Temp, or a running process referencing a DLL in a temp directory.
- Processes with nonsensical names. This is not always a helpful guideline, but if anything looks out of the ordinary (and only your experience can guide you), then you should look into it. For example, ubyw.exe (a Trojan downloader) seems a little nonsensical to me, as does ehcftwk .exe—which seems especially suspicious because it was spawned by kwtfche.exe, aka CommonName. (CommonName is a spyware program that assigns random names to the EXE files it deploys, which is why you won't find their names or advice for dealing with them via a Web search.)
- Processes that are typically not bad but can be used as a launchpad by malware. For example, processes such as svchost .exe and rundll32.exe can be used to load other processes. You can follow this chain by looking at the Command Line column to determine the exact application that is using these libraries to load. Anything suspiciously named or located in a temp directory warrants further analysis.

4. Look at all the other applications. Everything should have a description, a company name, and a command line entry, and should make some sense. For example, Winword.exe is made by Microsoft Corp. and runs in C:\Program Files\Microsoft Office\Office12\WINWORD.EXE.

5. Right-click on any suspicious entries and choose *Properties*. Does anything there look familiar or provide some key to what the process does?

6. If you still think it's suspicious, right-click and select *Search Online*. You can identify many threats directly from this search, and it's also a good way to find removal applications or information.

7. You can also right-click (unless it's a system-critical process, as mentioned above) and select *Suspend*. If it does suspend, that's good. If not, you may be onto something. Right-click again and select *Kill Process Tree* and then *Kill Process*. Associated processes should turn red and die. You may have to repeat these steps. □

TechTips

Useful tidbits from *PC Magazine* editorial staff, Labs analysts, and readers

PRINTERS

Printing in the Right Order

Most laser printers print pages so they emerge face down. For a multipage document, this puts the pages in the right order when you turn over the stack. Most inkjets print pages face up, which will normally put the first page on the bottom of the stack, so you have to reorder the pages. A few inkjets default to reversing the print order so that the last page prints first, the first page prints last, and everything's in the right order. For those inkjets whose drivers lack a reverse-print feature, however, some programs also can print in reverse order.

In Word 2003, for example, you can choose *Tools | Options*, then the *Print* tab, and add a check to the *Reverse print order* check box. In Word 2007, you can choose the *Office* button, then *Word Options*, and pick the Advanced options in the pane to the left of the dialog box. Then scroll down to the Print options, and check the box named *Print pages in reverse order*.

An alternative approach for Word is to tell the program to print the range in reverse order. To print a 24-page file, for example, you can leave Word's options alone and instead choose *File | Print*, and, in the Pages text box, tell Word to print pages 24-1.

This alternative approach may also work for some programs that lack a reverse-print option but offer the option to print a range of pages. Don't try using both approaches at the same time, however, or use either approach with a driver that also reverses the order. Just as two negatives equal a positive, two commands to reverse order will cancel each other out. *—M. David Stone*

REVERSE PRINTING You can set Word 2007 to print pages on your inkjet from last to first, so your stack is in the correct order.

The Best Symbian Keyboard Shortcuts

Take charge of your Symbian S60-powered handset with the following keyboard tips:

1. Cycle between numeric, predictive, and multitap keyboard modes by pressing # twice, quickly, when entering text.

2. Use the number keys to open applications in the main menu; for example, press 3 to launch the third app icon.

3. Never use a certain app? Highlight the icon and press C to delete it from the menu.

4. Display your phone's operating system version by keying in *#0000# while the phone is in Standby mode. Use this info to find out if you have the latest firmware and other updates from Nokia. *—JL*

OFFICE

Open Separate Excel Windows

To have all of your Excel 2007 workbooks open in their own separate windows (rather than within a single instance of Excel) do this: Click the round *Office* icon at top left and click the *Excel Options* button. Click the *Advanced* choice at left. Scroll down to *Display* and check the box named *Show all windows in taskbar. —Neil J. Rubenking*

