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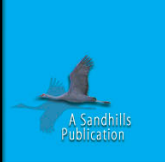
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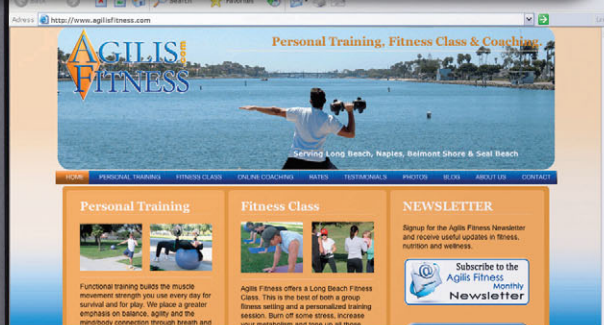
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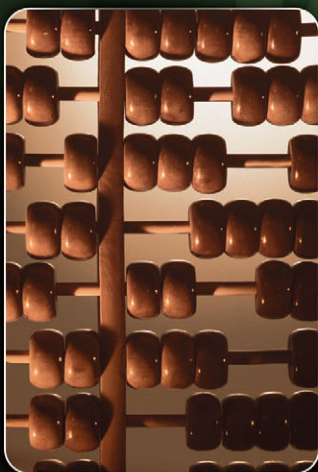
ON THE COVER

SUPERMICR[®]



Supermicro & The Evolution Of Green IT

Supermicro has been a leader in server innovation since 1995 when the company released the first X86 server-board based on the Orion chipset. Supermicro continues its industry-leading tradition into the new decade. To learn more about its innovative green IT products, turn to page 10. Then turn to page 11 for our interview with Supermicro CEO Charles Liang to find out more about the company and what sets it apart from its competitors.



Business Intelligence For Today

Businesses today possess a wealth of data—customer information, sales data, internal process information, and so on. Getting a handle on the data that's available and making efficient use of it can be a challenge. Business intelligence solutions exist to tackle that challenge. Turn to

page 14 to learn more about BI systems and whether they might be appropriate for your business, and to page 17 for a rundown of today's top BI solutions providers.

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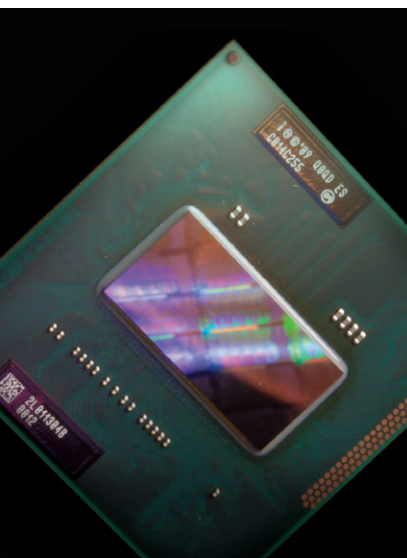
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Intel's new 2nd Generation Intel Core processors feature a microprocessor and graphics processor on a single chip.

■ New AMD & Intel Chips Join Microprocessors & Graphics

At this year's International Consumer Electronics Show, chip-makers AMD and Intel announced new technologies that bring together the traditionally separate microprocessors and GPUs (graphics processing units) onto the same chips. AMD refers to its new Fusion Family as APUs (accelerated processing units) and expects to deliver them in Q1. Intel announced it would launch its new 2nd Generation Intel Core processors in January and February.

■ Dell To Expand Cloud Offerings With Security Company Acquisition

When Dell completes the acquisition of 11-year-old, Atlanta-based SecureWorks, it will expand its enterprise-class SaaS (software as a service) portfolio in the area of SecureWorks' specialty: data security. SecureWorks offers Web security, email encryption, and related services. Terms of the deal were not disclosed. According to the companies involved, SecureWorks is an international company that counts among its clients 15% of the Fortune 500 and more than 1,500 banks and credit unions.

■ Teradata To Acquire Integrated Marketing Company

Teradata, an international database software company that claims to have more than 900 customers worldwide, made a deal to acquire integrated marketing management software developer Aprimo for \$525 million, including an assumption of \$25 million cash. Although Teradata will integrate Aprimo's operations into its own, Aprimo's more than 20 customer-focused and B2B marketing services will be available under the Aprimo name.

■ Eucalyptus To Take Red Hat Into The Cloud

Eucalyptus Systems, maker of the Eucalyptus cloud platform, announced a partnership with Linux software developer Red Hat in which Eucalyptus will support Red Hat Enterprise Virtualization and the Apache Datacloud API. The move makes it easier for enterprises to take their virtualized environments into Eucalyptus-based private or hybrid cloud environments.

RHEV and Eucalyptus are open-source solutions.

■ Citrix To Acquire German Online Collaboration Business
Citrix announced it will purchase the privately held Netviewer AG for an undisclosed sum in a deal that's expected to close early this year. Netviewer offers collaboration solutions that combine desktop clients and SaaS, or Web-based delivery, for online meetings. The solutions are very similar to those Citrix offers. The acquisition will help Citrix extend its own cloud collaboration products into European markets.

■ Wells Fargo Launches Mobile Payment Pilot

Wells Fargo is testing its Visa microSD mobile payment system in San Francisco using BlackBerrys (with the microSD card inserted) and iPhones (with a special case including the microSD card). Using DeviceFidelity's In2Pay technology, the card enables the smartphone owner to authorize payment on the device and then wave it near a reader device to apply the contactless payment. The system uses NFC (Near Field Communications) wireless technology, which will be built into select BlackBerrys this year.

■ Qualcomm Invests In Ereader Display Factory

According to a post by Taiwan's Ministry of Economic Affairs, Qualcomm plans to devote \$1 billion to building a new factory for manufacturing full-color, multitouch displays for ebooks and other mobile devices. Qualcomm uses two separate display technologies to produce its Mirasol display, which has no backlight, does not require charging, and is viewable even in sunlight.

■ Cisco Extends Consumer Reach With Videoscape

Cisco Systems made another foray into the consumer space with the introduction of Cisco Videoscape, a service for video content providers, including Telstra. Cisco Videoscape's features bring together the hottest recent trends in Web- and TV-based viewing: television content, online content, social media, and instant communications. "Consumers are looking for a personalized TV experience that can be taken with them irrespective of location or device," said Pankaj Patel, senior VP and GM, Service



Cisco Systems is delving further into consumer devices with its Videoscape set-top boxes and related services.

Provider Group, in a statement, adding that Cisco Videoscape is the "only entertainment solution available today that delivers this experience in full scope."

■ Media Delivery Company Rovi To Buy Sonic Solutions
Digital entertainment software developer Rovi announced it would acquire the Novato, Calif.-based Sonic Solutions for \$720 million. Sonic makes the DivX digital video software and the RoxioNow direct video-to-TV service. Rovi, which specializes in video playback software, advertising and networking technologies, and related areas, plans to integrate Sonic's products into its own; RoxioNow, for example, will integrate directly with Rovi's TotalGuide TV listings system.

A New Frontier for EDA

The landscape of the electronics industry is changing.

And it's all about the apps. Building complete systems that are application-ready is now as fundamental as delivering power-efficient silicon. There are a range of possibilities out there for EDA, but realizing them means going in a different direction.

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■ AT&T Acquiring Wireless Spectrum From Qualcomm

AT&T and Qualcomm entered into an agreement that will transfer spectrum licenses in the 700MHz frequency, which Qualcomm had used for its FLO TV service, to AT&T for the purpose of expanding the carrier's 4G mobile broadband network. Qualcomm announced separately that it would shut down its FLO TV mobile video service by March 2011.

■ Intel Releases Ultra-Small SSD For Tablets & Notebooks

Measuring 2 x 1.2 inches and less than a quarter-inch thick, Intel's new SSD 310 Series SSDs (solid-state drives) provide flash storage in 40GB and 80GB capacities in 1/8th the usual amount of space. Intel designed SSDs for use in notebook PCs (making dual booting possible in conjunction with a standard hard drive), tablet computers, and rugged devices (which especially benefit from the SSDs' durability).

■ Motorola Mobility Acquires Cloud Storage Company

Motorola Mobility, the consumer electronics subsidiary of Motorola, has acquired the Burlingame, Calif.-based cloud storage company Zecter for an undisclosed sum. Zecter made two products: ZumoDrive for Web-based data storage and sync, and ZumoCast for streaming music and video. Motorola Mobility plans to fold these products into Motoblur, its multimedia service platform for mobile phones.

■ Dell Buys Into Cloud-Based Medical Archiving

Dell recently announced its intention to buy the Wallingford, Conn.-based InSite One for an undisclosed sum. InSite One provides cloud-based archiving, disaster recovery, and data migration services for medical data. Dell plans to combine InSite One's offerings with its Unified Clinical Archive solution and improve medical image-sharing capabilities for the healthcare providers using the service.

■ Google: Imagine If Your Computer Could Talk

As noted in the Official Google Blog, the search company has invested heavily in digital voice-related development, launching Voice Search, Voice Input, and Voice Action for smartphones. Now Google has acquired UK-based speech synthesis developer Phonetic Arts, offering no specific plans for the company but indicating a strong interest in replacing typing with speech for human-computer interactions.

■ Verizon Wireless Caps LTE Device Launches With iPhone

Following more than a year of speculation as to how, when, and if Verizon Wireless might carry the iPhone, the carrier announced it will begin selling the iPhone on Feb. 10. The launch caps a slew of 4G LTE (Long Term Evolution) mobile device releases at CES, including the HTC ThunderBolt smartphone and Motorola XOOM tablet. As for the iPhone, there are fears that iPhone sales will cannibalize Verizon's Android smartphone sales, which would greatly impact Google and some manufacturers, including HTC, Motorola, and Samsung.



In addition to finally offering the iPhone, Verizon Wireless recently introduced numerous devices, including the DROID BIONIC and HTC ThunderBolt 4G LTE smartphones and Motorola's XOOM tablet.

■ Amazon Web Services Adds High- & Low-End Support Tiers

In addition to the current Gold and Silver support plans for the cloud-based services platform, Amazon Web Services announced Platinum and Bronze plans. While the \$49-per-month Bronze plan is intended for software developers, the Platinum plan is geared toward large enterprise customers and includes 15-minute support response times and a team of account managers dedicated to helping with specific projects.

■ Qualcomm To Make \$3.1 Billion Wireless Buy

Qualcomm, seeking to expand beyond cellular technologies, has entered into an agreement to acquire Atheros Communications for \$45 per share in cash, or \$3.1 billion. Atheros specializes in Wi-Fi and Ethernet products as well as Bluetooth, GPS, powerline, and other wired and wireless technologies. The goal in combining the companies is to provide business customers and consumers with the "best in-class products for communications, computing, and consumer electronics," Qualcomm CEO Paul E. Jacobs said in a statement.



■ Skype Buys Mobile Video Company

Skype has acquired Qik, a company that makes video recording, sharing, and communications software and services for mobile devices, the Web, and desktop computers. Although it's a small company relative to Skype, its technology for optimizing wirelessly streaming video could provide a big assist for Skype's own video offerings. Qik's service is currently available for Android, BlackBerry, iPhone, Symbian, and Windows Mobile. Terms of the Skype-Qik deal were not disclosed.

■ NATO ACT Chooses IBM For Cloud Project

NATO's Allied Command Transformation selected IBM in its first move toward using cloud computing services to improve data sharing capabilities and efficiency for NATO's 28 member nations. Working within the Supreme ACT headquarters in Norfolk, Va., IBM will help the organization "test and develop network solutions for command, control, intelligence, surveillance, and reconnaissance projects," according to IBM's press release.

■ Sprint Brings 4G To More U.S. Markets

Sprint launched its 4G service in three new metropolitan areas in December—Bridgeport, Conn.; Denver; and the San Francisco Bay area—bringing the total number of U.S. markets reached to 71. Sprint claims its wireless 4G service, which uses WiMAX technology, offers maximum data download rates of 6Mbps compared to 3G's 600Kbps.

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The premium version of Lookout Mobile Software provides comprehensive security for Android, BlackBerry, and Windows Mobile smartphones.

Lookout Raises Additional \$19.5M

The San Francisco-based, 50-employee Lookout has become a prominent player in the mobile device security business, claiming to have picked up roughly 4 million registered Lookout Mobile Security users in 170 countries by the end of 2010. Its sole product is simple from a user perspective; it's a security app that works in the background and includes features that assist in security-related emergencies, similar in concept to desktop security software. Combine that simplicity with favorable reviews and millions of users, and it's easy to understand why funding is flowing in the company's direction.

The recent \$19.5 million in Series C financing, led by Index Ventures and including Accel Partners and Khosla Ventures, capped a good year for Lookout. In May 2010, Lookout received \$11 million in Series B financing, led by Accel and including Khosla and Trilogy Partnership. Lookout Mobile Security is now available for Android, BlackBerry, and Windows Mobile smartphones. The app provides background security, backup features, remote control and monitoring capabilities, and the ability to wipe data from a stolen

phone. CEO John Hering says the company will expand the app to more platforms this year.

Mobisante Makes Ultrasounds Inexpensive & Easy

Co-founded by former Microsoft exec Sailesh Chutani and tech industry veteran David Zar, Mobisante seeks to free healthcare providers from the current cost and equipment constraints associated with traditional ultrasound imaging systems. Mobisante does this through its smartphone-based system, which makes ultrasound exams cheaper (Mobisante claims its system can perform an exam for less than \$1) and easier for non-experts to perform, not to mention completely mobile. Users can



easily share ultrasound images using an associated cloud-based service, making it easy for remote experts to view and assess them.

A privately held mHealth company based in Microsoft's home town of Redmond, Wash., Mobisante recently received seed financing from WRF Capital. The cash will help Mobisante advance the product and expand its reach into regions where ultrasound

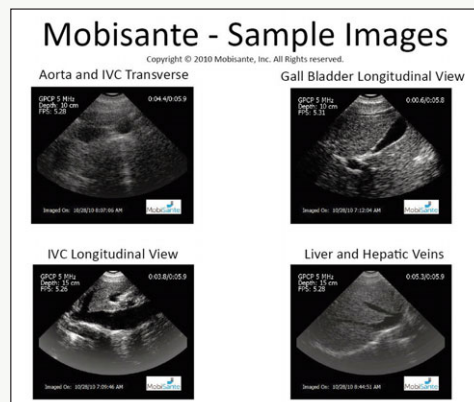
services are unavailable. "Almost 90% of the world's population lives within the reach of a cell tower," Mobisante CEO Chutani said in a statement. "Since cellular networks are everywhere, we want to use the cell phone platform to save lives."

Developer Of Low-Cost Li-Ion Batteries Wins \$3M NIST Grant

The Austin, Texas,-based ActaCell has won a \$3 million grant from the National Institute of Standards and Technology, bringing its total funding past \$7 million, according to an Earth2Tech report. Lithium-ion batteries are seemingly omnipresent in today's mobile electronics, and ActaCell hopes to bring the cost of those batteries down by using materials that are not rare and therefore vulnerable to price swings.

Manufacturing Robotics Company Raises \$20M

Heartland Robotics, based in Cambridge, Mass., has raised \$20 million in Series B financing led by Highland Capital Partners. Founded in 2008 by Rodney Brooks, co-founder and former director of the Computer Science and Artificial Intelligence Laboratory at MIT, Heartland Robotics develops robotic technology to aid in manufacturing processes.

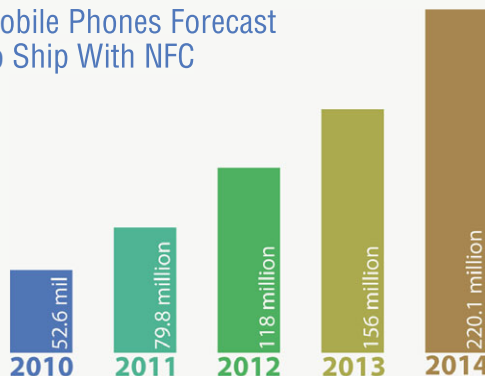


Mobisante promotes its smartphone-based ultrasound system, for use by healthcare professionals and veterinarians, as affordable, easy, and portable.

Smartphones Get Ready For Mobile Payments

Both MasterCard and Visa have developed mobile payment systems that are more or less ready for prime time. And now Wells Fargo is testing its own Visa microSD mobile payment pilot with 200 of its San Francisco employees. One thing these systems have in common is a reliance on NFC (Near Field Communications), a short-range wireless technology that makes contactless payments possible. One major obstacle to these systems has been a lack of smartphones featuring NFC, but that's set to change. According to iSuppli, there will be 220.1 million NFC-capable phones on the market by 2014.

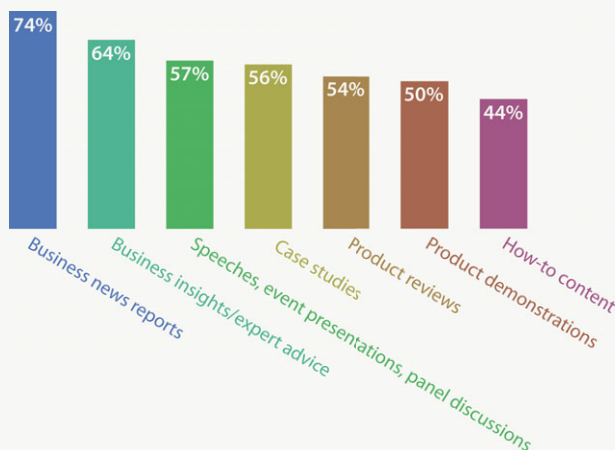
Mobile Phones Forecast To Ship With NFC



SOURCE: ISUPPLI

Business Executives & Video

You hear it everywhere these days in technology circles: video is in. And its popularity isn't confined to consumer uses, either. According to a Forbes Insight-Google survey of more than 300 C-level executives for large U.S. companies, more than 80% claimed to be watching video streams more than they did a year ago, and 75% watch business-related Web videos at least once a week. What's more, these business videos are having an effect. Here's a look at what senior executives report watching most often, as published in Forbes Insights' "Video In The C-Suite" report:



Enterprise Cloud Services Revenues Up 15.7%

There are significant adoption numbers behind the cloud computing buzz. Gartner reports that worldwide use of SaaS (software as a service), or Web-based, solutions among enterprise businesses increased about 15.7% in 2010 over 2009, resulting in revenue of \$9.2 billion. Gartner expects the trend to continue, with revenue reaching \$10.7 billion in 2011. Gartner adds that the leading SaaS category is CCC (content, communications, and collaboration) services.

Company Information On Unsecured Devices

As an increasing number of business networks around the globe have accommodated an influx of employee-owned consumer devices, there arises a risk that employees won't take measures to secure business data to the extent that companies would like. In fact, according to the "2010 Mobile Security Survey" from Goode Intelligence, 64% of organizations that permit employee use of smartphones and other "smart mobile devices" don't encrypt "potentially confidential" information. On a positive note, Goode Intelligence also reports that security professionals are increasingly more aware of concerns related to employee-owned mobile devices.

A World Of 3G & 4G Data

In the past few years, carriers around the world have built high-speed data networks at such a rate that an astounding 2 billion people are now within range of 3G and/or 4G services, according to ABI Research. The greatest degree of coverage exists in the U.S. and Europe (ABI Research reports 82% of the Western European population is covered) while the Asia-Pacific population lags behind (at 12%). ABI Research anticipates rapid growth in the Asia-Pacific region, however, particularly with the help of Chinese and Indian carriers.

Get Power-Efficient Server Technology

Supermicro Makes It Easy To Go Green

by Nathan Lake

Supermicro® has been a leader in server innovation since 1995 when the company released the first x86 serverboard based on the Orion chipset. Supermicro continues its industry-leading tradition into the new decade. Its innovative green IT products have the company poised and ready to serve our world's thirst for digital interaction, which increases the need for servers to deliver and store data in the most energy-efficient manner possible, lending truth to the fact that the future of all business will depend on IT. Headquartered in San Jose, Calif., Supermicro employs approximately 1,200 people worldwide and sells its server systems and components through major resellers, system integrators, OEMs, and through a direct sales force.

Keep IT Green

With Supermicro, being green isn't just a new promotional tool. It has been creating environmentally friendly, money-saving products for years. For example, in 2006, Supermicro introduced its 1U Twin™ (a server with two dual-processing nodes per 1U) servers with 89% power efficiency. Supermicro estimates that worldwide usage of Supermicro's high-efficiency products, compared to industry average servers, could save \$2 billion a year in electricity costs. A data center with 1,000 1U high-efficiency servers could save \$56,000 annually in electricity costs and 451 metric tons of carbon emissions, which is the equivalent of planting 166 acres of trees.

Supermicro optimizes its systems to take full advantage of the integrated power-saving technology and deliver optimum airflow to reduce your cooling bill. The result is that, over time, Supermicro's servers and computer systems offer a lower total cost of ownership. A system that's 90% or greater power efficient, compared to systems equipped with a 70 to 80% power supply, will save you \$200 to \$500 per year.

When you select products for your business from Supermicro, you can be sure that all the components assist the company's green design goals. You'll find motherboards that feature leading-edge technology based on Intel Xeon processors and high-efficiency components with voltage regulation modules that reduce power consumption. Supermicro also selects power supplies with efficiencies of up to 90% and above to reduce energy loss. The same goes for the interior cooling parts, such as fans that



automate their speed based on temperature and advanced heat sinks that most energy-effectively cool your hardware.

The Evolution Of Energy-Efficient Computing

Supermicro keeps IT green with the TwinBlade™ (shown above), which provides 94%+ high-efficiency power supplies along with 20 dual-processor servers (10 double-density nodes) that fit in the space of seven typical servers. The extremely high-density product saves space in your server room and gives you the ability to optimize high-performance computing cluster applications. In September 2010, Supermicro showcased a SuperServer that features four GPU graphics cards, a 94%+ efficient (80 Plus Platinum level) power supply, and support for more PCI-E add-on cards. This GPU-based SuperServer offers a thermal design that cools the high-power graphics cards to let them perform their best in graphics intensive applications, such as medical imaging, quantum chemistry, and astrophysics.

One of Supermicro's newest green innovations is the SuperServer 2U Twin²™, which features four dual-processor nodes in the same space as two typical servers along with 24 hard drives and two high-efficiency Platinum level 94%+ power supplies. The packed design means that you'll get superior processing power density and better performance per watt, so it's great for those that need high-performance computing, a powerful Web server, or a rendering appliance. They've also recently announced a 4U product with double-sided storage to let you both increase storage density and save space. The reduction in cabling saves money on both power and cooling in your data center. ▲

SUPERMICR[®]

Get To Know Supermicro

Supermicro Explains How It Meets Your IT Needs

We spoke with Charles Liang, CEO of Supermicro, about what makes Supermicro stand apart, and here's what he had to say.

Q What kind of technology does Supermicro specialize in, and how do Supermicro's innovations benefit the customer?

A Our specialties are application-optimized server and storage solutions, which means that you get the resources and features that you need, and you don't waste money on unnecessary parts that result in overhead. Since we make building-block solutions, and we have an efficient way of providing the customer a specialized solution quickly. Around five years ago, we started providing high-efficiency computing where we made sure that you get a product that delivers the best performance per watt and per square foot. In most configurations, our systems are 2 to 10% more power efficient than the competition.

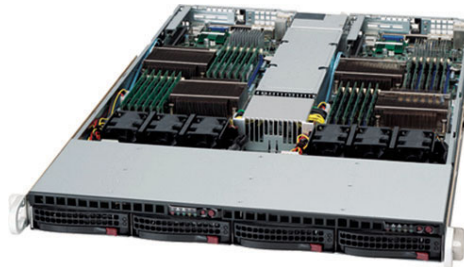
Q How has the company evolved since its beginnings in 1993?

A Supermicro started as a motherboard company, and customers would tell us that they were having a hard time finding the right chassis and correct power supply, so we began providing those to customers. Our customers then told us that it takes a lot of effort to make a system optimized and reliable; thus, we became a complete IT solution provider to meet their needs. As we grew, our product offering became broader and broader to the point that now we can provide the whole rack and application environment.

Q What size of industry, such as small business or large enterprise, and which type of industries are ideal Supermicro customers?

A Because of the flexibility of our building block solutions, we can serve all kinds of end users. We have strong channel partners that take our solutions and distribute our products worldwide. At the same time, many big corporations and vertical accounts require special optimized solutions and custom configurations. In such cases, Supermicro will provide direct support. For example, we provide direct support for solutions used in high-computing-power-based medical systems such as MRI machines and CT scanners.

Q What are the top technological innovations created by Supermicro in recent years?

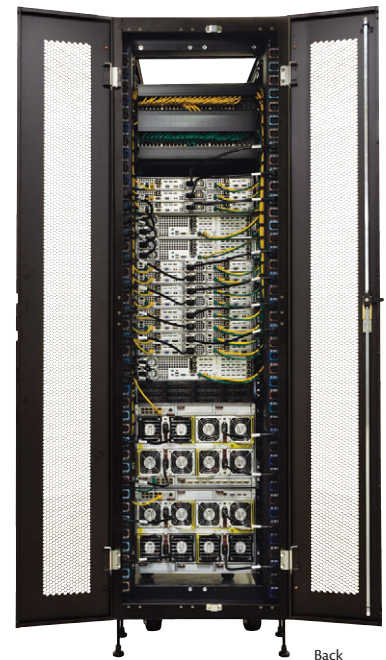


The 1U Twin is the first of its kind in the industry and showcases Supermicro's innovative leadership and green IT initiative, delivering two dual-processor nodes (essentially two servers) in the space of one.

A We invented Twin architecture around four years ago, in which we introduced two high-end dual processor compute nodes in 1U form factor. At that time, 1U was a dense architecture, but the customers told us that they still needed more computing density. People told us it was impossible, but in four months, we had designed functional Twin



Front



Back

Optimized Server Rack Solution contributes to an energy-saving design, with less restrictive airflow passages, reduced obstruction using clean cable layout, and easy front and rear access for Supermicro's Twin and Double-Sided Solutions.

Two GPUs in the space of two typical servers produce 2 Teraflops, saving energy and keeping IT green by doing the job typical of eight servers; in addition, Supermicro uses Gold Level 93%+ energy-efficient power supplies.



architecture. We have further evolved the line into a 2U Twin² (4 DP nodes in 2U), a 1U GPU (2 GPUs in 1U), TwinBlade™ (20 DP nodes in 7U) and other systems. All have become very successful. The second advancement is in green computing. We not only build systems with a high-efficiency power supply; we also make the systems more energy-efficient with improved airflow design. When we first started thinking about green design, our partners said it was a good idea, but no one was doing it. As soon as our green products came out, it didn't take long to win them over. Third, customers were saying that they wanted more storage capacity. But with all the hard drives installed on the front side of the rack, there isn't much room to add capacity. Around 18 months ago we created our first double-sided storage products, which make it easy to double your storage density. Then, customers told us that it's inconvenient for maintenance on the rear side of the rack. Thus, we designed a rack architecture where we cleared out and organized the messy cables to allow easy access to the back of the rack. Double-sided storage has since become one of our fastest-growing products. It almost sounds like a joke when people hear about these innovations—because they can't believe the concept is so simple—however, executing these ideas requires dedicated engineering expertise to solve all the complicated issues, and Supermicro was the first to make it happen.



Save space and energy utilizing Supermicro's 93%+ energy-efficient power supplies and 88 high-density hard drives in the space that typically houses 16.

Q What makes Supermicro's products stand apart from the competition?

A I believe it's the company culture. Here, all of our engineers work with excellent dedication, and they understand that this market is very competitive and our customers need the best product. Our focus is to ensure that we address the requirements of the customers by designing the best products for them. Our building block flexibility also means that we can provide a quick turnaround for customized projects. The end result is a much more optimized product.

Q What does Supermicro's commitment to "green" technology entail?

A Green is good for our earth, and obviously, we want to make our products to help the environment. Secondly, we want to save our customers money when using our products. As customers need more and more computing power, the cost of operation continues to rise, so keeping IT green has become more important. Ten years ago, most power supplies were operating at 70% efficiency and five years ago at 75%. Most of our products now feature power supplies that run at 93% efficiency or greater. Our engineers have a greater sense of satisfaction when they are working on the green technology, and they are constantly working on improving the efficiency. For example, most other 1U systems use 8% to 12% of their power for the cooling fans. In our 2U Twin² design, we feature four high-efficiency 8cm fans that consume as little as 2 to 3% of the total system power budget thus saving money for the customer while keeping IT green.

Q Can Supermicro help customers find solutions that suit their needs?

A Yes, we do. There are so many different applications and it is increasingly difficult for the customers to configure a server with the right combination of CPU, GPU, Memory, HDD/SSD, and I/O in a given form factor. At Supermicro we have more than 400 options for servers alone. Our knowledgeable technical team with in-depth IT expertise assists our customers in selecting the best solution that's right for their business.

Q What type of growth is Supermicro planning for the future?

A Supermicro has been a fast-growing company, and in the last five years, we have grown our scale more than three times. Around two years ago, we started to expand our European and Asian operations. Now, we have new system integration facilities in Netherlands and Taiwan. In the upcoming years, we will further expand our operations in Asia. The new locations will also make our operations more earth friendly and offer better service to the respective geos. ▲

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KEY POINTS

▲ Through intensive data analysis, business intelligence ultimately helps executives improve business performance through better decision-making.

▲ Business intelligence can extend beyond the executive level to provide support for salespeople, who can use BI tools to more effectively target offers.

▲ Platforms and tools that efficiently collect and present data are generally considered more effective than spreadsheet-heavy analysis approaches that can create data silos.

▲ Instead of focusing solely on BI tools, experts recommend identifying the business problem before finding the right tools for the business environment.

Business Intelligence

What BI Solutions Are & Why Businesses Need Them

by Christian Perry

Toss a month or two of lagging profits into a company's business calendar, and you're likely to see executives scrambling to investigate the source of the trouble. Before refined techniques and mature technologies helped business intelligence become the force it is today, rooting out problems or even analyzing business data for a strategic advantage was a chore of the highest level. But now companies are increasingly turning to BI to effectively absorb and use the massive amount of data that pours into their environments with no end in sight.

Intelligent Insight

As BI has evolved over the past several decades, the concept has grown to span an extensive range of concepts that combine to help businesses make better decisions about their strategies and processes. According to a Forrester report, BI encompasses the "methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information," though more casual references to BI often refer to certain pieces of the entire

executive must have in place to execute a successful business analytics strategy that is truly useful to the business goals of the organization. Only with the right tools, the right training, the right people, and the right culture of analytics innovation can you become better at turning your information into a fact-based resource to help your company make better business decisions."

Whether a business is struggling to keep its head above water or enjoying unprecedented success, there's almost always an opportunity to gain an advantage through data analysis. For example, Lucker notes, data analysis can help to identify business process leakage where a business misses the opportunity to maximize various forms of value (such as better products, pricing, supply chain management, sales, customer service, and customer insights and relevancy).

"Imagine a large computer distributor that competes on service, not price, to achieve a healthier margin than its rivals," says Paul Sonderegger, chief strategist with Endeca (www.endeca.com). "To sustain this advantage, the

company must offer better service in everything it does, including how it sells. By giving its salespeople a BI solution that brings together customer information, past transaction history, and current promotions, each salesperson can combine exploration of this data with personal knowledge of his or her accounts to target offers more effectively. The result

is a whole sales team that caters to customers' needs better, reinforcing the company strategy, and beats its quotas."

Many businesses have already invested heavily in ERP (enterprise resource planning) over the past decade in an attempt to achieve similar value, but the results weren't always quite as they anticipated, according to Bill Jeffery, technology practice leader for Tatum's (www.tatumllc.com) eastern region. "[ERP] provided improved transaction efficiency but did little to improve the

"In an economic environment of persistent uncertainty, having better insight and intelligence from an inside/out perspective and an outside/in perspective is no longer a matter of discussion in leading firms but a matter of differentiating competence," says Bill Jeffery, technology practice leader for Tatum.



BI model, such as information gathering and analytics. While businesses can certainly extract value from single pieces of the entire BI pie, the biggest benefits typically derive from the use of most (or all) of those pieces.

"Business analytics and business intelligence are about providing leaders with the information and insights that will help improve business performance with better decision-making," says John Lucker, principal, Deloitte Consulting (www.deloitte.com). "However, there are a number of factors an

insight a business executive has into either the performance of the business relative to the stated business strategy or how the business was performing relative to the market and competition. BI can leverage the ERP investments and raise the value that IT can provide to support what we call 'business insight,' Jeffery says.

Smart Tool

The BI market boasts such a tremendous amount of tools that managers new to the concept could easily grow overwhelmed when searching for the right product for their environments. Yet from a bird's-eye view, BI breaks down into a few basic parts. At the core of a BI system is the method for gathering and storing data that will be used for analysis. Ideally, data collection software is used to gather data and store it in a data warehouse, which usually resides on a server, though some BI applications don't necessarily require a data warehouse.

Some businesses choose to simply dump data into spreadsheets, but this method runs the risk of creating a "spreadmart" composed of varied sets of data across multiple spreadsheets. In a spreadmart, a business might have the same data across different spreadsheets, but different values are applied to the spreadsheets, including the data that's collected and the spreadsheet's format. Rather than having businesses risk data becoming trapped in data silos (that is, in disparate spreadsheets), many experts recommend using common reporting tools that provide dashboards, scorecards, ad hoc query and analysis, and other intuitive, flexible functions.

"This software will auto-discover storage repositories and, as long as [the business gets] the right security credentials and assuming the various policies are set up by IT in terms of what to do with certain types of data, it will catalog all the data and index it for future use," says Arun Taneja, founder and consulting analyst, Taneja Group (www.taneja-group.com). "The policy engine is provided by the software vendor and allows IT to take certain actions on the data. These actions could include the retention period [i.e., how long to keep the data], placement in a certain tier of storage, movement from tier to tier over time, immediate deletion, tagging for legal holds, number of copies to be produced and kept, etc."

With this type of tool, the business is armed with a solid baseline since it knows what data it has and where it is, Taneja adds. Developers such as Oracle, Actuate, Endeca, StoredIQ, and others provide platforms and utilities that can search across company data to extract the information required for analysis. Some of these platforms include high-powered



"Too much of business has historically been intuition- or gut-based, and business analytics helps to measure the gap between what intuition has produced vs. what time and history and performance can tell and predict," says John Luckner, principal, Deloitte Consulting.

databases that can keep data updated from across the enterprise and that also provide powerful search functions to pull in specific data. These platforms also allow businesses to integrate data from various sources into single views.

BI tools can collect data from an enormous number of sources, including those outside of company walls. In fact, Luckner says that while it's essential to capture new data and store it internally through a company's own business or operational processes, it's also important to find and license new external data sources. Having this data—along with the requisite internal data—readily available to BI tools ensures that data remains fresh and relevant, since external data can change often, he says.

What's Your Problem?

Naturally, gathering data and creating dashboards, scorecards, and other seemingly helpful reports is just one part of the BI equation. A business using these BI



"In tougher economic times, a company is going to be reluctant to spend money on BI solutions," says Arun Taneja, founder and consulting analyst, Taneja Group. "And yet this is the time where they need maximum help from their systems."

tools remains tasked with determining exactly what to do with that information, or what Taneja calls "extracting business value" from the data. There may be heaps of data available from e-commerce activity, for example, but the treasure lies in how that data can be applied to business strategy. And as data piles into terabytes of storage, BI can help make sense of what would otherwise be little short of information overload.

"Is there a competitor that is eating into the western region revenue? Is there a price issue in the Denver market? Is the new discount program that was announced in the eastern region affecting the

Approaching BI with the knowledge of why it's needed is a crucial element often overlooked by companies that fall into a tools-first mindset. Luckner says that instead of having conversations about buying tools, executives should first focus on the business problem at hand. Once that problem is identified, the search for analysis tools that have the technology and services to accommodate that problem can begin in earnest. Also, he adds, technology support for BI and its associated analytics should be a collaborative effort.

"A technology executive should not just provide the tools and tell the business to go forth and work,"

Luckner says, "but rather the executive should look for ways to be actively participating in the process by directly teaming with the analytics groups in the business to help find new ways to do things, new approaches for analysis, new tools to make things easier or possible, new external data sets to augment institutional data, and so on." ▲

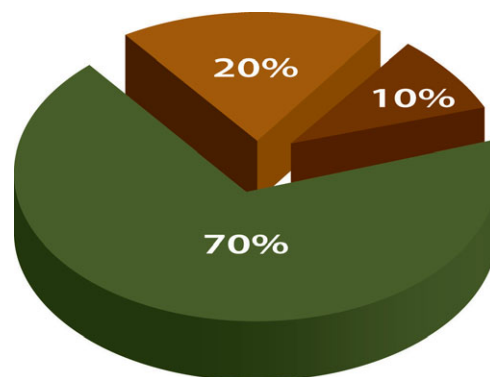
"By giving salespeople a BI solution that brings together customer information, past transaction history, and current promotions, each salesperson can combine exploration of this data with personal knowledge of his or her accounts to target offers more effectively," says Paul Sonderegger, chief strategist, Endeca.



western region? Why was there a spike in activity in Utah last month? Is there an underlying pattern to higher sales in the north? Some of these problems require the use a subset of data and [to] perform analytics on it," says Taneja. "But many require hundreds of terabytes of data to deliver meaningful results. This is the space for BI."

BI: Stuck In A Silo?

A recent survey by DecisionPath Consulting Research revealed a pervasive siloed approach to business intelligence among companies today. According to DecisionPath, the tendency by business owners to create their own data repositories or "spreadmarts" leads to expensive manual processes that ultimately achieve subpar results. When asked which statement best describes how widely BI is used in their companies, survey respondents selected the following answers:



- 20% BI is used by many or all company departments/functions
- 10% We don't currently have BI
- 70% BI is used by a few departments/functions, including mine
- 0% BI is used by a few departments/functions, but not mine

SOURCE: DECISIONPATH CONSULTING RESEARCH, OCTOBER 2010



BI Solutions Are Everywhere

Choose The Right One For Your Business

by Tom Nelson and Mary O'Connor

Business intelligence solutions are available from a variety of sources, whether they're established players such as IBM, which has long provided business solutions to companies of all sizes, or startups specializing in one or more types of BI products and services.

Research In Motion

BlackBerry-maker RIM's BI solutions eliminate the need to stick close to a desktop computing system; you can access them from your mobile office. RIM partners with leading BI solutions providers to produce mobile versions that run on a BlackBerry Enterprise Server. Partners include:

Business Objects Mobile by SAP. Allows you to access your BI reports, metrics, and real-time data from a supported BlackBerry device.

Cognos 8 Go! Mobile. Provides access to IBM's Cognos BI solutions, including access to reports, with no re-authoring needed. Can be used to push or pull BI data.

Dell

Dell offers both data warehousing and the integration of BI solutions from leading vendors including Microsoft, Oracle, and SAP. Dell can also build a custom BI system. In addition, Dell offers two popular data cloud solutions that can overcome problems when data size becomes massive.

Aster Data Analytics Cloud combines Dell's proven PowerEdge C servers with Aster Data

nCluster software to create a massively parallel processing system that can handle very large data volumes with ease. Aster Clusters allow you to create Applications-Within, essentially moving an analysis process that usually runs as external applications to one that runs in-database, with better performance and quicker results.

Greenplum Data Cloud Solution is also based on Dell PowerEdge C servers, running Greenplum software. The result is a BI solution for running multiple databases and data marts. You can consolidate all of your databases on a single platform that can scale to meet your needs. The Greenplum solution uses massively parallel processing that can be partitioned and assigned to the tasks at hand, moving raw horsepower as close to the data that is being processed as possible.

HP

HP offers numerous BI solutions, ranging from off-the-shelf hardware and software to custom-designed systems. HP builds BI data warehousing systems on several computing platforms, including HP Integrity and ProLiant servers. HP also offers its own Neoview Advantage Enterprise Data Warehouse to create a massively parallel database platform. Neoview uses a transactional, non-stop SQL/MX platform that provides mission critical transactional processing and analytical capabilities. It allows massive amounts of data to be made available and queried in real-time.

The Neoview system provides BI solutions for specific business segments and needs, such as Data

KEY POINTS

▲ The key components of business intelligence solutions are the data warehousing hardware, the database software, and analytic applications to make use of the information.

▲ BI providers usually attempt to provide all components of a BI solution, but it's also possible to integrate BI software with existing hardware.

▲ BI solutions can be custom-configured to meet your needs, or built using off-the-shelf hardware and applications.

▲ If you need real-time solutions, pay specific attention to the data warehouse components, to ensure you have the resources necessary to support real-time data streams.



"We understand the pressures clients face to increase the overall performance of their organizations to streamline their processes while also reducing costs," says Arvind Krishna, IBM general manager, Information Management Software. "Our continued investment in developing innovative technologies such as the new SQL Skin is a clear demonstration of our commitment to helping clients meet these challenges."

“First, you have to think about making information available in a secure and compliant way. Then you have to think about making it available to people no matter what device they’re using,” says Chris Capossela, Microsoft senior VP, Information Worker Product Management Group. “We really do a lot of work to make sure people can have a great experience, whether they’re using a PC, a mobile phone, or a browser. There’s work and thoughtfulness that has to be put into that from an IT perspective, to make that available to everybody.”



Business Intelligence for the CIO, which can measure, monitor, and improve cost efficiency of assets, labor, and processes; analyze the financial impact of changes; forecast service labor supply and budget; and monitor and measure IT processes and goals.

IBM

IBM’s main BI offerings are divided into two primary camps: data warehousing and analytics. Tying the two camps together is IBM’s DB2 database software, which can run on various hardware platforms, including IBM’s own AIX servers and storage solutions, as well as on systems running Linux, UNIX, Windows, and z/OS. If you already have a data warehousing system in place, you can add the DB2 database, to allow IBM’s analytics tools to access your stored business information.

IBM’s analytics offerings are based on three software packages that allow you to create your own BI solution, and a fourth package that offers custom integration of BI solutions for specific industry segments, from banking to travel and transportation. IBM’s ILOG Optimization & Analytical Decision Support Solutions are designed to optimize supply chain performance, as well as model and resolve production problems. SPSS (Statistical Package for the Social Sciences) Statistics 19 provides predictive analysis to help you anticipate change and its effects on your organization. Cognos 10 is a smorgasbord of 10 analytical tools that can help you make the most of your data warehouse system. Some of the most-used tools are:

Query and reporting. Gives professional report authors, as well as anyone who needs to create ad-hoc queries or customize existing reports, tools to create and produce their reports.

Analysis. An easy-to-use workspace for assembling and analyzing information. Analysis includes Business Insight, which allows you to explore data through time, and Cognos Analysis for Excel.

Statistics. Wizard-driven statistical analysis lets you quickly see patterns and trends as well as spot process faults.

Real-time monitoring. Lets you view up-to-the-second information from your business. You can create alerts based on real-time events, as well as business rules based on real-time data.

Microsoft

Microsoft’s BI offerings are based on creating a solution from standard parts that many businesses may already have on hand, including Office 2010, SharePoint 2010, and Microsoft SQL Server.

The various solutions use Microsoft SQL Server to manage the data warehouse platform. SQL Server can dynamically compress stored data, which can result in lower costs for long-term storage needs. SQL Server also has built-in support for OLAP (Online Analytical Processing), which allows you to perform easy ad-hoc queries of large data sets. Add Excel to the mix and you have an easy way to build data mining solutions that can reveal patterns and predict future outcomes based on past performance. And Microsoft’s

“Oracle Fusion Applications bring a new era of application software and technology investments going forward. To set a new standard, we listened and gathered the best practices from thousands of customers to deliver the first 100% open and standards-based business applications. Oracle Fusion Applications define how organizations innovate, work, and adopt technology,” says Steve Miranda, senior VP of Oracle Application Development.



SharePoint provides collaborative search and business data analysis, letting teams build business models to predict trends or monitor processes.

Oracle

Oracle offers a wide range of possibilities, from prebuilt BI applications that run on Oracle's BI Suite Enterprise Edition, to custom BI solutions. Oracle's BI applications fall into two categories: ERP (Enterprise Resource Planning) and CRM (Customer Relationship Management). ERP offerings include Financial Analytics, Procurement and Spend Analytics, Human Resources Analytics, Supply Chain and Order Management Analytics, Spend Classification Analytics, and Project Analytics. CRM application offerings include Sales Analytics, Services Analytics, Contact Center Analytics, Marketing Analytics, Loyalty Analytics, and Price Analytics.