MOBILE

Force-Quit an App on Your iPhone

Now that the iPhone is a real handheld computer, it's not immune from the occasional misbehaving application. If one freezes up on you, force-quit by pressing and holding the Home button for 6 seconds. *—Jamie Lendino*

WINDOWS

A Tab Too Far

When you're Alt-Tabbing through open applications and files in Windows but accidentally Tab past the window you were looking for, you have to cycle through them all again. (And sometimes, yet again.) You can press Alt-Shift-Tab instead—or, if you're using Vista, hold the Alt key down, then use your mouse to select and click on the window you want. Yes, OS X has this capability, too. *—Sarah Pike*

WINDOWS XP

Save Valuable Scraps

If you're still using Windows XP, you can take advantage of a neat time-saver called "scraps." The Vista team decided to ditch this feature, citing lack of interest. Nevertheless, I've found it quite useful when it comes to entering a chunk of text into different documents at different times.

Here's how it works. In your word processor, highlight some text, then use the cursor to drag it to the desktop. A scraps icon will be created on your desktop, and if you drag it into any document in the program that created it, the original highlighted text will be entered into the document. In the case of Microsoft Office, a scrap created in one app can be dragged into another, though not always with consistent results. You can think of a scrap as a persistent copy-and-paste item. And if you double-click on the scrap, it will open the app with a new document containing the scrap text. Unfortunately, this behavior was what made the Microsoft team decide to remove the scraps feature, because malware writers were using it to run scripts. *—Michael Muchmore*

GREAT IDEA! *Got a tip to share? Find a cool new trick in your favorite gadget or app? Send it to* tips@pcmag.com. *We'll run it through the PC Magazine Labs wringer and print our favorites on this page.*

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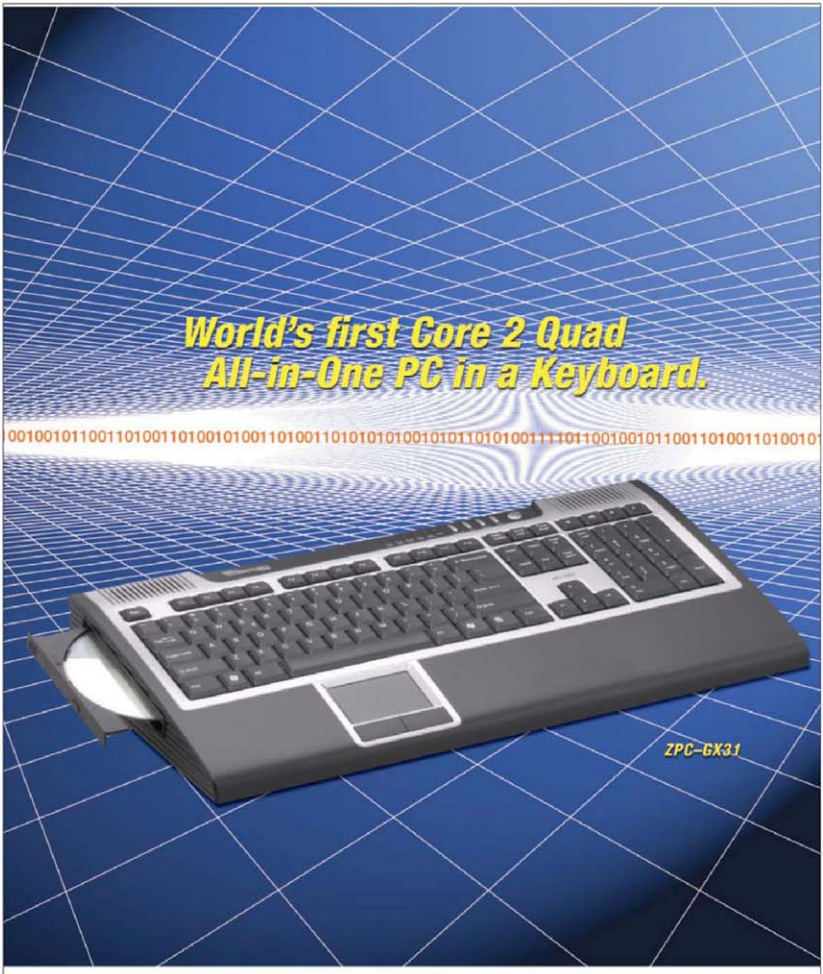