Oracle also offers Essbase, a multidimensional OLAP server you can use to develop your own analytics and management applications. Essbase uses a highly graphical outline technology that allows you to quickly create dimensions, hierarchies, metrics, and scenarios that can identify trends, patterns, and relationships. For businesses that need real-time BI solutions, Oracle offers a Real-Time Decisions platform that combines rules and predictive analytics in a high-performance transactional server. RTD can analyze data flowing through processes in real time, allowing it to make decisions as well as reveal patterns and insights into your business processes.

SAP/Sybase

Sybase offers a wide range of BI solutions designed for many types of businesses. You can put together a basic BI system to allow you to analyze corporate data, or a system designed for extreme transaction processing, with real-time support and in-memory databases to speed up performance.

Sybase data warehousing can be built on popular UNIX and Linux hardware platforms, using Sybase IQ, a database server optimized for BI solutions, analytics, and data warehousing. Sybase

IQ is the basic building block for most of Sybase's BI solutions. As a basic building block, it can be added to create specialized solutions, including:

In-memory databases. Instead of reading and writing to a disk-based database, in-memory databases store all data in a large memory array, allowing data access and manipulation at a lightning-fast pace.

Shared-disk clustering. Enables you to create a multinode computing cluster that not only increases performance, but allows the cluster to continue to work even if nodes of the cluster should fail.

Dynamic reporting. Allows you to execute ad-hoc queries in real time.

Predictive analytics. Combines data-mining, statistical analysis, and forecasting to answer questions about why something is happening.

Quantitative analytics. Used to evaluate news, weather, and other non-market forces to predict positive or negative price movements in financial markets.

SAS

SAS has provided software business solutions since 1976, and it's one of the few remaining pure-play BI solutions providers. As a result, it offers a very large range of solutions and services. SAS BI is based on two main components: Enterprise Business Intelligence Server and Business Visualization. As the base for the SAS BI systems, Enterprise Business Intelligence Server integrates SAS Analytics and SAS Data Integration to provide data for all of your BI needs. Enterprise Business Intelligence Server is a multidimensional database designed to handle large volumes of data. The server supports portal and customizable dashboards, Web and desktop reporting, OLAP storage, metadata management, and guided analysis and model deployment, and is easily integrated with Microsoft Office.

SAS Business Visualization enables you to explore ideas and search for patterns using visual queries. You can easily view long-term trends using the many plotting options. SAS Business Visualization supports a vast array of business graphics, including bubble plots; scatter plots; and trellis, line, and needle charts. ▲



"Enterprise innovation and efficiency depends on solutions that are open, capable, and affordable," says Steve Schuckebrook, Dell's president, Large Enterprise. "Dell is uniquely open and un-tethered to legacy assets and proprietary approaches to deliver against these needs. The CIO agenda isn't about managing OPEX at the expense of CAPEX, or innovation at the expense of open. It is about driving efficiency without compromise and reinvesting the savings towards innovation and returning shareholder value."

KEY POINTS

▲ As people share electronically rather than via paper, printing becomes less and less important.

▲ Cloud-based services continue to grow, eventually becoming a one-stop SaaS (software as a service) shop, a “computer utility company.”

▲ The office itself will largely disappear as the workforce becomes increasingly mobile and interconnected.

▲ Social networking becomes an important part of how business relates to—and gets its marching orders from—its customers.

The Office In 2020

How Business Will Change Over The Next 10 Years

by Rod Scher

As we used to say back in the heady days of the tech bubble, “The Internet changes everything.” OK, so we were wrong about the bubble, but we were right about the Internet, says Matthew Dornquast, CEO of Minneapolis-based Code 42 Software. “We’re going to look back at the time from 1990 to 2010 and sum up business use of technology something like this: 1990s: Email. 2000s: Web.”

We spoke with several analysts to see how they thought the office would change over the next decade. Not surprisingly, it turns out that many of the transformations they expect to see will come about as a result of the expansion of the Web and advances in the mechanisms we use to get data into and out of that cloud-based data stream. “Bandwidth has steadily increased to the point where we can now move a single video stream reliably in most homes, while 3G/4G technology extends the Internet into our hands, wherever we are,” notes Dornquast.

And the way we interact with that information has also changed: We’ve already gone from input via keyboard (at about 7.5 bytes per second) to mouse input (250 bytes per second) and now to touchscreen (about 8KBps). What’s next? Well, Dornquast points out that technologies such as

years. “Can you imagine what we’ll do with 1 billion pixels per second?” asks Dornquast. “We’ll be there within the next 10 years.”

But what does this revolution in I/O and in real-time, distributed processing mean? It’s really a revolution in communication, says Dornquast. “Communicating ideas is more effective and less expensive than ever. The result? Experts now have ‘HD’ connections to their audiences, driving up value and reducing barriers to acquisition.”

We can see the results of this communicative revolution more clearly by examining which technologies the experts think will stay and which will go—and which will morph into something else.

What Stays

The “big three” business technologies—the PC, the telephone, and email—have survived for decades and will continue to be the basis of most office interactions, says Andy Woyzbun, lead analyst for Canada’s Info-Tech Research Group.

“When you think about it, PCs have not really changed all that much,” says Woyzbun. “Not revolutionary changes, at any rate. The Windows-based PC is so much ingrained that it is as sustainable as any other technology that we have.”

As for whether instant messaging might replace email, Woyzbun says that the difference is mainly semantic. “They’re just different aspects of the same thing, really. And one advantage of emails is that you can make the communication as deep and as complex as you want, and

you can attach video, audio, and documents. If nothing else, it’s a mechanism by which you can transmit rich information, much richer than that normally transmitted by IM.”

Osterman Research president Michael Osterman sees IM surviving, but not as it currently exists. Instead, he says, it’ll become part

“Bandwidth has steadily increased to the point where we can now move a single video stream reliably in most homes, while 3G/4G technology extends the Internet into our hands, wherever we are,” says Code 42 Software CEO Matthew Dornquast.



Microsoft Kinect are now recognizing video, the equivalent of 30MBps of input.

On the output side, we’ve gone from handwriting (about 10 bytes per second) to HD video at a resolution of 1,920 x 1,080, 24-bit color, and 30 frames per second; that’s 186.6 million bytes per second—an increase of 20 million times over 30

of other apps: "While it will fade from view as a discrete, standalone technology (that is, we won't have IM clients on our desktops), its functionality will be integrated into email, collaboration systems, desktop productivity applications, etc. It'll still be here, but integrated into other forms of communication, much like the way that standalone spell-checkers are no longer available, as they were in the 1980s."

What Goes

Woyzbun expects printing to pretty much disappear. "We really are significantly reducing the amount of stuff that we print in an office," he says. "The idea that you will print something to put in a photo album, for example, will be restricted to nostalgia; if you want to share a photo, you don't print and mail, you send a digital image. Carried into the business environment, this type of outlook puts a kibosh on internal business printing and billing."

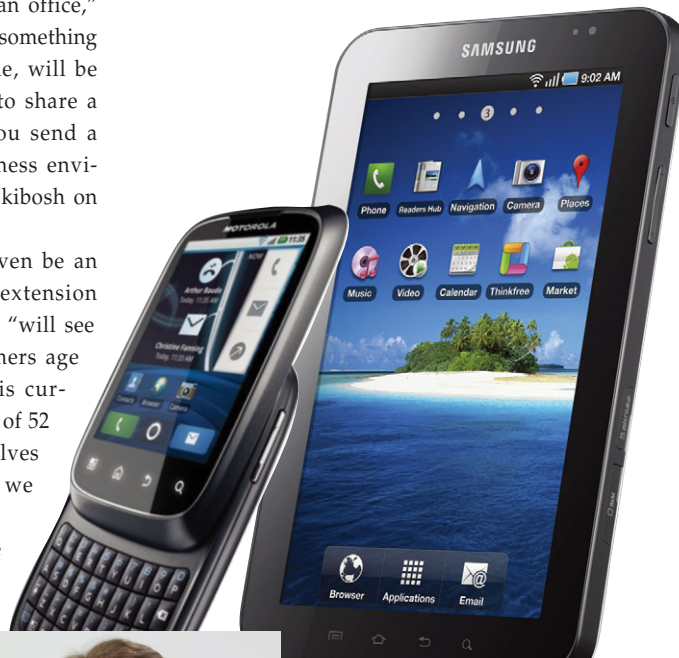
Then again, maybe there won't even be an office. "The U.S. economy, and by extension the world economy," says Osterman, "will see relatively slow growth as baby boomers age (the average age of baby boomers is currently just past the peak spending age of 52 years), and as economies dig themselves out of the current malaise in which we find ourselves."

"As a result," adds Osterman, "the business environment in 10 years will be characterized by much greater mobility in the broader sense; by that, I mean that companies will allow information-focused employees to work from home to a greater extent than they do today. This will be driven primarily by a need to reduce real estate costs and taxes in a challenging economy, and will drive much of the growth in cloud computing over the next 10 years."

In a very real sense, then, notes Borland founder and Fullpower Technologies CEO Philippe Kahn, the ability to "be there even when you're not there" dramatically changes business and levels the playing field. "The desktop becomes less and less relevant," says Kahn. And in the end, "The future for business is better-matched synergism between business partners because of a completely virtualized world."

Leading the charge to make the office obsolete is the proliferation of powerful mobile devices persistently linked to the cloud and to one another. In effect, these devices become employees' links to a constant stream of data—workers can both contribute to and consume from that stream, regardless of where they happen to be at the moment.

Thus, the office-bound computer itself will disappear—largely because the actual office, at least as we've come to know it, will also disappear. When employees (many of whom will actually be



This Motorola Android device (left) embodies much computing power, but it is still recognizably a phone—and experts say that phones will continue to play a large part in business.

Samsung's Galaxy Tab is one example of powerful mobile devices that can take on much of the communicative and computational workload away from the office.



"There's all sorts of competition from phones and other mobile devices, but the PC in various forms keeps struggling forward," notes Andy Woyzbun, lead analyst for Info-Tech Research Group.

contractors) are part of a divergent, amorphous workforce separated by many miles and multiple time zones, virtualization becomes the name of the game, and the cloud is what makes that type of communicative collaboration possible.

What Changes

Businesses, say some analysts, will learn to see the consumer as a true partner, largely due

Osterman Research President Michael Osterman says that instant messaging “will fade from view as a discrete, standalone technology, and its functionality will be integrated into email, collaboration systems, desktop productivity applications, etc.”



to the growth of social networking. Once a truly social phenomenon, it will continue to become an intrinsic part of how business sees its partnership with customers. In reality, we'll be seeing a form of social CRM. “I think we will see much more focus on social interaction, whereby social functions are built into productivity applications, messaging, collaboration, etc.,” says Osterman.

Content management will also change, especially as regards IP protection and threat management, according to Osterman. “There will be dramatically more emphasis on content management in two key areas: archiving for regulatory and legal purposes (ediscovery, legal hold, early case assessment), and protection of intellectual property and sensitive information. The WikiLeaks controversy, among its other ramifications, will get IT and businesspeople thinking about the potential for data leaks of trade secrets and other content in a much more focused way than they do today.”

The growth of the cloud also figures into the need for a change in content management, says Osterman. “Because of the proliferation of cloud-based solutions, the traditional notion of being able to control what passes through ‘the firewall’ will need to be replaced with technology that can protect what passes through tens of thousands of firewalls: employees’ home-based devices, cloud providers’ networks, internal corporate networks, etc.”

In fact, the current cloud growth may presage a new way of looking at SaaS in general: The cloud as a broad-based provider of scaled, pay-as-you-go goods and services of all sorts. Says Woyzbun, “Increasingly the focus in terms of back-office technologies is going to be handled by large, cloud-based entities: In effect, the cloud will behave

more like your ‘computer utility company.’”

What's New?

Although human-to-human communication will be the primary way that we communicate, using email, social media, real-time communication/collaboration tools and the like, the computers themselves—with their ever-in-

creasing storage and computation abilities—will play a more active part in collecting, analyzing, and communicating information.

“We will see much more unstructured human-to-bot and bot-to-human interaction for information queries, data analysis, real-time communications, etc.,” says Osterman. “This will dramatically increase the amount of traffic flowing through corporate networks and have significant implications for content filtering, encryption, and archiving.”

Dornquast views the character of this new form of processing as intentional. “Look for a wave of computers that are able to ‘guess’ your intentions in a statistically significant way using advanced input resolutions, the distributed processing that’s part of



Fullpower Technologies CEO Philippe Kahn says, “The desktop becomes less and less relevant” as workers become more mobile.

cloud computing, in near real-time (due to a much faster Internet) and wherever you are (due to ubiquitous mobile devices).”

The Future Of Work: People Distant—But Connected

Finally, Philippe Kahn sees the future as being full of sensors that can both inform us and inform others about us: our whereabouts, our intentions, our needs. And while it may sound a bit Orwellian, that’s not a bad thing, he says. “Sensors will be everywhere—but fewer wires. That makes everything more intelligent and frees us humans to focus on what really matters.” ▲



FOR BUSINESS



THIS CEO TAKES HIS NEW HIRES TO A BEST BUY STORE AND TELLS THEM TO GO SHOPPING

Charlie Bogart is passionate about customer service. He started his own telecom business with the idea that companies could save a lot of money by having an unbiased source find them the most cost-effective telecommunications system.

Which is precisely why he brings all his new employees to a Best Buy store to pick out their computer and office products. He knows Best Buy offers a great selection without any motive to push one brand over another. Narrowing it down to one is simply a matter of personal taste, something Charlie is more than happy to accommodate. Like well-served customers, happy employees are worth their weight in gold.

Watch business customer videos at BestBuyBusinessDistrict.com/stories.
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The Facebook Effect

Get Practical With Social Media For Business

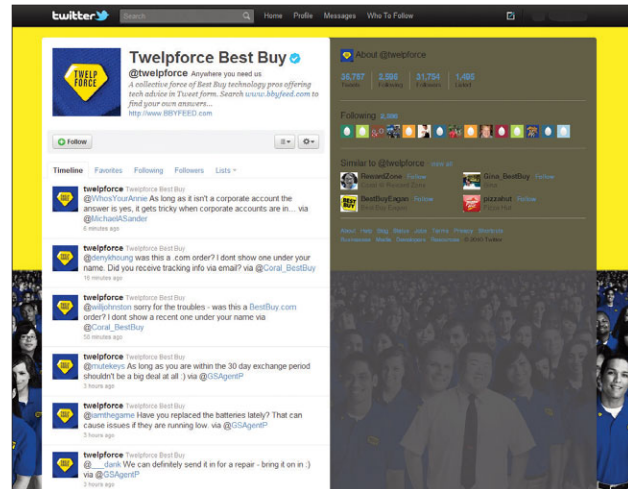
by Joanna Clay

Although a portion of small-business owners don't believe that their customers use social networks regularly, the numbers tell an entirely different story. eMarketer projected in its 2010 Social Network Demographics and Usage report that nearly 60% of Internet users, or 127 million people, would use a social network at least once a month during the year. The number of social network users in the United States in 2014 is expected to reach 164.9 million.

So why do 36% of small-business owners surveyed by RatePoint believe that customers don't want to hear from them on a social networking site? The reasons are continually dwindling, but common obstacles include privacy concerns, wasting time resources, lack of a trained staff, and managerial resistance. Although these are legitimate issues, it remains true that social media growth in the last two years has done nothing but skyrocket in the top three social networks: Facebook, LinkedIn, and Twitter. Furthermore, more than half of the companies surveyed by SmartBrief in June 2010 have been using social media in the past 13 to 18 months.

If your business has yet to connect to these global networks for the first time, we'll give you the rundown on what you should know, who's doing what right, and what you can try.

"Just as companies debated about the need for a Web site presence in the '90s, we are seeing the same debate happen today with social media," says Windmill Marketing president Neal Schaffer.



Best Buy is considered a leader in social media for business. The Best Buy Twelpforce answers tech support questions via Twitter by replying to its Followers' tweets.

Social Media For Business

Because social media is all about content, context, connection, and community (the four Cs of consumer marketing), you can't approach social networking for business without a strategy. A brilliant social media game plan for your company won't simply materialize in the middle of a brainstorming session, so it's paramount that you and your executives (or marketing department) mull over some basic questions such as: What are our business needs? Whose attention do we want to get? Who is going to manage our social media sites? How do we maintain honest and transparent conversations without overwhelming the customer with too much information? And, ultimately, how can social media help make our company/product distinct from our competitors?

Yvonne Gaudette, director of marketing for RatePoint, says companies have a choice: They can be a part of the conversation or choose not to participate and let customers, critics, and others direct their brand and their message.

"Making connections with customers online can lead to developing a host of testimonials and case studies that can be used in marketing and sales to develop new business and new customer interest," says Gaudette. "If a business gives customers the

ability to provide feedback, that feedback is seen by potential customers. Giving customers a voice creates a self-propelling, real-time network of feedback and promotion for the company."

Gaudette suggests that business owners start with research and find out where consumers are and what they are saying about the business. She also says that businesses should look at the competition and see where and how they are communicating with customers.

What Other Companies Are Doing

The best way to facilitate your own successful social media policy is to study what other enterprises and small businesses are doing. Based on results of the SmartBrief survey we mentioned previously, it can take two or more years for companies to fully integrate social media into business models. Consequently, long-term brand building can pay off in the future. One example of a company using social media aggressively and intelligently is Starbucks. For instance, using Facebook and Twitter, Starbucks promoted its popular 12 Days of Sharing in December 2010, an "event" during which consumers could get daily deals via a marketing campaign that drove social media users directly to the Starbucks Home site.

Eric Rudolf, with THEsmallCOMPANYBLOG, says social networking has been around long enough that there are no real secrets to success.

"Due to the nature of the Internet itself, no one is going to implement something that won't quickly be 'borrowed' by another company. I think



"Companies and executives need to look at Social Networking as an extension not only of their brands, but of their customer service, public relations and marketing research departments, as well," says THEsmallCOMPANYBLOG's Eric Rudolf.

companies like LegalZoom do a great job of combining their various social networking efforts—Twitter, Facebook, LinkedIn, blogging, etc.—into one cohesive initiative," says Rudolf. "That's the key and, in reality, the most difficult part of corporate social networking: making sure that all of the various initiatives you pursue convey the same voice and are designed to achieve the same goals."

More specifically, Neal Schaffer, president of Windmill Marketing, says he sees companies engaging in social networking to carry out low-cost recruiting, provide quicker customer support, broaden the reach of public relations, reach new consumers, inform and retain old customers, as well as drive business development to close sales.

What You Can Do

As recent as five years ago, a basic corporate Web site was standard for many companies, but now those updated sites function as a central hub for many of us and our social networking avenues: It's the sun of your social media solar system around which our profiles, blog, videos, photos, podcasts, RSS, and micro blogging all orbit.

In plain terms, you can essentially do whatever you like with social networking and multimedia, but it's wise to follow certain parameters. Respect the opinions of those you interact with using tweets, Wall posts, and so on, because that person with a complaint could be a future customer. Brand your company name by devoting time and effort to your social content—stay committed to monitoring your social media avenues daily (or hourly or moment-to-moment, if necessary). Research the best methods for your industry and adapt your company to them. And, maybe most importantly, determine a way to measure your return on investment. ▲



Neal Schaffer, president of Windmill Marketing, says Reset San Francisco's (www.reset-sanfrancisco.org) social networking community propels its mission to provide a public forum for the city's citizens to discuss and influence public policy.



Beta Browsers Battle

Chrome, Firefox & Internet Explorer Bring New Options

by Joanna Clay

KEY POINTS

- ▲ Beta versions are available for Google's Chrome 9, Mozilla's Firefox 4, and Microsoft's Internet Explorer 9.
- ▲ Chrome 9 beta features sandboxing, a Web apps Task Manager, and Chrome Instant.
- ▲ The Firefox 4 beta release is slated for release in the 2011 first quarter; it's likely to roll out with App tabs, cross-device syncing, and the Add-ons Manager.
- ▲ Internet Explorer 9 beta narrows its focus on pinned sites, enhanced tabs, and hardware acceleration.

Of the top five major Web browsers on the market today, three of the most commonly used are Google's Chrome, Mozilla's Firefox, and Microsoft's Internet Explorer; also growing in popularity is Apple's Safari browser. We're scrutinizing the first three because each has new or upcoming beta versions on the horizon. Before we examine what the betas will deliver, we'll provide a rundown on the technical differences between each browser.

Google Chrome

Chrome (free; www.google.com) is considered to be the most visually seamless of the top browsers. It features a single box from which you can enter search queries and see suggestions as you type. Opening a new tab reveals thumbnails of your most-visited sites as well as recently closed sites. Chrome uses a "dynamic tabs" functionality that lets you drag tabs

quickly so you can shuffle them in a single window or click and drag a tab to create a new browser window. If you want to browse without building any Web history, you can do so in private with Incognito Mode. The crash protection isolates a crashed tab so that it won't take down the entire window with it. Overall, Chrome offers a no-frills interface for unencumbered browsing, plus the ability to access Web apps via Desktop shortcuts.

Mozilla Firefox

The 6,000-plus customization features available for Mozilla Firefox (free; www.mozilla.com) users make it an ideal browser for those who benefit from a lot of productivity and personalization add-ons. Visit addons.mozilla.org and you can browse categories that include Alerts & Updates; Games & Entertainment; Photos, Music, & Videos; Social & Communication; and Web Development. With

integrated search, Firefox comes with a preloaded Search bar that includes Google, Yahoo!, Amazon, eBay, Wikipedia, and Answers.com (and you can add hundreds more). To prevent unauthorized spyware downloads, Firefox also asks you for permission to download and install third-party programs. Firefox also includes a Private Browsing feature that doesn't store browser, search, and download history.

Microsoft Internet Explorer

The current full version of Internet Explorer, IE8 (free; www.microsoft.com), relies on fast performance features and secure browsing. Accelerators are essentially Web shortcuts: For example, you can highlight text, click the blue Accelerator that pops up, and email the highlighted information via Windows Live. Similarly, IE also provides visual search suggestions and a predictive address bar. Safety amenities include plenty of preventive features to keep malware out and the browser contained; these include cross-site scripting, click-jacking prevention, domain highlighting, InPrivate Browsing, and enhanced browsing history deletion. Compatibility View, one of IE's incredibly practical features, automatically formats Web pages that are not yet compatible with the browser.

Back To Betas

Each preliminary version of Chrome, Firefox, and IE has its own nuances, so comparing their capabilities will give you a good idea of which browser might best streamline your particular online experience.

Chrome 9 Beta

www.google.com/landing/chrome/beta

Many of the unfinalized features that could be included in Chrome 9 are still in the experimental phase, but Google intends for this release to feature safe plug-ins, faster searching, and better 3D graphics. Chrome already supports sandboxing, a technology that restricts malware and hacking to a single tab so that your other tabs and Chrome windows don't become infected (press Ctrl-Esc to view a list of tab processes when Chrome is running). The beta version applies sandboxing to the Flash Player plug-in to add more protection from malicious hijackers. Google has also added a task manager for (background) Web apps, accessible via Tools.

Those familiar with Google Instant—the search enhancement that reveals results as you type a query—will appreciate Chrome Instant, a new option that loads a site almost as soon as you type the URL in the address bar (which Google labels the “omnibox”). Chrome 9 will also advance the “3D Web” with WebGL, a 3D graphics API (application programming interface) for JavaScript that supports the development of 3D graphics. There's no word on an official release date for Chrome 9, but some tech news sources believe it will launch in the first quarter of this year.

Firefox 4 Beta

www.mozilla.com/en-US/firefox/beta

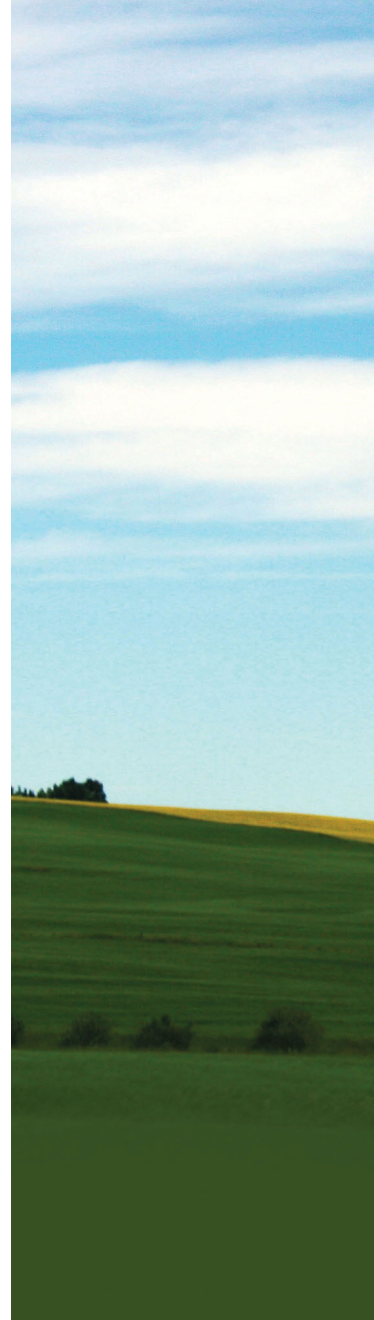
Initially scheduled for release in 2010 Q4, Firefox 4 is inching toward a 2011 Q1 release, likely late in the quarter. Before it rolls out, though, Mozilla wants you to provide feedback on Firefox 4 Beta. The first thing Firefox users will notice is an updated interface that gives your tabs visual priority. You can pin an “App tab” for frequently visited sites, so the site stays in place while you open other tabs. The new sync feature lets you sync up your settings, passwords, bookmarks, history, and tabs on multiple devices that support Firefox. A new Add-ons Manager is easy to locate: Click the Firefox button and select Add-ons to access the Add-ons store, latest updates, and more. Additionally, there is a significant number of appealing features “under the hood,” such as multitouch support, hardware acceleration, and fast scrolling that you will be able to explore on your own.

Internet Explorer 9 Beta

windows.microsoft.com/ie9

In IE9 Beta, the file menu has been reduced to a small Tools icon appearing in the same row as the Home button and Favorites icon. IE9 looks more stripped down compared to previous toolbar-heavy versions, but you can still restore some toolbars (Command, Status, etc.) by right-clicking to the right of the New Tab button and selecting what you want. The Windows 7 integration makes it possible to pin regularly visited sites to the Desktop taskbar. The new download manager alerts you of potentially malicious files. Other new features include color-coded most-visited sites in new tabs and address bar direct search. IE9 also uses the processing power of your GPU to better support multimedia streaming. Although Microsoft continues to make adjustments to IE9 beta, a release date of the full version hasn't been announced. ▲

Each preliminary version of Chrome, Firefox, and IE has its own nuances, so comparing their capabilities will give you a good idea of which browser might best streamline your particular online experience.



Why Worry About Email?

The Importance Of Archiving

by Carmen Carmack

As more business is conducted electronically, companies are learning that email and other electronic communications such as text and instant messages are vital for record keeping. EchoStar Satellite, a designer, developer and distributor of television set-top boxes, faced a court-imposed sanction for destroying email evidence in a multi-billion dollar contract suit. The Financial Industry Regulatory Authority fined Piper Jaffray & Co. \$700,000 for violations related to its failure to retain approximately 4.3 million emails from November 2002 through December 2008. A college student sued Norwalk Community College due to alleged harassment by a teacher. A computer forensics expert found evidence that the college had removed 500 emails from a key individual. The final settlement included a \$765,000 fine to the college.

"All organizations have an obligation to preserve content, not just those in heavily regulated industries," says Michael Osterman, president of Osterman Research.



Although these may seem like extreme examples, they illustrate the importance of electronic records in litigation. According to a recent article published in the Duke Law Journal, electronic evidence has proven crucial in determining the outcome in cases involving allegations of sexual harassment, disputes over trade secrets, copyright infringement, and insider trading.

Whether your business is large or small, email retention and electronic record-keeping are issues you shouldn't ignore. In addition to legal concerns, effective ERM (electronic records management)

can help provide disaster recovery solutions and make your IT operations more efficient.

Legal Considerations

Certain types of business—such as health care, financial services, and government agencies and contractors—are required by law to retain documents, including electronic documents and email. Federal laws—such as HIPAA, Sarbanes-Oxley, and the Federal Rules of Civil Procedure—along with state and local laws require businesses to create and maintain email retention policies for ERM purposes. The lack of an email retention policy can result in prosecution and hefty fines.

But even if your company is not required by law to retain electronic correspondence, email is considered documentary evidence. Electronic discovery (aka ediscovery) refers to a process in which electronic data is sought, located, secured, and searched with the intent of using it as evidence in a legal case. If your business is involved in litigation, the more documentary evidence you can produce to protect your business, the better. The ediscovery process is hampered if your electronic records are not easy to search or recover.

"All organizations have an obligation to preserve content, not just those in heavily regulated industries," says Michael Osterman, president of Osterman Research. "For example, the EEOC requires that personnel records be kept for one year—an employee's vacation request to her manager sent through email constitutes such a record and so must be preserved."

Disaster Recovery

For almost any size and type of business, email records hold a substantial amount of business transaction and other key information. For disaster recovery purposes, email should be backed up frequently and included in your disaster recovery plan.

Tying email retention systems to disaster recovery procedures can open the door to a single solution to solve both problems. Simply backing

up the email server or requesting end users to make local backups of their email is not ideal. Trying to recover and restore email from backup in the event of a disaster can be time prohibitive, complicated, and challenging to get right, especially if users are creating their own backup of their personal emails.

Storage And IT Efficiency

Backing up email files has become a real issue for many businesses. The increasing demands on storage have caused many businesses to institute policies that automatically remove emails after a certain number of days. Otherwise, employee email continues to collect and grow, requiring an ever-increasing amount of backup and storage capacity.

One of the drawbacks of automated removal of older emails occurs when you find you need access to them. IT personnel must take the time to search for and recover the emails. In addition, if you know your emails are going to be automatically removed and difficult to recover, you may spend valuable time printing them or copying them to another application to retain them.

How Email Archiving Can Help

Email archiving solutions are one method that businesses choose to help manage email and other electronic records. An archive solution is different



The Barracuda Message Archiver 650, an integrated hardware and software solution, is designed to archive email messages sent and received throughout an organization.

from a traditional backup solution in a number of ways. An archive system moves data from the email system to an archive, which is indexed and easily searchable. And, unlike a backup, an archive is directly accessible—a restore is not required.

Using an archive can enhance performance of an email system—it helps prevent it from getting bogged down in huge email files, while creating accessible records for compliance and non-compliance needs. It also makes email server backup faster and requires less storage. Because you can search, find, and recover your own emails if they are deleted accidentally or needed later, IT can have tighter email policies and retention limits.

Preserve Your Electronic Records

Business records, including your electronic records, should be retained for a variety of reasons—regulatory, legal, disaster recovery, and efficient IT. “It is simply best practice to preserve business records,” says Osterman, “even if this content won’t be required in court or for a regulatory audit.” ▲

Email Management Practices

A May 2009 survey by the Association for Information and Image Management found that of the organizations responding:

33% have no policy to deal with legal discovery

40% might need to search back-up tapes to find emails that could be relevant to litigation

84% would have no way to justify why emails of a certain age or type had been deleted

19% have the facility to move important emails into a document or records management system, or a dedicated email management system

45% were still filing their important emails in personal Outlook folders

Common Misperceptions Of Email Archiving For SMBs

Michael D. Osterman, president of Osterman Research, a market research and industry analysis business, says there are three common misperceptions about email archiving:

1. Email archiving preserves “smoking guns.” The concern is that email records could somehow come back to haunt an organization if the information was presented during trial, for example. While there is some credence to this argument, it’s just as likely that archiving will preserve content that could exonerate the organization by showing seemingly incriminating statements in their proper context.
2. Deleting email deletes email. Even if an organization purges every copy of every email message over which it has control, that would perhaps delete only 20% to 40% of the copies. Email messages that are sent outside the organization can exist at the recipient’s location on backup tapes, in PST files or their equivalent, or in archives. For internally sent messages, copies are located on employees’ home computers, on their smartphones, and in local archives. Plus, it’s very likely that if someone sues an organization, they already have copies of incriminating emails. It is unwise to walk into any sort of legal action, for example, and be the only one that doesn’t have a copy of your own email.
3. Email archiving drives up the cost of storage. While it is true that storing email content costs money in terms of additional storage requirements, this is offset by migrating content to lower cost storage, such as optical, making email systems run more efficiently, reducing the cost of e-discovery by making it easier and faster to find information, and minimizing the amount of IT effort required to help employees finding missing, deleted, or old emails. In short, archiving can actually lower the overall IT costs incurred by an SMB.

You're Going To Need A Bigger Network

Things To Consider As Your Business Expands

by William Van Winkle

Growth happens. Technologies change. To make matters more interesting, both tend to happen at the same time. Network connectivity is now ubiquitous and necessary in the workplace, but making effective use of wired and wireless Ethernet in an upward-scaling business comes with plenty of challenges. Let's make sure you're ready to meet these challenges with as few growing pains as possible.



Ruckus Wireless offers a host of access point and WLAN controller options, including the FlexMaster centralized management platform.

voice, video, and data buckets, and each application type has its own requirements. Video is obviously the most demanding in terms of bandwidth, but voice is less tolerant of latency and jitter. Moreover, the latest IP telephone handsets, conference phones, and wireless APs (access points) can leverage PoE (Power over Ethernet), eliminating the need for a separate power line. So when planning the infrastructure, plan for power as well as bandwidth.

Providing access from anywhere. Growing companies tend to have restless employees. One internal Microsoft study found that, on average, employees were only at their desks for 40% of their workday. This is why wireless coverage must be everywhere that employees and guests might spend time, especially if it's an area in which people converge. "Wireless networks need to provide guest access (hotspot functionality), RF management, and fast roaming to ensure performance is optimized," says Buckley.

Securing the organization. In general, the bigger the company, the bigger target it becomes for attackers. It can also mean that there is more sensitive information you don't want leaking out. Thus beefier firewall, anti-malware, and content management systems become increasingly essential. The all-in-one security appliances that used to protect the main office may now only satisfy a branch. Keep in mind that many security devices, including VPN routers, have a finite amount of processing bandwidth to accommodate a growing user base. For this reason, an increasing number of companies are now considering outsourcing some security functions to cloud-based services.

Accommodating ballooning storage needs. Having islands of storage scattered around a business is increasingly unsustainable because there's too much data in too many places—much of it unnecessarily replicated—for IT to handle. Instead, migration into centrally managed SANs

Key Obstacles

When a company grows, either in staff size or physical space, the LAN must expand to accommodate the change. According to Shane Buckley, general manager and senior vice president of Netgear's SMB Unit, expansion inevitably faces obstacles on any number of fronts:

Allowing for a converged network infrastructure. Yes, all network traffic may be IP-based, but the applications using that IP traffic now fall into

(storage area networks) will improve performance, potentially lower total ownership costs, and reduce traffic loads on the LAN.

"Growing businesses need to deploy virtualization to ensure cost efficiency and scalability of server infrastructure," says Buckley. "They also need to provide enhanced file sharing and backup/restore capabilities. Solutions should be able to support NAS and SAN functionality on the same platform and have software tools to provide centralized backup and cloud storage capabilities."

Improving management. Administering 50 systems is one thing; tackling 500 is something else. As networks expand, IT must have scalable management tools in order to perform everything from asset tracking to bandwidth and application monitoring. Otherwise, you simply don't know how your network is being used and have no control over it in order to maintain acceptable performance levels across all applications.

Migrate To Managed

As user and terminal counts increase, businesses must either add more Ethernet jacks (or move existing ones into more optimal places) or expand wireless coverage. Often, expanding wireless still means adding Ethernet jacks because APs need a wired connection to the LAN. Compared to stringing RJ45 cabling through walls and crawlspaces, Wi-Fi is a breeze, but there's a scaling issue awaiting the unprepared.

For starters, think about the physical space involved and the number of APs needed to cover that area. An enterprise-class AP should cover at least 5,000 square feet. According to David Callisch, vice president of marketing at Ruckus Wireless (www.ruckuswireless.com), a "smart" AP that can optimize signal connections dynamically should span about 8,000 square feet. The more low-end the AP, the more of them a business will need to cover a given space. Callisch notes that adding two or three such enterprise-class APs can easily enable support for another 100 to 200 users and cover an area in excess of 15,000 square feet. Keep in mind that not every AP needs a wired LAN feed. By configuring some APs as repeaters and creating a "smart mesh," the WLAN can be significantly extended from the nearest Ethernet drop provided that maximum data throughput isn't a necessity. Connection speeds tend to halve with each successive repeater link.

Consumer-grade APs will usually lack the management and security features businesses need. When a new security policy necessitates changing access point settings throughout the company,

IT staff won't want to log in to 50 APs one at a time. They want to have centralized management, make one universal change, and be done. This is typically managed via a WLAN controller made for the specific brand of APs being used. These controllers also help with scaling growth into new branch office locations.

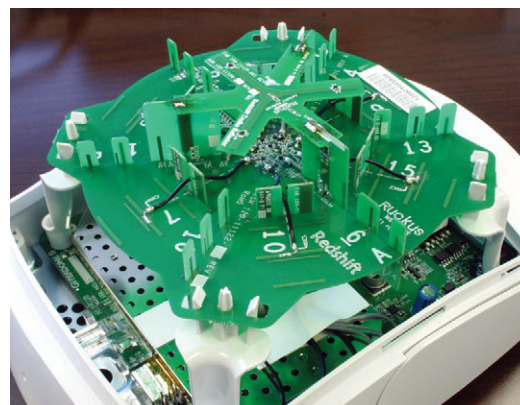
Callisch advises branches to deploy smart Wi-Fi access points that can automatically 'phone home' over the broadband connection to a centralized controller. "The controller lets IT staff easily manage, troubleshoot, and configure remote APs just as if they were onsite, while still providing the same level of service to remote users," he says. "If the wide area's connection fails, these APs will still provide local services to users."

Inter-brand AP compatibility is a hit-and-miss affair. Basic functionality may work, but advanced features, such as management and dynamic load balancing, may not. Callisch advises taking older, off-brand APs and repurposing them into public areas. Here, they can be logically segmented from the rest of the network into a discrete VLAN (virtual LAN) and used for guest access.

Plan It

Fortunately, several major networking vendors offer configurator tools that can help businesses plan for network expansion. Netgear's Business Solutions site at bit.ly/hfTAYy is one example. WLAN controllers will also often have analysis tools for pinpointing where you should place APs for maximum effectiveness. If nothing else, get sales reps from different vendors on the phone for advice.

Not least of all, keep a close eye on bandwidth usage. (The ICSI Networking Group provides some starting points at www.icir.org/models/tools.html.) Know how much throughput each application and user needs for unfettered results. You also want to measure actual usage before and after the expansion in order to identify areas that might need subsequent bolstering. If you grow users without increasing bandwidth, eventually sensitive apps, such as VoIP and video, will suffer and cost the organization business. So plan well, anticipate further scaling even after the current expansion, and enjoy the benefits of a robust LAN. ▲



Access points with intelligent signal optimization, such as this Ruckus unit, often use multiple antennas and beam-forming technology. This setup provides more reliable connections over longer distances.

Business Software

The Latest Releases & Updates

by Rod Scher

Nothing ever stays the same, certainly not in the world of business-related software. Attempting to manage a business while keeping track of new and updated software releases is enough to try anyone's patience, so we'll give you a hand by letting you know what's available.

Apple iTunes V10.1.1

If you've been using Apple's iTunes to acquire and download anything from your favorite music to your favorite business-oriented podcasts and lectures, you may have noticed that your Apple devices began

behaving erratically after iOS and iTunes updates in mid-December. Specifically, some users complained that their devices froze or crashed during syncs or that iTunes crashed. In addition, there were many complaints of compatibility issues when displaying videos on computers equipped with Nvidia GeForce 9400 and 9600 graphics cards. Apple has now released an update (V10.10.1)

that seems to resolve those (and other) issues.

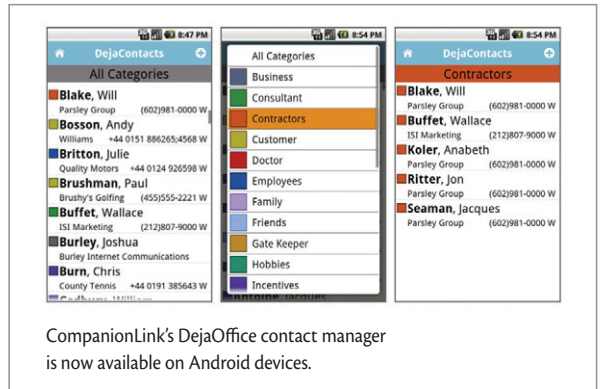
Google Chrome Browser, OS Updated

Google has updated its Chrome browser—at just about the same time the company began shipping beta-version Chrome OS-powered notebooks. The two are connected, in that Chrome (the browser) runs Web apps similar to those that run under Chrome (the operating system); in fact, the two look remarkably similar: There is a sense in which Chrome OS is the Chrome browser, embedded in a machine and acting as a gateway to server-based apps that run in the cloud, rather than locally. The test notebooks are truly beta units and, while flawed, have garnered cautiously positive reviews based on expected improvements in interface and functionality.

CompanionLink Releases DejaOffice V1.9 CRM For Android

CompanionLink has announced the launch of the DejaOffice Version 1.9 CRM contact management app

for Android mobile devices. CompanionLink software provides data synchronization between the devices and Desktop-based contact management software. The Android app provides users with access to contacts, notes, a calendar, and task list. The



CompanionLink's DejaOffice contact manager is now available on Android devices.

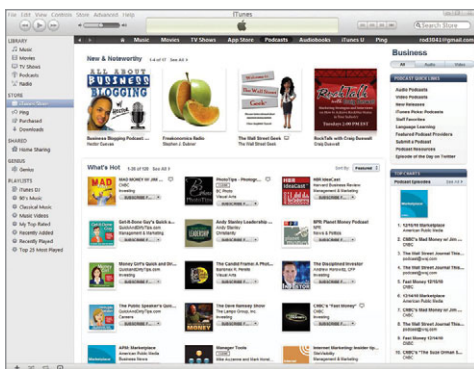
update includes productivity and usability features, including the ability to sync with a PC via Wi-Fi, and a Contacts View that displays easy-access Call and Text Message buttons. It also includes a split pane view that was conceived and optimized for Android tablet devices such as the Samsung Galaxy Tab.

SAP Releases Patch Update

SAP recently released "a significant number" of security patches for the SAP Business Suite and NetWeaver applications. In light of an increase in cybercrime, say company spokespersons, SAP has determined to take additional security measures—this release reflects that increased attention to security issues. SAP has made available on the SAP Service Marketplace site a white paper that helps customers install the fixes, although users can make many of these updates automatically using SAP Note Assistant, SAP EarlyWatch Alert, and SAP Security Optimization Services, or other SAP service offerings. The update was important enough that SAP pushed notification of the release to its customers, sending automated emails to security contacts.

Media Sign Pro Digital Signage Software Updated

Media Sign Pro has released version 3.2 of its Macintosh-based digital signage application. The



The recent iTunes update should take care of any issues you may have encountered with the app freezing or crashing.

system, aimed at businesses that display electronic signs at airports and other venues, now includes a fully integrated scheduler, higher zone limits, code and RSS feed optimization, and other enhancements. Using the automated system scheduler, users can schedule Mac shutdowns and startups at scheduled times, along with the auto-launch of digital signage projects. The systems can, for example, start up at the beginning of the day, launch their digital signage project, and then shut down at the end of the day without the need for user interaction.

Google Docs Log Upgrades

Google continues to improve its cloud-based office application suite. The most recent upgrade includes the addition of connectors in drawings, a new chart editor, improved document revision processes, hidden controls in documents and drawings, more import options in spreadsheets, and drag-and-drop file upload. The suite also now offers the ability to upload WMF files and convert them into Google drawings, insert photos from Picasa using Google Docs' Insert Image dialog, and use mobile devices to edit documents. The latter feature has been among the most hotly anticipated. The new mobile editing feature lets you create and search documents, edit your spreadsheets in List View, and make other changes.