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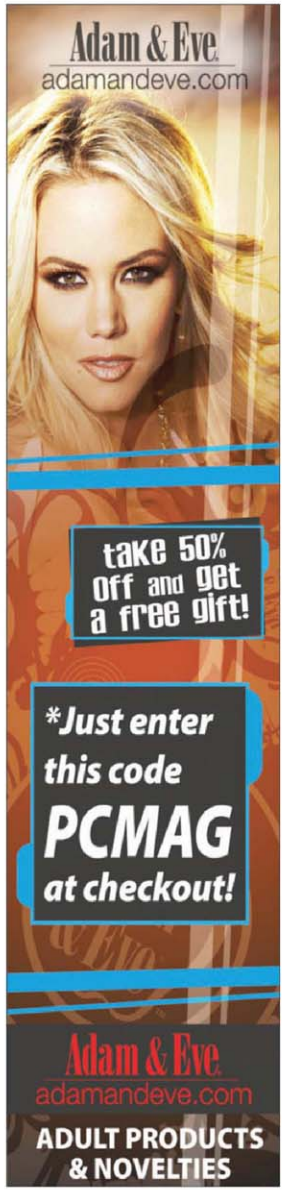

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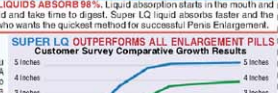

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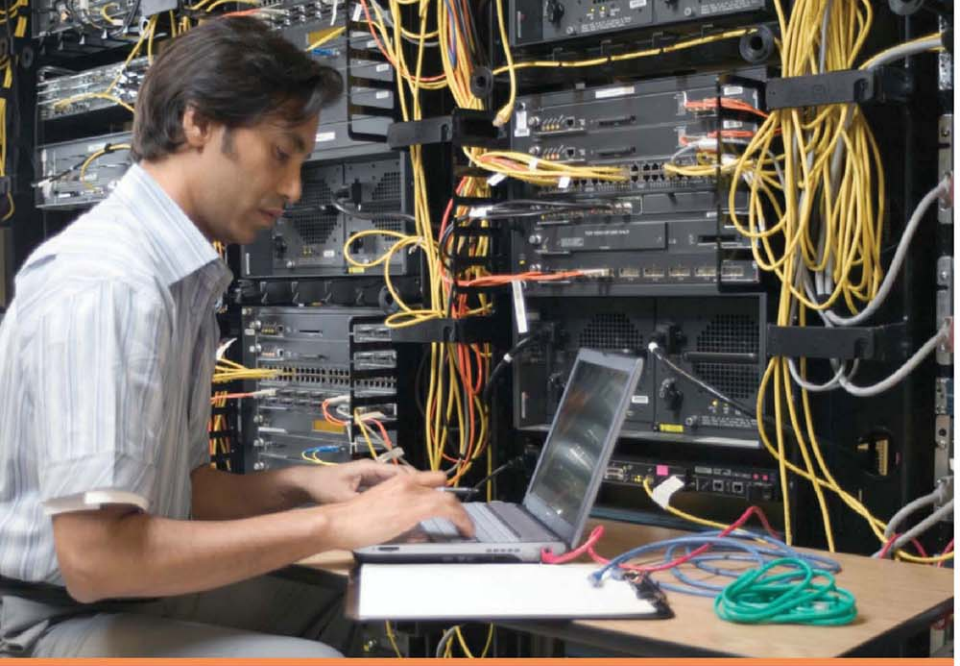

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