SLIM 8.0 Software Lifecycle Management

QSM Associates has released SLIM Suite 8.0, a revision to its software lifecycle management application. The release features new capabilities (including many aimed at the growing Agile software development market), enhanced integration with IBM's Rational Portfolio Manager, and updated project productivity trends information. The product's user interface has also been redesigned and streamlined. The five SLIM modules (SLIM-Control, SLIM-Estimate, SLIM-DataManager, SLIM-Metrics, and SLIM-MasterPlan) are used for cost estimates and benchmarking software development projects. The new release includes an updated database of more than 10,000 completed projects, enabling organizations to measure their productivity against that of others.

Mac Panda Antivirus Released

If your business environment includes or is made up exclusively of Macintosh computers, you'll be interested to know that Panda Security has launched Panda Antivirus For Mac.

The application works with Mac OS and OS X, and protects users against viruses, spyware, adware, and other forms of malware. The program scans email and local files and protects Mac users from unknowingly

sending malware-infected documents to recipients using Windows or Linux. The software can also scan iPhones, iPads, and iPods to ensure the safety of those devices. As Apple's market share improves, antivirus vendors are finding newly vulnerable Mac systems a burgeoning market.

Firefox 4 Beta 7

The Mozilla folks have released a new beta of the next Firefox release. (Get it at tinyurl.com/2c5k6on.) The new version features new tab locations, the ability to drag-and-drop tabs; synchronize settings, passwords, bookmarks, history, and other customizations across multiple devices; and improved add-on management. The new version is said to boast faster startup and page-rendering times—from three to five times faster than Version 3 of Firefox. The new release supports WebGL, which means it can render 3D graphics, opening the door to Web-based



game development and interactive visualizations. The new beta may also include security revisions meant to mitigate potentially dangerous style sheet-related vulnerabilities.

SAP ERP To Move To RIM PlayBook

ERP (Enterprise Resource Planning) systems vendor SAP has confirmed that its software will be made compatible with RIM's soon-to-be-released PlayBook tablet. An SAP spokesperson noted that all of the company's ERP apps will run on the Flash-enabled PlayBook. SAP is not playing favorites, though: Previously, the company had announced the launch of a new SAP Business One mobile application for the iPhone. SAP's Partner page now includes links to information about the PlayBook, but access to that page is restricted to SAP partners. The SAP/RIM alliance is nothing new: The two companies have worked together since at least 2008, when they partnered to bring ERP functionality to the BlackBerry. ▲

GoogleDocs has now enabled document editing on a variety of mobile devices.

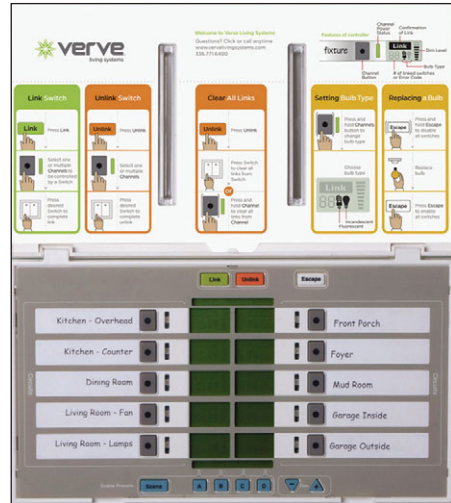
Greenovations

Energy-Conscious Tech

by Nathan Lake

Green Home Controls

Verve Living Systems (www.vervelivingsystems.com) offers lighting and heating controls that give you an easy way to incorporate energy-efficiency into your home or business. Verve's newest Broadcast Thermostat can be programmed to work with Verve switches, such as the Verve Occupancy Sensor (detects if people are in the room) and Verve Magnetic Contact (can be activated by opening a door) to automatically turn on lights and set the thermostat to a preset occupied level when you enter the room. The system consists of wireless components that need no batteries, so it's easy to install, maintain, and use. Based on the inputs from the Occupancy Sensor and Magnetic Contact, the system can also adjust the electrical loads powered by receptacles for a given room. You can manually control all the connected systems from the Verve Broadcast Thermostat.



HP Reaches Green Milestones

HP began using recycled plastic bottles to produce ink cartridges in 2007, and thus far, it has manufactured more than 1 billion ink cartridges using recycled plastic. HP has pledged to break the 100 million pounds of recycled plastic barrier by the end of 2011 through the use of recycled plastics in all its printer products. For example, nearly 35% of the HP Deskjet 3050 (\$79.99; www.hp.com) is made of recycled plastics, while the HP ENVY e-All-In-One (\$249.99) is a completely PVC-free printer constructed of 35% recycled plastics. HP also announced that it has changed its recycling processes to a closed-loop system, which will reduce water used in plastic production by up to 89%.

Meet The Modlet

Short for modern outlet, the Modlet (prices vary by volume purchased; www.thinkecoinc.com) by ThinkEco is an intelligent outlet that monitors the power to plugged-in equipment and shuts off power to the devices when they are no longer in use. ThinkEco estimates that organizations that implement a site-wide deployment of Modlets can expect a 35% to 80% reduction in the power consumed by each electronic device that's plugged in, which will likely lead to as much as a 10% reduction in the overall utility bill. The Modlet is easy to install: plug it into an existing outlet and plug your appliances and devices into the Modlet. A network of Modlets will also send information about your office power consumption to a database, where you can view it from a Web browser. You can analyze the data to further reduce your utility bill.

Data Center Metrics

The Green Grid (www.thegreengrid.org) is a group of data center companies and professionals that hope to improve data center efficiency and computing



The electronic devices that make our lives easier also produce some unwanted side effects on the environment. Fortunately, many consumer electronics manufacturers are working to create products that keep us productive while reducing energy demands to lessen our impact on the environment. Here, we take a look at the newest environmentally friendly technology initiatives.

ecosystems. Recently, the group created two new metrics: the CUE (Carbon Usage Effectiveness) and WUE (Water Usage Efficiency). The two new benchmarks are designed to build upon the widely used PUE (Power Usage Effectiveness) metric that compares the amount of energy a data center uses with the amount of equipment inside. The CUE will compare the total carbon emission created by the Total Data Center Energy variable (found in the PUE metric) against the energy used by the IT equipment.

The carbon measurement is designed to help managers determine how much greenhouse gas emissions the data center generates. The WUE is similar, but it measures the amount of water your data center uses. And by combining the three metrics, an organization can better manage the use of natural resources and reduce consumption to lower costs and lessen the impact on the environment.

Tidal Power

ORPC's (Ocean Renewable Power Company) TidGen Power System is a technology that converts tidal, river, or deep-water ocean currents into sources of renewable electricity. The company recently signed an agreement with local construction management and assembly services in Eastport and Lubec, Maine, to install and deploy the ORPC system. Eastport also received a \$1.4 million grant from the U.S. Department of Commerce to set up the Maine Marine Energy Center, which will produce the components and sub-assemblies needed to capture ocean energy. ORPC's in-stream turbines are mounted to the sea floor, and the natural currents spin the turbines to create electricity. ORPC hopes to deploy a turbine that will have a rated capacity of 150 kilowatts—enough to light 50 to 75 homes—before the end of next year. It should be the first significant source of tidal energy in the United States.



Track & Analyze Your Energy Use

EnergyCAP designs energy accounting software (EnergyCAP Express and EnergyCAP Enterprise; contact EnergyCAP for pricing; www.energycap.com) that's scalable to any organization size, including small market businesses. You can track both standard and deregulated bills and separate LDC and supplier charges. For convenience, EnergyCAP provides graphs and tabular views so you can easily compare yearly and monthly usage. EnergyCAP also provides benchmark charts where custom groups are ranked by cost, use, and unit cost per day.

Sustainability and compliance tracking is available for Energy Star energy efficiency ratings and greenhouse gas emissions. For example, you can automatically submit your building data to the EPA's Portfolio Manager to see how your buildings fare against their peers. If your building passes, you can receive an official Energy Star rating. You can generate a carbon footprint report when monitoring greenhouse gas emissions. Information taken from EnergyCAP for accounts, bills, and meters can estimate emissions.



Green Nokia Phones

Nokia indicates that its C7, C6-01, E7, and N8 include environmentally friendly materials, such as bioplastics, biopaints, and recycled metals. Additionally, the phones can be completely recycled or recovered as energy when you're done with them. The Nokia phones include a user manual, but it's installed as an e-guide on the device, so no paper is wasted to create the manual. The Nokia N8 (\$549 without a contract) includes a power-save mode and no PVC (polyvinyl chloride) or BFR (brominated flame retardant) materials are used in its construction. The full-featured phone also includes a 12MP image sensor and Carl Zeiss optics for compact camera photo quality. The N8 supports HD video playback and an HDMI connector that lets you connect to an HDTV to show off the images and videos you capture using the phone. The smartphones all run the new Symbian OS and include access to the Ovi Store, Ovi Maps, and Nokia Messaging.

KEY POINTS

▲ Only use cloud tools and services that offer adequate security, including SAS-70 Type II certification.

▲ Use strong username and password combinations for all online work and communication.

▲ When using public, unsecured Wi-Fi, use VPN to ensure a secure Web connection and avoid snooping or sidejacking.

▲ Instead of using public Wi-Fi, access the Internet using a 3G adapter on your notebook or create a mobile hotspot by tethering your smartphone.

STAY SAFE

When Using The Cloud

Start Smart, Then Educate

by Seth Colaner

Many workers use Web-based tools to get work done in the cloud whether they're at the office or on the road. As cloud tools and services continue to offer more features and capabilities, the benefits of using them become more obvious. Popular cloud services including email, office applications, and online videoconferencing and presentation tools allow employees to do a tremendous amount of work on their own as well as with other remote workers.

Yet although cloud-based tools can be a huge boon to productivity, there are some security considerations to keep in mind.

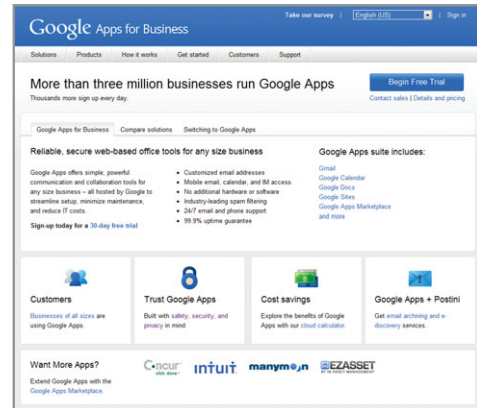
Choose Your Partners Wisely

You wouldn't do business with shady characters, companies with less-than-stellar reputations, or those with poor security, and so it follows that you should look for the cloud tools and services your employees use that provide the same level of trustworthiness and security practices.

Your IT department should vet any Web-based applications your employees use. Any service should have basic security protocols in place, including SSL (Secure Socket Layer) encryption to protect

sensitive data. Any additional security measures are welcome; for example, Microsoft developed the Security Development Lifecycle (SDL), which is designed to limit poor security design and exploitable coding flaws.

Any cloud service should have passed a SAS-70 Type II audit. Developed by the American Institute of Certified Public Accountants (AICPA), SAS-70 Type II certification ensures that a given cloud provider has adequate controls and protections in place. The U.S. Government Services Administration



Online services such as Google Apps for Business (www.google.com/apps/intl/en/business) espouse relatively strong security.

(www.gsa.gov) offers FISMA (Federal Information Security Management Act) certification, yet another check that certifies that a cloud provider has complied with the FISMA guidelines for security.

The People Problem

No matter how robust your company's internal IT security and the security of the online services your employees use, there is always one glaring vulnerability: people. Employees must engage in smart (and thankfully, usually very simple) practices to close that vulnerability. Even the most impenetrable fortress has a drawbridge, after all.

Authentication is how you access a given site or service. At its most basic, authentication consists of a username and password; when you enter the requisite information, the service compares your entry to its database to authenticate you as the rightful user.

Although certainly useful, that's a very basic type of authentication, and one that unfortunately can be compromised fairly easily. Browsing the Internet on a public, unprotected Wi-Fi network, as many do on the road, is unsafe, leaving your login credentials and browsing history open to anyone with even a modicum of knowledge as to how to snag that data from the ether.

Many believe that using SSL-protected Web sites (such as those with "HTTPS" instead of "HTTP")



Certifications developed by entities such as the U.S. Government Services Administration (www.gsa.gov) ensure that cloud providers meet security standards.

in the URL) is a way around the problem of unsecured Web browsing. However, in recent years, a technique known as “sidejacking” has emerged. Someone figured out that even SSL protection is only in effect during the login process; thereafter, many Web-based services hand off to an unsecured connection (i.e., “HTTP”), which leaves the session ID unprotected. That’s all a nearby hacker needs to join your session, which may include reading your email. In addition to that being an uncomfortable privacy violation, a sidejacker can also search through your account to dig up stored information such as financial records, credit card numbers, and confidential company data.

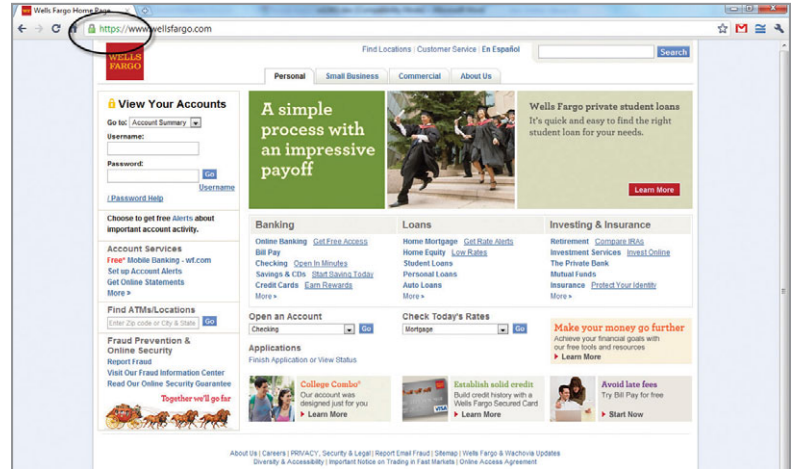
To protect against packet sniffing or sidejacking, use a VPN connection when on a public, unsecured Wi-Fi network. Even better, use a 3G adapter on your notebook or tether your smartphone to it to create your own mobile hotspot.

Use Better Passwords

Virtually every Web-based service requires a username and password to keep accounts secure, but many people use weak username and password combinations or use the same ones for every account. Some, unfortunately, are guilty of both.

To determine the effectiveness of your password, try a password strength checker such as Microsoft’s at bit.ly/1F3MKA.

Some of the most commonly used and weakest passwords, such as “12345” or “password” may be easy to remember, but they’re incredibly easy for a ne’er-do-well to guess. Once a crook figures out your login credentials, he can wreak havoc with that particular account. If you use the same login credentials for all your accounts, he has the keys to your entire online life.



Indeed, one of the downsides of using Web-based services is that users have ever-increasing numbers of usernames and passwords to remember. Many users have dozens of accounts, and remembering so many unique combinations is nearly impossible.

The good news is that strengthening usernames and passwords is one of the easiest security strategies to implement. In addition to using a healthy mix of numbers and upper- and lower-case letters, one option is using a password manager to keep all of your usernames and passwords secure and accessible only with a very strong password; this allows you to create very different and strong login credentials at each of your online accounts without having to remember all of them.

Another option is to develop a code for yourself, so each username and password combination is unique, but even if (or perhaps more appropriately, when) you forget them, you can decipher your own code based on certain criteria. For example, you can use the first letter of each word of an easy-to-remember (but unique) sentence or develop an alpha-numeric rubric. There are a number of password strength testers online, such as Microsoft’s at bit.ly/1F3MKA.

One pitfall to avoid is writing down your login credentials. Never, ever write down that information, especially on or near your computer or workspace—that’s like hanging a key on your doorknob in case you forget your set.

Although secure Web sites (indicated by “HTTPS” instead of “HTTP”) offer some protection, the risk of sidejacking persists over unsecured Wi-Fi connections.

Two-Pronged Approach To Cloud Security

On the IT side of things, ensuring that any and all cloud services employ adequate security measure will go a long way toward maintaining security, but individuals within a company also must be properly educated and take certain precautions in order to stay safe in the cloud. ▲

KEY POINTS

- ▲ The “4G wireless” touted by mobile providers is actually pre-4G, with speeds falling short of 4G expectations.
- ▲ Mobile phone manufacturers are struggling to produce high-function handsets that support even these speeds.
- ▲ The final 4G specification won’t be approved until at least 2012 but will likely accommodate all current “pre-4G technologies.”
- ▲ The road to real 4G involves many significant technological considerations beyond transmission speed.

Will The Real 4G Please Stand Up

What It Is & Why It Isn’t Here Yet
(Despite What You Might Have Heard)

by Jennifer Farwell

With the big four wireless carriers (AT&T, Sprint, T-Mobile, and Verizon Wireless) busy shouting the benefits of their current (or upcoming, in AT&T’s case) 4G networks, the casual observer might assume the era of 4G has finally arrived. If you look behind the marketing hype, the real picture is crystal clear. While the 2011 generation of “4G” products offer substantially faster speeds than previous 3G connections, real 4G still has a ways to go. Furthermore, there are numerous impediments to the ascent of this technology that must be resolved.

4G, Where Are You?

Until recently, the International Telecommunications Union held staunchly to the premise that only those standards approved as IMT-Advanced (International Mobile Telecommunications Advanced) could

(Long Term Evolution-Advanced) and WirelessMAN-Advanced (Wireless Metro Area Networks-Advanced) passed their examination. However, critical aspects of both technologies, from radio chips to air interfaces (how the signal enters the phone), remain unconfirmed.

Furthermore, the infrastructure required to support 4G is simply not in place, says Chris Kissel, In-Stat industry analyst. “Once you start focusing on speeds, you start cutting away from the network aspects of what is required to make this happen,” says Kissel. “To get to these standards, carriers will have to address a number of hardware and software issues.” As an example, Kissel points to application switching, which (per a proposed 4G spec) is supposed to occur in 50 milliseconds. “None of the current carriers are speaking about that,” he notes.

Berge Ayvazian, a senior consultant with research firm Heavy Reading, says there are significant device issues. According to Ayvazian, 4G phones will need multicore processors and Swiss-army-knife chipsets to perform all their duties efficiently. That, he says, isn’t possible quite yet. “We haven’t seen any LTE smartphones [in real-world situations] yet,” he notes. “The Samsung Craft—a first-generation 4G phone—is not very sophisticated. Your experience on the HTC EVO and Epic is better than [with] the Craft.”

Almost But Not Quite 4G

With so many aspects of 4G still in the works, what’s a carrier to do? It doesn’t take a marketing genius to realize that “nearly 4G” simply isn’t going to sell. And yet, carriers’ almost-4G offerings are far faster than their 3G predecessors.

What better way to manage this problem than to ignore the ITU completely? That’s what Sprint did when it announced it was testing (in partnership with Clearwire), its WiMAX network in 2008. Top speeds were reported around 3Mbps—hardly 4G, but nearly twice the top speed of AT&T’s 3G network at the time. Sprint has since improved the speeds of its offering, to 3 to 6Mbps average and 10Mbps peak download.

“LTE Advanced, WiMAX 802.16m, and LT-HSPA-E are all modified routes to 4G,” says Berge Ayvazian, a senior consultant with research firm Heavy Reading. “None of them will be available until 2012.”



qualify for the designation of “global 4G mobile wireless broadband technology.” The ITU has yet to ratify a 4G specification, with criteria including IP (or digital) communications, flexible channel widths, and bandwidth efficiency to ensure maximum throughput. The most attention-getting requirement, however, has been the minimum download speed of 100Mbps for high-speed mobile access (such as in a car) and 1Gbps for low-mobility (such as walking) or stationary access.

In October 2010, the ITU confirmed that two of the six technologies it had evaluated—LTE-Advanced

Verizon followed suit in December 2010, rolling out its LTE network in 38 markets and more than 60 airports. Verizon's network is even faster, offering peak data rates of 40 to 50Mbps and downlink rates of 5 to 12Mbps. This may sound like a far cry from 4G, but consider that the 4G specification is quantified in terms of cell sectors (a subset of a base station's capacity), not number of users. That 100Mbps average throughput might be distributed among 10 or more users, dropping real-world delivery closer to that of speeds currently marketed as "4G."

Furthermore, as advocates of the technologies asserted, Verizon and Sprint's technologies are precursors of LTE-Advanced and WiMAX-Advanced. "LTE is 3.9G—on the road to 4G," says Ayvazian. "Sprint's offering (WiMAX) is also 3.9G." According to Ayvazian, the use of 4G to describe these offerings is understandable, because the underlying technologies are similar.

The Bet Pays Off

When T-Mobile began marketing its 4G service in early December 2010, it couldn't make the same claims as Sprint and Verizon. Its 4G network runs on HSPA+ (aka Evolved High-Speed Packet Access), a technology excluded by the ITU in October from IMT-Advanced approval.

However, in late December, the ITU, which had completely ignored the 4G imposters to date, embraced them all in a single statement: "As the most advanced technologies currently defined for global wireless mobile broadband communications, IMT-Advanced is considered as '4G,' although it is recognized that this term, while undefined, may also be applied to the forerunners of these technologies, LTE and WiMAX, and to other evolved 3G technologies providing a substantial level of improvement in performance and capabilities with respect to the initial third-generation systems now deployed."

Effectively, the ITU gave after-the-fact permission to carriers to "apply" the term "4G" to their 3.9G technologies. Because a future revision of HSPA+ calls



The Samsung Craft is a first-generation 4G phone that has not received rave reviews.

for mobile download speeds of up to 168Mbps and eventually 672Mbps, T-Mobile's technology was effectively included in the embrace. In reality, T-Mobile's current service has peak data rates of 21Mbps and downlink rates of 5 to 10Mbps, placing it between Sprint's and Verizon's offerings.

More Than Speed

Other than meeting the minimum requirements outlined by the ITU, it's impossible to say where the final IMT-Advanced technologies will end up in terms of speed. According to Kissel, nothing—from base station design to spectrum allocations—is ready for the enormous throughput required to achieve true 4G implementation. Furthermore, issues that seem innocuous, such as the all-digital specification for 4G, loom large on the horizon and will impact business users.

"There isn't a universal network standard for handling voice transmissions in an IP network," says Kissel. If one is not in place and adopted by the time 4G arrives (unlikely), phones will need 2G and 3G chips—and suffer the performance issues of toggling between them—to handle both calls and data. "You need all sorts of things in the chipsets to make 4G practical," he says. ▲



The Sprint HTC EVO 4G runs nimbly on a 1GHz processor, but true 4G phones may require even more power.

No Connection?

When Bad Connections Happen to Good Phones

by William Van Winkle

In July 2009, TerreStar Networks launched the answer to your bad cell phone reception problems—literally. Thanks to the now-operational TerreStar-1 satellite, whenever you run into coverage trouble, you need only hit the button on your phone to switch from the local cellular network to space-based satellite coverage. You'll have service anywhere in the U.S., even up to 200 miles offshore. Of course, there are some caveats. You'll need to be an AT&T subscriber. Having the satellite option will add \$25 to your monthly bill before charges of 65 cents per voice minute and \$5 per megabyte of data. The only phone supporting TerreStar today is the \$1,500 TerreStar Genus, which requires an existing AT&T account to run, looks like a BlackBerry, and runs the increasingly out-of-date Windows Mobile 6.5. And when using the satellite mode, the phone must have clear line of sight to the southern sky.

If you're not OK with all of the above and still want to do something about shoddy cellular reception, you've come to the right place.

Why Does Reception Die?

In general, poor phone reception springs from three sources: your general area, your wireless carrier, and your immediate environment. There are some instances, as with the recent iPhone 4 antenna brouhaha, when a phone can have a significant impact on reception performance, but Jonathan Bacon, director of marketing at wireless products manufacturer Wilson Electronics (www.wilsonelectronics.com), notes that cell phones must pass rigorous testing by carriers, so the odds of getting a "bad" phone model for reception is fairly minimal. The other factors mentioned are more likely to be the culprit.

Your area. Even major carriers such as AT&T and Verizon don't cover large tracts of the U.S. landscape. Moreover, you might have great service in one spot, move 20 miles down the road, and suddenly find yourself in a coverage dead zone. Usually, carriers with a major presence in a region will tend to blanket urban centers and freeways, but ultimately the network deployment dollars follow the people. In more sparsely populated or traveled areas, the chances of weaker coverage increase.

Your wireless carrier. Actually, blaming the carrier for dropped calls and shoddy signals is only partly justified. "It has more to do with the frequency carriers use to transmit signals than the phones or whether the technology is GSM or CDMA," says Bacon. "For example, AT&T and T-Mobile transmit at 1900MHz while Verizon and Sprint transmit at 800MHz. Typically, 800MHz has an easier time traveling farther. That said, performance has more to do with how the carrier builds out its network than any other variable."

Specifically, the number of towers a carrier has in an area and the effectiveness with which a user's connection gets

If you're frequently outside of cellular network coverage and still need to connect, consider a satellite link to the TerreStar-1, shown here before its 2009 launch.



passed from one tower to the next as the phone moves (known as “handoff”) are critical. For example, when Clearwire debuted its WiMAX service in Portland, Ore., we experimented with having a passenger connect to the WiMAX network as we drove through downtown—an area where coverage should have been dense. We were never able to sustain a connection for more than a minute either because the new service lacked enough towers to eliminate coverage gaps or because our connection wasn’t being handed off effectively from tower to tower. We were told that Clearwire would increase its tower coverage as service subscription levels rose. This is a predictable pattern with new wireless services and one you should be careful of when investigating new “4G” offerings.

Your immediate environment. Concrete and metal are death to radio waves, which is why cell phones have such a hard time operating in many large buildings. Even some window tinting, which can contain iron, may block cellular signals. Wood and stucco will pass signals, but the wire sometimes used to support stucco can interfere with cellular connections. Note that vegetation, particularly leaves on trees, can block phone signals, which is why people in cabins will sometimes be able to achieve a weak connection in winter but no connection in the summer.

Obviously, distance from the nearest tower also affects reception. Under optimal line of sight conditions, a phone can sustain a connection with a tower cell from more than 20 miles away. More commonly, a tower might have only a two-mile radius, and some towers in dense urban areas cover less than a mile.



Proximity to cell towers and how well the carrier’s network hands off signals between those towers can make or break your wireless reception experience.

The relationship between signal and your phone’s battery should be kept in mind. In areas where you have a weak signal, your battery will drain much faster because the phone is increasing power in order to boost the signal for your transmission back to and from the tower.

What Can You Do?

Ensure compatibility. Make sure your phone uses a radio compatible with the cellular networks present in all of the areas you travel. If your phone lacks a radio that operates on the same band as the network you’re in, you won’t be able to connect. This is why some business phones work on three or even four bands.

Boost your signal. Companies such as Wilson Electronics and Larsen Antennas (www.larsen-antennas.com) manufacture a full range of antennas made for everything from rooftops to car trunks to boats. You can also purchase an aftermarket external antenna that plugs directly into your phone’s antenna port if it has one. Unfortunately, the trend for more compact smartphones has forced antenna ports from most new phones. In such cases, an amplifier may do the trick. Amplifiers such as the Wilson Sleek (\$99) use an external vehicle antenna and an amplifier (which doubles as a cradle in the Sleek’s case) that gets power from the car’s 12V outlet. You set the phone next to or into the amplifier device and communicate through the phone via Bluetooth.

Consider 4G options. With pre-4G (chiefly HSDPA, LTE, and WiMAX) and 4G technologies now coming to market, expect that these can deliver superior performance over 3G but not necessarily better reception capabilities. Environment and carrier network deployment will still determine signal quality, regardless of the technology’s potential speed. If anything, rushing into 4G could yield worse reception experiences until carriers fill in their coverage dead spots. Focus on the improvements you can make today for top reception results. ▲

Not all signal boosting methods have to be awkward or expensive.



The Shifting Mobile Landscape

Embracing The Potential & The Perils Of Smartphones

by Jennifer Farwell

As the popularity of smartphones continues to grow, the challenges and opportunities presented by these ever-more-powerful devices continues to stymie the business world. The potential of smartphones, the applications for which could let workers take and submit orders, check inventory, update contact information, and more, is tantalizing. However, the security concerns about safely enabling that access and preventing other, detrimental behaviors are considerable.

Caught in the middle are IT staff and decision makers, who walk a thin line between protecting company assets and increasing workers' effectiveness in the field. As a result, some firms lock

down (or lock out) devices that could boost their bottom line while others play fast and loose with company security. Neither solution, say third-party firms and analysts, is a long-term strategy for success.

Despite these high rates of dual-use, the attitude regarding smartphones is disconcertingly fractured. Of the businesses surveyed, 80% believed such a practice makes corporate information vulnerable to attack, yet only 52% required any form of authentication for mobile users accessing corporate information. A mere 9% imposed best practices such as two-factor authentication with one-time pass codes. Making this particularly disconcerting are statistics like those of the KRC/Synovate report, which found that 81% of respondents accessed the company network without the employer's knowledge or permission; 58% on a daily basis.

These scenarios, which European security expert Roger Dean recently called "the elephant in the room," make smartphone security a business necessity, yet many companies continue to dance around it. Why? Because employees—and increasingly businesses—cannot imagine operating without them.

Paradox Found

"With smartphones, people can do all the things they did before on their PCs," says In-Stat Chief Technology Strategist Jim McGregor. Yet, he points out, the smartphone does not have the long history of vulnerabilities that accompanied PC growth. This, he says, has lulled people into a "false sense of security."

The vulnerability quotient will only grow as more users migrate away from Research in Motion's BlackBerry line, long an industry standard due to its robust enterprise-side security. "Three years ago, if there was a smartphone policy, it was BlackBerry Enterprise Server on the back end, BlackBerry on the front end," says Karim Toubba, VP of product marketing for Juniper Networks' (www.juniper.net) Service Layer Technologies Business Group. "About a year and a half ago, we started to see Android and Apple" in the corporate environment. "People started to bring these devices into the company and demand to be able to use them," which left IT staff "caught off guard."



Juniper Networks has developed a smartphone security suite for companies that incorporates a single, central interface for all four major device types.

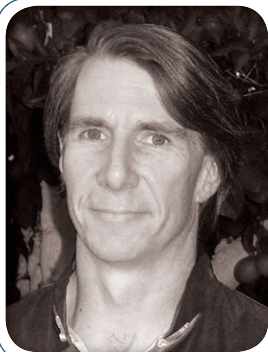
By The Numbers

If there is any doubt that smartphones have become an important fixture on the business landscape, it is quickly fading. Research firm In-Stat reported in November 2010 that the SOHO (small office/home office) sector for smartphones will grow 18% by 2014 (compared to 2010) and smartphone purchases across all business sizes will increase 14% by that time. Furthermore, according to research firm Ovum, smartphones are increasingly subject to "consumerization"—being employed for both business and personal use. According to a November 2010 report, 75% of businesses allow smartphones to be used for personal use, and 48% have employees who use personal smartphones for business purposes. (A similar study, conducted by KRC Research and Synovate for Juniper Networks, found that nearly 44% of respondents used smartphones for both personal and business purposes.)

"I cannot tell you how many companies are offering Droids or Evos or iPhones rather than BlackBerrys now," says McGregor. "We are all [using] Droids." The Verizon Droid to which McGregor refers runs Google's Android OS. That poses particular challenges, says McGregor, because there are so many different versions of the OS running on widely divergent devices. Yet, it is poised to control half the smartphone market within five years, according to research firm Piper Jaffray.

Furthermore, he notes, smartphones, unlike PCs, do not use standardized hardware configurations. "To the consumer, they look very much the same, but on the other side of the wall it is completely different," he says. "With phones, if the motherboard or graphics processor or processor core is different," he notes, "you have to specially port [rewrite to work with the hardware] the OS and applications."

That makes it far more challenging for companies seeking to develop broad-based protection for smartphones and all the applications they run. Furthermore, companies hoping to maximize the benefits of these devices can make the problem worse. "Corporations want workers to be able to use these tools," he says. "They may be customizing applications or writing applications and that can create problems of their own."



Jim McGregor, In-Stat chief technology strategist, says that "With smartphones, people can do all the things they did before on their PCs," but he cautions that this has given employees a "false sense of security."

Making It Work

Making these technologies work for the enterprise is a problem for which, McGregor says, "there is no single fix." He says companies need "multiple security barriers—the networks, the data that is remote, the applications on those devices." He says that a lot of those technologies have been around for a long time and that they will slowly move toward the mobile market.

Toubba says his firm already has a handle on a solution. Juniper, which has a user base of approximately 30 million for its secure SSL VPN (Secure Sockets Layer virtual private network)



Karim Toubba, VP of product marketing for Juniper Networks, says that "Firms are caught with the dual challenge of enabling productivity and harnessing the power of mobile devices beyond the laptop while also ensuring they can actually secure the information on the device."

corporate network access solution for laptops, extended that protection to iPhones a year ago. Then, in October, it debuted an umbrella security suite (VPN; antispam; antivirus; firewall; and remote lock, wipe, and locate) that offers a common enterprise-side dashboard for Android, BlackBerry OS, iOS, and Symbian.

Chas Arnold, VP of sales for Atlanta-based technology service provider Dynasis (www.dynasis.com), says his firm recommends a cloud-based model that enables secure log-in through Citrix or another Web portal. Dynasis also suggests clients use remote device management products paired with strong policies regarding session log-outs, code-based phone locks, and more. "If you sit your phone down and someone picks it up, they could

have access to your corporate CRM (customer relations management) software, your accounting software—any application you are running across your network server," says Arnold.

"Firms are caught with the dual challenge of enabling productivity and harnessing the power of mobile devices beyond the laptop," says Toubba, "while also ensuring they can actually secure the information and the device."

Wakeup Call

McGregor echoes Toubba's point, but is less than confident all companies will effectively avoid problems. "The threats are much more complex than they were a decade ago," says McGregor. "Companies need to look at encryption techniques on both handheld devices and the routers." Ironically, he says, many mobile processors already have security blocks built into them, but equipment manufacturers have yet to use them to full advantage. "Eventually, we are going to have a major cyber attack," he says. "Hopefully the wakeup call will be small, and the intervening advances in hardware and software will provide enough support." ▲

Archos released firmware version 2.2.1, which adds greater storage capabilities, external GPS receiver support, and more.



New For Your Tablet

The Latest Software & Updates

by Joanna Clay

The tablet market and, along with it, the market for tablet apps, is growing each day. With your busy schedule in mind, we scoured the app stores and compiled a list of some of the most important and useful apps, tablet OS updates, and app tweaks recently released.

OpenVPN support, manual white-balance adjustments within the camera app, external GPS receiver support, and slideshows via the Gallery and Photoframe apps. The firmware update is compatible with Flash 10.1.

Android Releases New "Gingerbread" Version

Android's newest OS version, 2.3 (aka Gingerbread; www.android.com) offers improved overall performance and includes enhanced multimedia and communication features. The virtual keyboard is now optimized to make entering and editing text less cumbersome, and features redesigned key shapes that display the typed characters in a larger font. The new version also manages power more efficiently by closing apps to maintain longevity in battery life.

Improved communication features include Internet calling over SIP accounts, NFC (Near Field Communication) technology that makes way for mobile payments and other applications, and download management features. Developers can add new rich audio effects (such as equalization, bass boost, and reverb controls); interact with the VP8 and WebM formats (for such things as streaming video and handling HTML5); and access any device cameras via the Camera API.

Archos Firmware Update Includes Android "Froyo"

Archos (www.archos.com) released version 2.0.54 of its firmware (free; www.archos.com), which includes an update to the Android 2.2 (aka Froyo) operating system. The 2.2.1 firmware package includes a JIT (just-in-time) compiler that's faster than that included in the previous Android 2.1 (aka Éclair) OS. Better Microsoft Exchange support includes the ability to sync contacts and calendar events. And if you are looking for more room to install third-party apps, you can now save compatible apps to the internal storage on the Android platform. This update also enables multiple selection mode within the file manager, speedier USB data transfer,



Apple is rolling out iOS 4.2 for the iPad, with 100 tweaks including enhanced multitasking, email functionality, and IT features.

100 New Features In Apple's iOS 4.2 For iPad

Apple iPad users can now download iOS 4.2 (www.apple.com) for a broad range of system enhancements. With the iOS 4.2 update in place, third-party apps are better equipped to handle multitasking between apps and to manage print jobs and push notifications. Apps running in the background can receive calls, complete tasks, and play audio. Several Mail improvements include a unified inbox view, fast inbox account switching, ICS file import to Calendar, and photo attachment size selection. In the Game Center, multiplayer enhancements make it easier to continue competition and discover new games. With the update, you can search the Web and Wikipedia using the Spotlight search utility. You can also expect new language options, dictionaries, fonts for the Notes app, and parental controls. For enterprise users, Apple has appended the iOS with third-party Mobile Device Management support, wireless app distribution, and Exchange Server 2010 compatibility, as well as Juniper Junos Pulse and Cisco AnyConnect SSL VPN app support.

Windows Anytime Upgrades Windows 7 Starter

Appropriate for both 32-bit and 64-bit versions of Windows, Microsoft's Windows Anytime Upgrade (pricing varies; www.microsoft.com) makes it possible to convert Windows 7 Starter to Home Premium. Windows 7 Starter is an OS designed for netbooks, but you can add more personalization and access more productivity features with Home Premium. Minimum system requirements for the Home Premium upgrade include a 1GHz processor, 1GB RAM, 16GB of hard drive space, and DirectX 9 graphics. The upgraded version lets you watch TV on your PC and establish a home network on which you can share multimedia. The HomeGroup network supports multiple PCs so you can print documents from a single printer on the network.

Samsung Announces Galaxy Tab OTA Update

Sprint's version of the Samsung Galaxy Tab is ready for the DJ30 upgrade (www.sprint.com), which is available as a free OTA (Over-The-Air) update. If your Galaxy Tab currently features DJ14, the DJ30 notification will indicate the device's upgrade readiness. The changes within DJ30 affect messaging, video chat, and IT support. For example, you'll notice new modifications to SMS Short Code texts (and messages sent via Wi-Fi), Microsoft Exchange IT compliance, and Qik video chat.

Agendas App Makes Meetings Less Boring

Devised to help meetings stay "productive, timely, and enjoyable," Brian Stucki's Agendas 1.0 (\$9.99; available in the iTunes Store) organizes your presentation and includes the capability to wirelessly broadcast the full presentation as an interactive, collaborative meeting. Meeting members using iPads can enter the four-number security code to join the administrator's presentation in order to ask questions. The interface includes a sidebar for attendees to submit questions and vote them into the top questions list; the presenter may integrate them directly into the agenda. A blue time line runs at the top of the screen, to keep the meeting on schedule. In version 1.1, users will be able to export full agendas to PDF and email.



The Agendas app for the iPad is a presentation tool that lets meeting attendees join and comment on the presentation.

NYSE & NASDAQ Quotes On iPad Via CNBC

The free CNBC Real-Time For iPad app (available in the iTunes Store) pushes real-time NYSE and NASDAQ quotes to your iPad before, during, and after market hours. You can customize the charts with your preferred timeframes, whether it's a single day or five years. Plus, the advanced charting feature lets you add index comparisons and upper or lower indicators. The Real-Time Personal Ticker streams favorite stocks, CNBC Stocks To Watch, Indices, and Top Headlines/Video Lists. With My Stocks, you can create a Watchlist for favorite companies to see pre- and post-market trading. The Watchlist integrates charts, returns, news, and video headlines, as well. There is plenty of news to absorb via video with interviews (100 guests per day in the U.S.) and clips from CNBC's Global TV Networks.



CNBC has released the CNBC Real-Time iPad app for tracking stocks beyond market hours. CNBC Real-Time helps you watch pre-markets, movers, commodities, currencies, bonds, Dow impact, and more.

An iPad Notetaker For Every Compartment Of Your Life

The new NotePad Pro (\$1.99; available in the iTunes Store) app from iTech Development Systems distinguishes itself from other note-taking apps by combining three methods of documentation: tactile notes, sketch drawings, and audio recordings. The interface looks like a standard virtual legal pad augmented by a row of option buttons at the top of the page. Among other options, you can select paper style, drawing color, pencil size, and eraser size. The audio note feature allows you to resume or overwrite an existing recording. If you want to forward your notes to a colleague, you have the option to email them in PDF format. You can also email audio notes as WAV files. ▲

NEW

For Your Smartphone

The Latest Software & Updates

by Nathan Lake

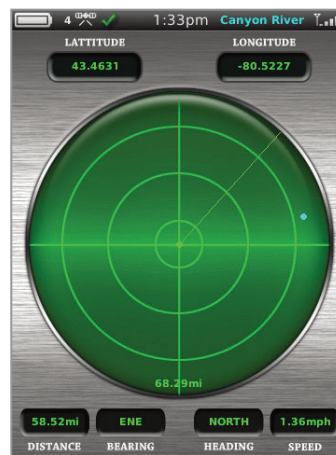
You probably rely on your smartphone for many things, but with new software and updates, you can improve both the efficiency and functionality of your mobile phone. We'll detail the most popular newly released software and key updates to help you maximize your smartphone's ability to help you when you're on the road.

New For Android

Google introduced version 2.3 of its **Android OS** (aka Gingerbread) to developers. That means it won't be long before the OS begins appearing on devices. Google has refined the interface to be more power-efficient and user-friendly. For example, with the new OS, you'll be able to copy and paste with one touch: just press and hold a word to bring up the free-selection highlight mode and select the text you want to copy. Version 2.3 also works harder to shut down apps that run in the background and consume your phone's battery life. New features in Android 2.3 include a way to make Internet calls to others with VoIP services, so you'll have another way to communicate with clients. NFC (Near Field Communication) support allows other devices with NFC components to provide proximity-based information and services to you.

Google Maps 5.0 (free; www.google.com) delivers two cool new features: 3D imagery and offline reliability. Rather than a flat map, the interface tilts when you zoom in to a low level, and the 3D buildings become a skyline. Note that this feature is only available for the 100-plus cities Google has created 3D maps for. Google indicates that the new maps will require less data, so you can now cache the areas you use most on your phone and access the map even when your phone can't access a data connection.

Users of E*Trade will enjoy the new **E*Trade Mobile Pro** (free; us.etrade.com) app. You can securely buy, sell, or place orders from your Android phone, as well as track the markets in real time.



QuickFind helps you get back to or locate a specific place.

E*Trade Mobile Pro is completely integrated with your online account, so you can view your current holdings and balances. The app lets you trade stocks during both regular market and extended hours sessions.

Version 2.0 of **Kindle For Android** (free; www.amazon.com) from Amazon gives you the ability to buy, read, and sync up with the more than 100 Kindle-supported newspapers and magazines. You can buy a single issue or subscribe to the popular publications for automatic delivery. Other new features include the capability to buy and download Kindle books within the app, so you no longer need to open your Web browser and search Amazon to find a book.

New For BlackBerry

Do you often have a hard time finding your car or rental? Maybe you need to meet up with colleagues at a pre-arranged location? With NikkiSoft's **QuickFind** (\$1.99; www.nikkisoft.com), you can mark a location and QuickFind will use your BlackBerry's GPS receiver to direct you to the spot. You can enter a location by marking the current spot or entering an address where you want to end up.

Monitor For BlackBerry (free; www.monitorforblackberry.com) from AstraSync charts your phone's memory use, battery life, and signal strength to show you which system resources and places are draining your BlackBerry's battery. Monitor For BlackBerry



Android 2.3, aka Gingerbread, is the newest version of Android.

also displays how much memory you have left in your BlackBerry, as well as exactly how much battery power remains.

If you're looking to save minutes on your data plan or on international calls, consider **fgVoIP** (\$39.37; www.fgmicrotec.com) from fg microtec. You can make and receive voice calls using your BlackBerry's data connection over a variety of SIP (Session Initiation Protocol) providers, such as Vonage, Cloudnet, or Localphone. fgVoIP includes a Click2Dial feature that routes calls over VoIP when your BlackBerry is connected to Wi-Fi.

Version 4.3 of **IM+ Talk For BlackBerry** (\$29.95; www.shapeservices.com) adds VoIP over 3G/EDGE support to let you make Skype calls on your BlackBerry. And when connecting via a wireless carrier's network, you can still make calls using Skype credits. Calls made to Skype users to their PC are free, no matter where they are located. IM+ Talk For BlackBerry also displays which Skype users are online, so you can easily see who's available.

New For iOS

SmartSync (\$1.99; www.ul timake.com) from Ultimake syncs your iPhone with Facebook. When you use this app, you will see a contact's most recent Facebook profile picture in your iPhone Contacts list. This handy app also fills in contact information, such as their birthday, current address, company, and job title, which appears in your contact's Facebook profile.

Word Lens (\$9.99; quest visual.com) from Quest Visual is one of the coolest new apps around, because it translates words and phrases from one language to another in real time. Just point your iPhone camera at the sign or label you want to read, and the words change into the language you prefer on-screen. There are currently Spanish To English and English To Spanish versions. Quest Visual is working on European languages, which would make this app ideal for international business travelers.

The PrintJinni (free; www.thinxstream.com) app for Epson lets you print any Microsoft Office, PDF, or JPG email attachments to an Epson Wi-Fi

all-in-one printer. No longer will you need to connect your iPhone to a PC or remove the memory card to print email attachments from your iPhone.

If you regularly drive in areas that you can't get a data connection, check out **NavFree USA** (free; www.navmii.com) from Navmii. This free application offers 1.6GB of offline map data to give you the ability to get around with your iPhone in a poor or dead signal area. You'll get turn-by-turn directions and even be able to share your position via SMS, email, or Twitter.

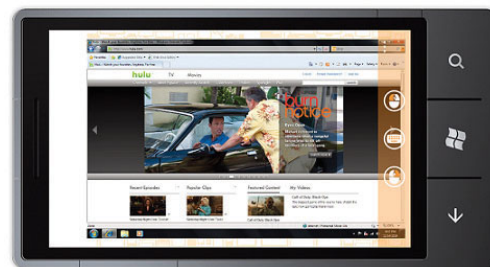
New For Windows Phone 7

Thefastmarket announced **Remote Desktop For Windows Phone 7** (\$14.99; www.thefastmarket.com) to let you connect to your home or work desktop from your phone. You'll be able to control your PC's keyboard, mouse, and screen, which is ideal for those people who need quick access to a productivity app on their PCs. Users can also use the pinch gesture feature to zoom in and out on a particular area of the screen.

Microsoft released version 1.1 of **Facebook For Windows Phone 7** (free; www.microsoft.com), which adds Facebook Places and in-app photo tagging. Facebook Places is similar to FourSquare in that you can broadcast your location. The tagging feature also lets you identify other people who are with you in a post.

MyThings (\$1.99; www.mythingswp7.com) is designed to help you store, remember, manage, and share your tasks in Windows Phone 7. In version 2.0, MyThings adds a map with your current position and color codes for the various types of tasks you need to do.

If you blog on WordPress, you will want to install **WordPress For Windows Phone 7** (free; windowsphone.wordpress.org). You can write new posts, edit the content of your blog, view stats, and manage comments all from your Windows Phone 7 device. ▲



Remote Desktop lets you access your home or work PC from a Windows Phone 7 device.



Word Lens translates words and phrases in real time using the camera on your iPhone.



Bento For iPhone

A Portable, Personal Database

WHETHER YOU USE FileMaker's well-regarded Bento For iPhone app (which also supports the iPod touch) as a standalone option or in combination with the Bento desktop version for Macs (sold separately), you're getting a portable personal database that comes complete with more than two dozen predesigned database templates. Depending on the template, you can plan events, keep track of a home inventory, log favorite recipes, and much more from your iPhone.

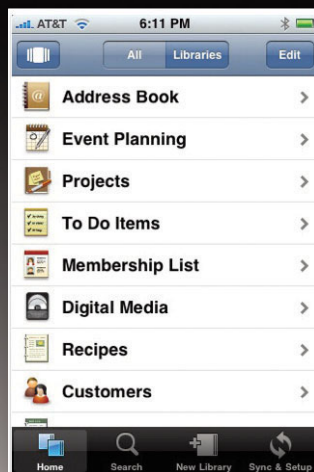
Among the 25 included templates you can tap into are Classes, Contacts, Events, Files, Notes, Products, Projects, To-do List, and Vehicle Maintenance. The app also provides customization options so you can tweak the templates to your liking. The various file types the app supports, meanwhile, make it possible to store text, numbers, dates, audio, video, email addresses, Web sites, IM accounts, phone numbers, and other data.

One slick feature of Bento is its direct integration with the iPhone's pre-installed Contacts, Safari, Mail, and Google Maps apps. Thus, you can, say, display a map, launch an email message, or open a Web site with a tap from within a Bento database field. Overall, the app has a decidedly Mac software feel about it in its presentation, use of icons, and organizational tools.

In addition to providing search and sorting abilities patterned after iTunes', the app allows for syncing with Bento 2.0v5 and Bento 3 desktop versions, although FileMaker indicates doing so requires a Wi-Fi connection. Additionally, the iPhone's memory limitations can limit support of some larger databases created in Bento's desktop program, FileMaker states. Also noteworthy is that iCal-related events and tasks aren't accessible from the application.

FileMaker provides an iPad (\$4.99) version of the Bento app.

Price: \$4.99 | Size: 5.1MB | Release Date: April 6, 2010

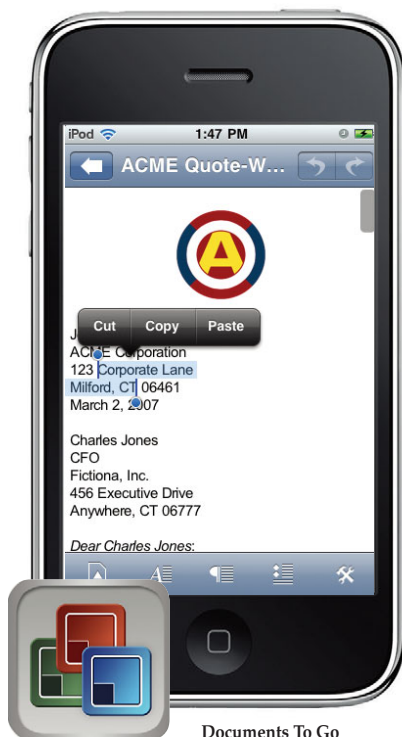


Why You'll Want This App

- Predesigned database templates for portable personal management tasks
- Integrates with the iPhone's Mail, Contacts, Safari, and Google Maps applications
- Works as a standalone option or syncs with Bento desktop versions for Macs
- Supports numerous file types
- Templates support customizations

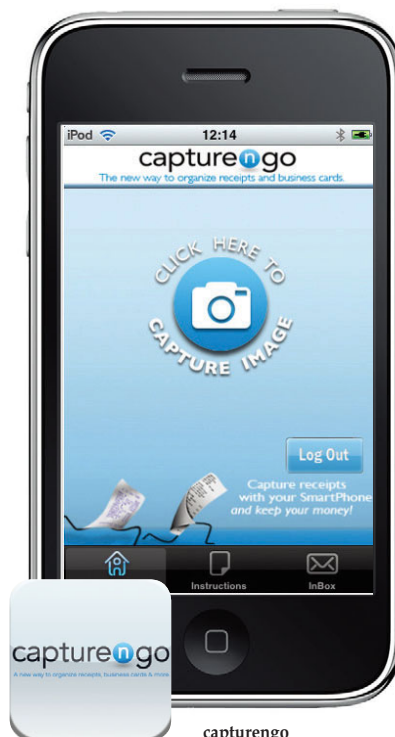
MOBILE OFFICE BUSINESS ON THE ROAD

IPHONE APPS



Documents To Go Office Suite
\$9.99 • 9.3MB

DataViz's Documents To Go Office Suite (Rel. Nov. 10, 2010) lets you view, edit, and create Microsoft Word and Excel documents. You can view PDFs and PowerPoint presentations, as well.



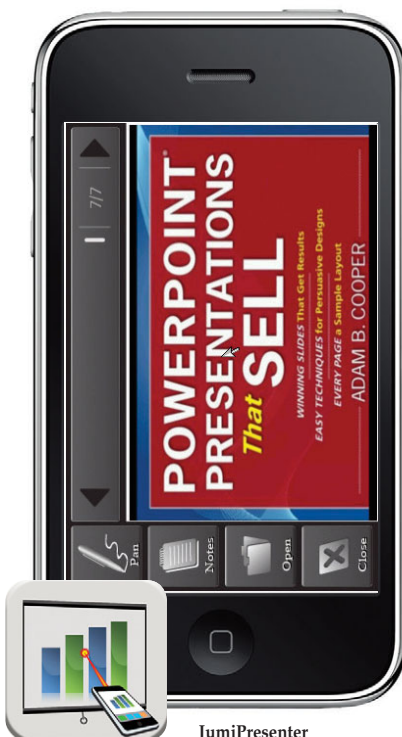
capturengo
Free • 2MB

capturengo (Rel. Oct. 8, 2010), from the developer of the same name, lets users take a mobile photo of a receipt or business card, add a note, and upload it to a secure cloud-based account. The service then reads, records, and stores the data on the document.



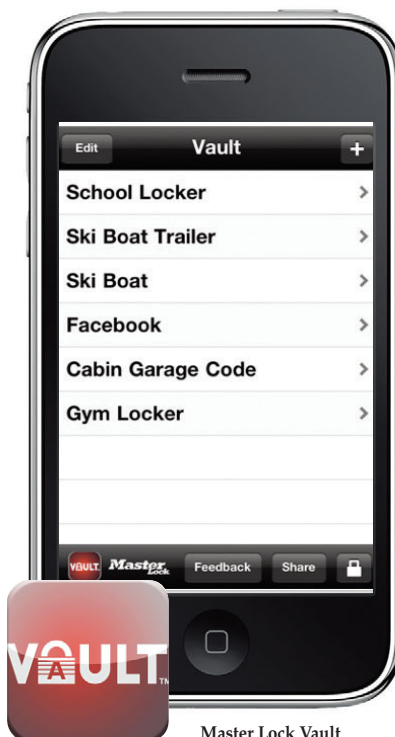
Yellowfin
Free • 2.1MB

Yellowfin (Rel. Dec. 8, 2010) offers browser-based Business Intelligence and Dashboarding that lets users author reports, work with data, and generate corresponding visual aids. It also gives users access to their KPIs.



JumiPresenter
\$5.99 • 2.2MB

JumiPresenter (Rel. Nov. 23, 2010) by JumiTech turns an iPhone into a remote control for presentations, letting the user navigate and make annotations. The app uses a Wi-Fi, 3G, or EDGE connection.



Master Lock Vault
Free • 1MB

Master Lock Vault (Rel. Oct. 19, 2010) connects with a user's online Vault account to store lock combinations. The app is username- and password-protected, and combinations are simple to look up.



Frommer's Travel Tools
Free • 10.7MB

Quick Mobile's Frommer's Travel Tools (Rel. June 28, 2010) provides travelers with a number of handy tools, including a tip calculator, a packing list, a currency and unit converter, city guides, and a time translator.



Lookout Mobile Security

An All-Around Backup, Security & Missing Device Guru

If you own a BlackBerry there's a good chance you're familiar with Lookout Mobile Security because, by Lookout's count, there are 3 million users covering 400 mobile networks in 170 countries using the app. The app offers free antivirus and malware security for apps, contact and photo backup, mapping and alarm tools to locate missing devices, remote data wiping, and an online dashboard manager to oversee it all.

Getting the app is as easy as heading to www.mylookout.com or (m.mylookout.com via mobile browser) and clicking the Download button on the home page. Provide your device's phone number and Lookout sends you a text message containing a download link. Setup is quick and painless, but once you install Mobile Security, you will need to create an account by providing an email address and creating a password.

From here the Backup tool lets you copy on-device contacts and photos to Lookout's cloud storage. The data is encrypted before the transfer, and you can configure backups to run automatically. The same is true of Security, which scans apps on the phone for viruses, malware, and spyware and can push automatic security updates to your device. If your phone becomes lost or stolen, the extremely handy Missing Device tool displays your phone's location in Google Maps. You can also enact a Scream function remotely to sound an especially loud alarm on the phone. And you can use the Wipe feature to remotely erase data on the device if you're worried about sensitive information falling into the wrong hands. Further, you can configure Lookout to notify you via email when the device is located and keep a history log of the phone's location.



Price: Free | Size: 1,246KB

Release Date: Oct. 1, 2010



MOBILE OFFICE BUSINESS ON THE ROAD

BLACKBERRY APPS



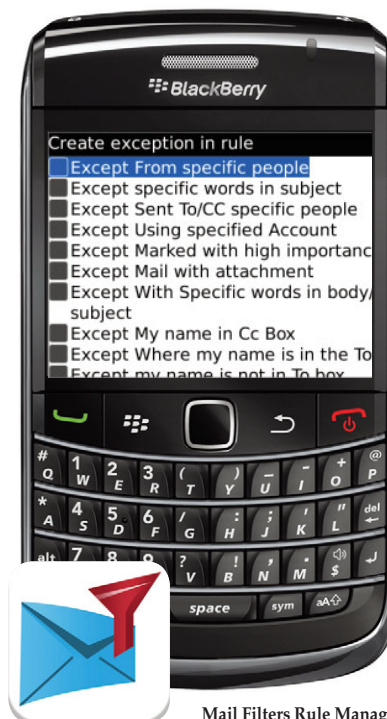
IBM Storage Mobile Quick Reference
Free • 110KB

Maximum Press and IBM created IBM Storage Mobile Quick Reference app (Rel. Oct. 4, 2010), which features IBM System Storage information, as well as full descriptions and pictures of each product.



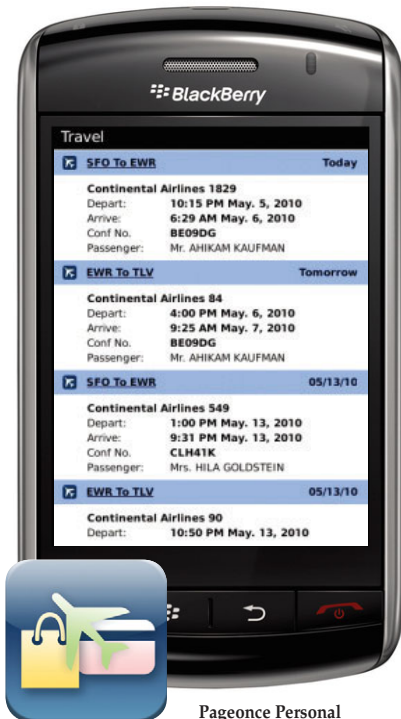
Mobile Package Tracker
\$3.99 • 336KB

MinsTech's Mobile Package Tracker (Rel. Jan. 5, 2011) lets you track shipments made through more than a dozen carriers in the U.S. and overseas, including FedEx, UPS, and USPS. Search for individual packages or view multiple shipments on a single screen.



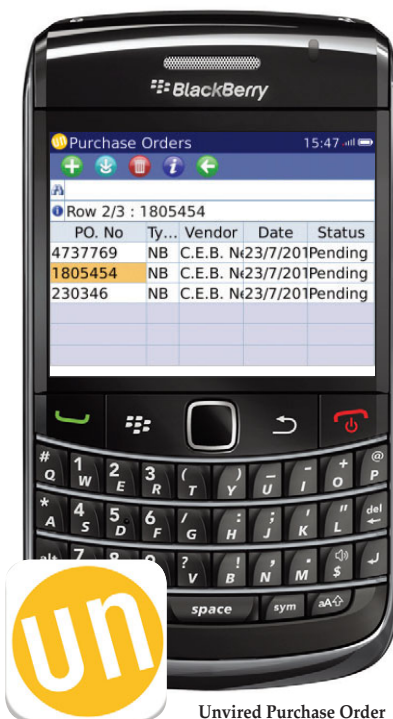
Mail Filters Rule Manager
\$2.99 • 188KB

Ajani InfoTech created Mail Filters Rule Manager (Rel. Feb. 3, 2010) to help users create multiple filters for incoming emails. You can create exceptions for each filter and set up what actions to take when messages make it through the filter.



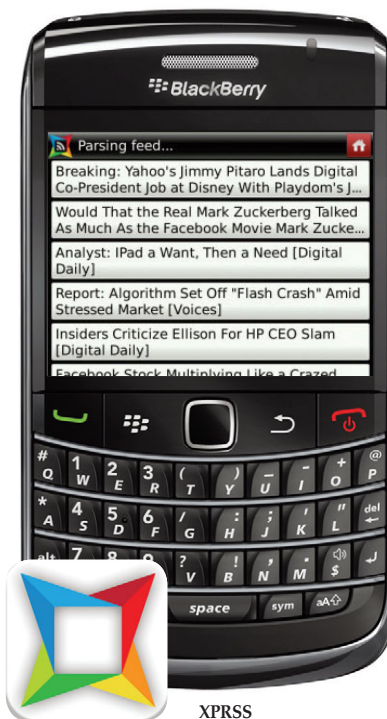
Pageonce Personal Assistant
Free • 1,134KB

Pageonce Personal Assistant (Rel. Nov. 9, 2010), from Pageonce, lets you monitor your credit card transactions, view billing statements, and more.



Unvired Purchase Order for SAP
Free • 248KB

Unvired Purchase Order for SAP (Rel. Aug. 11, 2010) from Indience InfoSystems lets you approve purchase orders, reimbursements, and more.



XPRSS
Free • 547KB

STRATMobile's XPRSS (Rel. Dec. 21, 2010) is an RSS feed reader with multiple, customizable options. You choose which feeds to follow and share them via email or social networking sites.

A close-up photograph of a woman with curly brown hair, looking down at a smartphone she is holding. She is wearing a light blue button-down shirt under a tan blazer. The background is a blurred blue and white.

SMARTPHONE Tips

Do More With
Your Mobile Phone

by Andrew Leibman

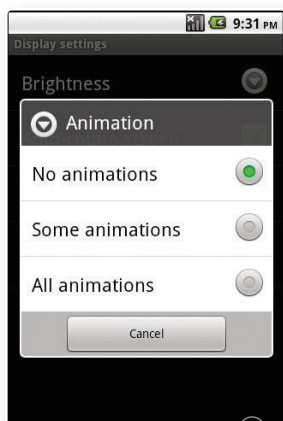
■ Android

RETURN UNWANTED APPS

The Android Market lets you return apps you purchased for a complete refund. For those of us who've gotten used to the generous 24-hour grace period, however, you may be in for a surprise; the Android Market has recently revised its return policy and you now have just 15 minutes to return unwanted apps for a full refund. If you do purchase an app and decide quickly that you don't want it, you can return it for a refund by accessing the Android Market, pressing the Menu button, selecting Downloads, and then selecting the app for which you'd like to get a refund. If you're still within the 15-minute grace period, then you will see an Uninstall & Refund button. Simply tap it to proceed. If the grace period has expired, your only option will be to uninstall the application. If you still want a refund, the Android Market Help site recommends you contact the app publisher directly. Good luck with that.

TURN OFF ANIMATIONS

Sure, the animated menus are part of what makes smartphones so eye-catching, but if you prefer to access apps and navigate menus more quickly, you can disable animations and significantly improve performance (and slightly improve the battery life). To disable animations on your Android-based device,



You can give your phone a nice little speed boost by disabling animations.

press the Menu button, select Settings, Display, Animation, and then tap No Animations (or, if you want a performance boost but you're still fond of the fancy visuals, choose Some Animations). Press the Back button to return to the Home Screen.

AUTOMATICALLY & MANUALLY MERGE CONTACTS

Android users can make short work of merging contacts, or combining the multiple duplicate entries for a single person that commonly

occurs when you import contacts from multiple sources. To automatically combine contacts, log into your Gmail account on a PC, click Contacts, click the More Actions button at the top of the screen, and then select Find & Merge Duplicates. When the action has been completed, Gmail provides you with a report of how many contacts were added and how many of the contacts were merged. Typically, a handful of contacts will not be merged, but you can manually link these from your Android device. Start by tapping the Contacts icon on the Home Screen, tap a contact you want to manually merge with another, press the Menu key, tap Link Contact, begin typing the name of the second contact, and then scroll to and tap the appropriate entry from the screen. Repeat this process for each of the remaining contacts you need to manually link.

BlackBerry

UNIVERSAL SEARCH

When you've begun to rely on your BlackBerry for work, play, and everything in between, it's common to lose track of emails, contacts, and apps. Thankfully, you can access this content on your device quickly and easily by performing a universal search. Start by making sure you're looking at the Home Screen and then just start typing. Matching results will appear as you type. You can also press the Menu key and access the Search app to

take more control over the search process. Just check the box beside the location you want to search, and then type in the Text or Name fields.

PING A CONTACT

BlackBerry Messenger has a unique feature that lets you notify fellow Messenger users that you'd like to chat. First add one or more contact(s) to your BlackBerry Messenger account by pressing the Menu button, selecting the Instant Messaging folder, and launching the BlackBerry Messenger. Press the Menu button again; select Add A Contact; and then type the PIN, email address, or name of a BlackBerry Messenger-enabled contact. You can edit the confirmation request text or leave it as-is; when you're ready to send the request, just select Send. Once confirmed, you'll be able to see when



Universal Search on the BlackBerry can help you find what you need fast

SPELL CHECK

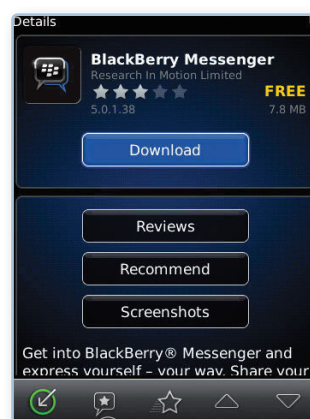
Just because you're using a cell phone to type your emails doesn't mean people will forgive your spelling errors. And if you're using a BlackBerry to type your emails, you really have no excuse because a spell check feature is available. To spell-check a message, calendar entry, task, or memo, just type the message, press the Menu key, and select Check Spelling. The spell checker highlights words not in the dictionary and lets you scroll to and select the appropriate spelling.

the contact is available for chat. Sending the contact a Ping makes their BlackBerry vibrate, notifying them that you want to chat. To use the Ping Contact feature, highlight one of your confirmed BlackBerry Messenger contacts, press the Menu key, and then select Ping Contact.

iPhone

IPHONE MULTITASKING

The latest version of iOS (version 4) features a new multitasking scheme that lets you run multiple apps at once, and freely switch between them at any time. When running two or more apps, simply double-tap the Home button to view the recently used apps menu along the bottom of the screen. If you scroll to the right, you can see more apps. When you've found one you want to start using again, just tap its icon on the multitasking menu; the app will fill the screen, letting you immediately resume your activity right where you left off. Press the Home button again to close the multitasking interface and return to the app you were using when you first opened the multitasking menu.



To Ping your BlackBerry Messenger contacts, first make sure you have the app on your device.

This also lets you use an app such as Pandora or iheartradio to listen to music in the background and leave the app to check email, browse the Web, or work on a document. You can also use iOS 4-enabled devices to make or take VoIP calls using third-party apps such as Skype. And just like when you're on a traditional voice call, you can continue the call while opening the browser, accessing email, or launching another app. GPS-based apps, such as Google Maps, can also remain running in the background and continue to update your position while you perform tasks using other apps. Mapping apps that provide turn-by-turn narration can also resume this capability while running in the background. Another benefit of iOS 4's multitasking includes alert and message delivery from third-party apps and services such as sports scores,

news updates, game requests, reminders, and alarms. You can also perform tasks in the background, such as downloading files while browsing the Web. Make room for more apps!

IPHONE FOLDERS

If you're running iOS 4 on your iPhone, you now have the ability to create folders to group similar apps, which is a great way to cram more apps onto the Home screen. To create a folder, simply touch and hold your finger on an app icon until it begins to jiggle, and then drag it over a similar app you want to put in the same folder. Now, the two apps will appear on the home screen as two smaller icons in a box. To access one of the apps, just tap the folder, and then tap the icon on the menu that drops down. Simply tap and hold another app and drag it to the folder to add it. Repeat this to add as many as 12 apps to a single folder. Your iPhone supports up to 180 folders.

If you use folders to group similar apps, the iPhone will automatically assign a name for the folder, for instance, a folder that contains Twitter, Facebook, and MySpace apps will be called Social. If you don't group similar apps or just want to rename the folder as you see fit, tap and hold an app icon on the Home screen until the icons jiggle, tap the folder you want to rename, tap the folder name, type a new name using the onscreen keyboard, and then press the Home button to save the new name.



Folders on the iPhone let you group similar apps.



Ovi Chat helps keep you constantly connected.

Symbian

OVI CHAT

Instant messaging apps are a dime a dozen, but to get Nokia's latest take on the formula, log into the Ovi Store and download it to your device. If you don't have an Ovi Store account, Ovi Chat is a good reason to sign up for one. The Ovi Store account also grants registered users the ability to sync your smartphone with Ovi to share photos and videos, back up and edit contacts and the calendar, access files, plan a trip and sync your route, download apps that expand your phone's capabilities, and more.

USE UNIVERSAL SEARCH TO FIND APPS

There are tons of apps available for webOS-based devices. If you happen to install a good number of them, you might have trouble finding them when you want to use them. To speed the process of finding apps, try using universal search. If you know the title of the app you're looking to launch, just start typing it, and universal search screen will appear with matching titled apps listed at the bottom. As soon as you see the app you want, tap the icon to launch it.



Find apps quickly using Universal Search.

To access the Ovi Store, you have to sign up for a Nokia Account using a username and password. To get started, launch your mobile browser, type **store.ovi.com**, and then press the Go To key. This will launch the Ovi Store app if you're running the latest version, or take you to the Ovi Store download page if you aren't. In the latter case, click the download link and install the latest version of the Ovi Store. Once you've launched the Ovi Store app, click the Register link and follow the onscreen instructions to complete the registration process. If you registered with your mobile number, Ovi will confirm your account with a text message sent to your device. Simply open the message, select the link, and connect to the Web when prompted to complete the activation. Now, just click the Sign In Now icon to access Ovi. Now, you can download and install the Ovi Store application by clicking the appropriate link. Once installed, launch it and select the search box, type **ovi chat** and select Search to locate the app, and click the download button to install it on your phone.

You can also have the app delivered wirelessly to your phone by visiting **store.ovi.com** using your PC's browser. Start by logging into your account, typing **ovi chat** into the search box in the top-right corner of the screen, and pressing ENTER. **Ovi Chat – IM On The Go** should be one of the top results; click it and then click the Send To Mobile button on the top-right corner of the screen.

■ webOS

UNINSTALL APPS

By now you've probably become an expert at installing apps on your webOS device, but getting rid of them may be a bit less intuitive. To uninstall apps, start by pressing and holding the orange (or white) button, then tap the application icon that corresponds to the app you want to toss. Next, tap Delete to complete the removal process. Make sure you want to get rid of the app when you tap Delete, because after you tap Delete the app will be removed from your phone without so much as a confirmation screen.

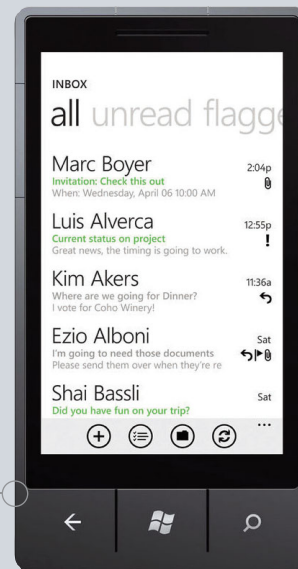
CONTROL MUSIC WITH WIRED HEADPHONES

If you use wired headphones to listen to music on your webOS-based device, you can use the end call button located near the microphone to perform some very basic functions. When listening to a playlist, press the "end call" button on the headphones to pause

DELETE EMAIL IN BULK

To quickly delete a single email, on Start, tap an email account that has the unwanted email(s), tap on the email you want to delete, and then tap Delete. To trash multiple emails simultaneously, tap to the left of the email author to display a row of checkboxes beside each email. Next, tap the checkboxes that correspond to each email you want to delete and then tap the Delete icon (a trash can) to complete the operation.

You can batch delete emails on Windows Phone 7 devices.



WINDOWS PHONE 7

playback. Press it again to resume play. To skip to the next song in the playlist, quickly press the end call button twice.

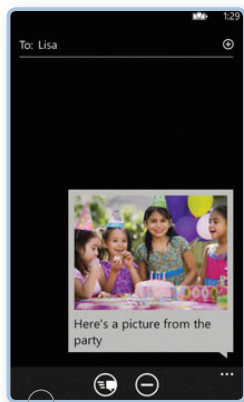
■ Windows Phone 7

SHARE IMAGES IN TEXT MESSAGES

With Windows Phone 7, it's easy to add an image to a text message, which makes it an MMS (Multimedia Messaging Service) or multimedia message. To compose and message with a fresh photo, on Start, tap Messaging and New. Type the message recipient's name, mobile phone number, or email address in the To field; tap Attach; and then tap Camera. Then press the camera button to take a picture. Tap Accept, tap the message box, type your message, and tap Send.

You can also send text messages with an image from your saved Pictures folder. To do this, on Start, tap Messaging and New. Type the message recipient's name, mobile phone number, or email address in the To field; tap Attach; and then tap the album that contains the picture you want to send. Select the picture you want to share, tap the message box, type your message, and then tap Send.

You can also perform this operation from the Pictures hub. On Start, tap Pictures, tap the album that contains the picture you want to send, tap and hold the picture, tap Share, and then tap Messaging. Input the recipient's name, phone number, or email address in the To field, tap the message box, type a message, and then tap Send. ▲



It's easy to turn a text message into an MMS.

WEB

Web Notes

New & Updated Sites & Services

by Seth Colaner

When you're away from the office, your productivity doesn't have to stop. The Web is exploding with mobile sites and online services, including office tools, news alerts, entertainment, and any number of other useful items. Just as quickly, it seems, others go under, are bought by larger companies, or simply evolve into something different. We've found some of the freshest and most useful sites, services, and updates for you to consider.

Free Service Helps You Locate Your Apple Device

Once available exclusively through Apple's paid MobileMe subscription, the company is now offering free Find My iPhone to iPhone 4, iPad, and iPod touch devices running iOS 4.2 for free.

You can use Find My iPhone to locate a lost or stolen iOS device on a map; send a message to the phone that will display on the device's screen; remotely lock the device in the event that an unknown person gains access to your phone; and in a pinch, you can even remotely wipe the device of all your data and personal information. Should you happen to recover a wiped device, you can restore your data from a previous backup.

Google Cloud Connect For Microsoft Office

Google's acquisition of DocVerse (www.docverse.com), an online tool that lets users edit Microsoft Office documents, is bearing fruit. The DocVerse team has ported its software to Google

and has renamed it Google Cloud Connect for Microsoft Office.

The idea is that users can work on Microsoft Office documents offline and then sync them to the Web for online availability, thus leveraging the benefits of

both Microsoft's familiar and powerful office software and Google's online convenience. Once you place the documents online, multiple users can edit them. Google Cloud Connect for Microsoft Office is currently in beta.

Windows Live Spaces Moves To Wordpress

Blogs hosted at Windows Live Spaces are being moved to WordPress (www.wordpress.com). Over the course of the next several months, Windows Live Spaces users who agree to move can use a special importing tool to make the transition simpler. According to WordPress, the number of new members each month has spiked to more than 900,000, more than double the previous monthly figure of around 400,000 before the sites started moving.

If you attempt to create a new blog via Microsoft Live Spaces now, the program will prompt you to start a WordPress blog instead.

Social Media, Social Causes

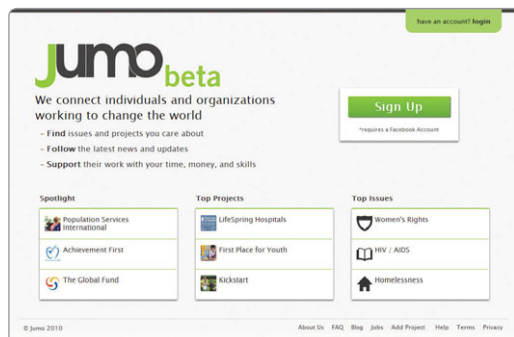
A new startup called Jumo (www.jumo.com), still in beta, is a social networking site designed to help charities raise funds. The company's goal is to connect willing donors who aren't sure exactly how to give money to their preferred causes to charities that are in need of donors.

The site leverages Facebook integration and lets users find and follow their charities of choice, receiving updates while being given the opportunity to give. Users can follow individual charities or follow an area of interest, such as women's rights, homelessness, and microlending, among many others.

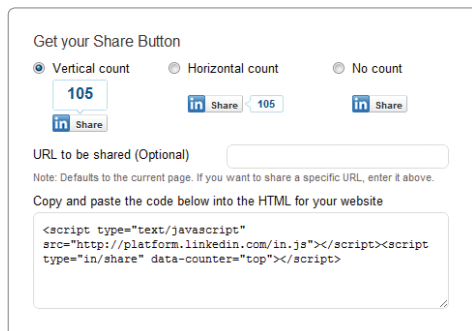
To donate, users simply click the Donate button on a particular charity's page, enter basic contact information, their donation amount, and a credit card number.

LinkedIn Adds A Share Button

As part of the professional social networking site's push toward better social capabilities, LinkedIn (www.linkedin.com) has added the ability to embed a LinkedIn share button to Web sites. Much like the



Jumo leverages social media tools to connect charities to would-be donors.



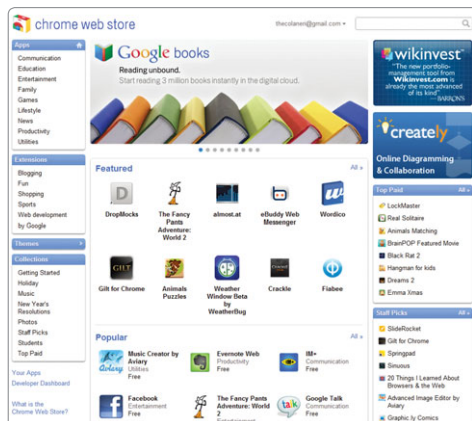
In an effort to further its social presence and capabilities, professional networking site LinkedIn has added a share button that you can embed in the coding of your HTML Web site.

familiar row of Facebook, Twitter, and other share buttons you may see on some sites, the LinkedIn share button provides users a quick and easy way to share whatever they're reading with people in their LinkedIn network.

Users can choose between three different styles of share button—a vertically oriented button with a counter, a horizontally oriented button with a counter, and a horizontally oriented button with no counter.

Chrome Web Store Launch

To coincide with the unveiling of Google's long-awaited Chrome OS and Chrome OS notebook, the company introduced the Chrome Web Store (chrome.google.com/webstore). Although



Google announced the Chrome Web Store, launched in conjunction with Chrome OS and the Chrome OS notebook pilot program.

designed to work as part of Chrome OS, users can also access and use the Chrome Web Store via the Chrome Web browser.

The Chrome Web Store lets users browse, search for, and install Web apps and extensions. Apps

categories include Communication, Education, Entertainment, Family, Games, Lifestyle, News, Productivity, and Utilities. Under the Extensions heading, users can access tools in the categories of Blogging, Fun, Shopping, Sports, Web Development, and extensions by Google. There are also a number of Chrome themes available.

For the user overwhelmed by choices, the store has a section called Collections where you can view and install Web apps suitable to a certain grouping, such as Getting Started, Holiday, and Staff Picks. Many of the apps are free, and although some apps are simply links to Web sites, others link to optimized sites, tools, and services.

Small Business Fundraising Online

Recently launched startup ProFounder (www.profounder.com) is a site where small-business entrepreneurs can raise funds through a community-based approach. People seeking to raise money can conduct a private or public fundraiser. Users can raise funds from friends, family, and the community, or solicit funds from the general public. Setting up a fundraiser requires some simple financial information. With public fundraising, you can also choose a non-profit to partner with; that partner will receive the remaining money made after the investors have been paid their maximum cap, which is 100% of their initial investment.

The design is intended to spread out financial risk among many parties, thus reducing the risk assumed by any one individual. And because users can set their own terms, they have more control over the process.

Fuze Meeting

Online communication site Fuze Box (www.fuzebox.com) announced the addition of multiparty videoconferencing to its Fuze Meeting product. Dubbed "Fuze Presence," the new tool lets users join a conference via virtually any Internet-connected, camera-equipped device, including mobile devices. Still in private beta, Fuze Presence lets users conduct Web video conferences in HD, regardless of whether the participants are positioned at a desktop computer. Features include support for VoIP, as well as screen sharing and content sharing. ▲



New startup ProFounder provides a simple platform for small-business owners to raise funds through crowdsourcing.

Audio & Video

by Blaine Flamig

Notes



ARCHOS GOES TABLET CRAZY

■ The updating that Archos (www.archos.com) performed on its line of home and Internet media players before 2010 came to a close and included the release of a 7-inch Archos 70 Internet Tablet (\$349.99) complete with a whopping 250GB hard drive. Despite housing a 250GB drive (an 8GB flash memory-based Archos 70 is also available for \$274.99), Archos states that the 70 is “still the slimmest

and the lightest on the market” as it measures 0.5 inches thick and weighs a mere 14 ounces. The Archos 70 comes with a

1GHz ARM Cortex A8 CPU, Wi-Fi (802.11n) and Bluetooth integrated, 1GHz CPU, Flash 10.1 compatibility, support for tethering a 3G smartphone Internet connection, Web cam and microphone, HDMI-out ability, wireless PC streaming, and 720p HD playback. The 7-inch capacitive multitouch display, meanwhile, supports an 800 x 480 resolution. Elsewhere, Archos has added the Archos 28 Internet Tablet (\$99.99) to its stable, hailing the 2.8-inch device as “the first Wi-Fi connected Android device below the psychological \$100” mark. The new 3.2-inch Archos 32 Internet Tablet, meanwhile, runs \$149.99.

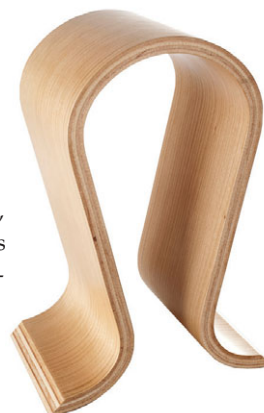
SAMSUNG ANNOUNCES GALAXY-FLAVORED MEDIA PLAYER

■ If you’re one of the many who have taken to Samsung’s (www.samsung.com) Android-based Galaxy Tab and/or Galaxy S smartphone, there’s a great chance you’re going to

OMEGA GIVES HEADPHONES A FIRM SHOULDER

■ Forget for a moment that at \$179.99, the Sieveking Sound Omega Headphone Stand costs more than many headphones mobile users are likely to consider. Concentrate instead on the fact that German manufacturer Elusive Disc’s (www.elusivedisc.com) design helps the Omega “prolong the life of your headphones by exerting even pressure to the earpads, which will help keep their shape much longer.” If that ability is worth nearly \$180, the Omega comes in choices of walnut, zebrano, cherry, or maple wood construction. Additionally, Elusive Disc steam-molds the Omega from

a single piece of wood that it later coats with a matte-clear lacquer. Your \$180 also gets you a flannel pouch for covering the stand and your headphones, which Elusive Disc states will undergo less pressure while resting on the Omega than when worn on your head.



Fujitsu recommends Windows® 7 Professional.



LIFEBOOK TABLET PC. STAY IN TOUCH.



LIFEBOOK T900 TABLET PC YOUR ULTIMATE MOBILE MEETING TOOL

The LIFEBOOK® T900 is an ultra-versatile lightweight tablet PC for the professional user. With the Intel® Core™ i7 processor, intelligent performance meets ultimate mobility. When teamed with Genuine Windows® 7 Professional, you'll be able to stay connected, stay productive and stay in touch. With the LIFEBOOK® T900 multi-touch you can either work with your fingers or with the patented multifunctional pen.

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approve of the company's upcoming Galaxy Player YP-GB1. The device essentially mimics the Galaxy S but omits S' cellular abilities. The player, which also rounds out a line of Galaxy devices able to compete directly with Apple's iPad, iPhone, and iPod touch, will reportedly show up first in South Korea in January in 8GB, 16GB, and 32GB models and make appearances in other countries beginning in April. Though Samsung had yet to announce pricing, the Galaxy Player will run Android 2.2 (aka Froyo) and don a 4-inch Super Clear LCD (800 x 480) on a body measuring 9.9mm thick. Expect Wi-Fi and Bluetooth 3.0, a 3.2MP rear-facing camera and second front-facing camera to make video calls, HD video playback, microSD card slot, and access to the Android Market and Samsung Apps stores.

THE POWER OF THREE

■ If recent online rumors are true, it's possible by now that Apple has announced details concerning a new iPad. Among the features the "iPad 2" is rumored to include is a built-in USB port, which many current iPad owners would view as a major plus. Currently, for example, transferring photos to an iPad means either using a PC/Mac for syncing or relying on Apple's iPad Camera Connection Kit (\$29; www.apple.com). The kit provides two separate dongles, including one that reads SD cards and one that allows for attaching a digital camera directly to the iPad. The 3-In-1 Camera Connection Kit available at M.I.C. ("made in China")

GRACE DIGITAL ADDS SOME COLOR

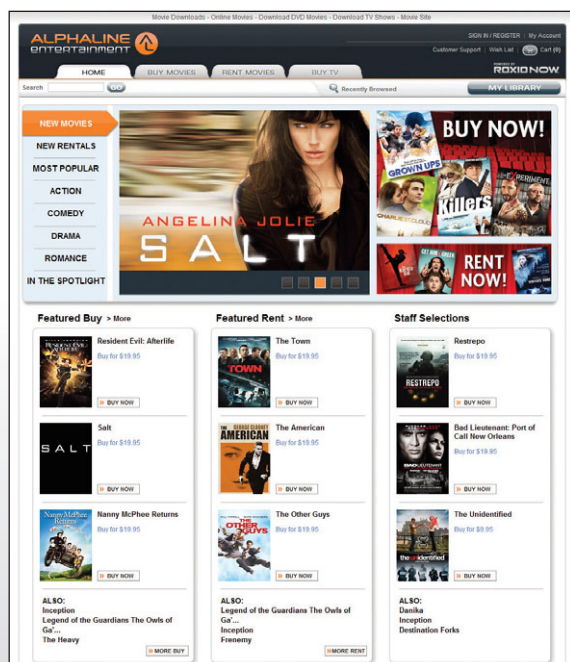
■ If for whatever reason you've been waiting for the day a standalone Internet radio offered a colored screen, that day has arrived. With its Grace Digital Solo Touch (\$249.99), Bravado X (\$179.99), and Mondo (\$169.99) models, Grace Digital Audio (www.gracedigitalaudio.com) claims it has the "first ever color radios with 802.11n connectivity." Grace Digital hails the Mondo as the line's flagship and as a "perfect bedside radio" with its 3.5-inch TFT color display. The Solo Touch, meanwhile, sports a 4.3-inch color touchscreen and serves as the "big brother" to the company's original Solo (\$129.99), while the Bravado X and its 2.7-inch color display is the new-and-improved version of Grace Digital's Bravado (\$199.99). All three new radios will be available soon if they are not out as you read this, and they integrate Pandora, Sirius XM Internet Radio, CBS Radio, iheartradio, Live365.com, MP3Tunes, NPR, National Weather Service, and new support for WeatherBug and Rhapsody. Overall, Grace Digital touts the radios can dial into 50,000-plus Internet radio stations.



Store (\$29.90; www.store.micgadget.com) builds a USB port and SD card reader into just one dongle, along with a microSD card slot. Available in white or black, the 3-In-1 Camera Connection Kit reportedly supports other USB devices in addition to a digital camera, although not devices that need 20mA or more of power, according to M.I.C.'s blog.

SEARS & KMART DEBUT ALPHALINE ENTERTAINMENT

■ Sears and Kmart (which Sears Holdings owns) aren't just places to buy a new lawn mower or pair of jeans. The retailers are now also the home to online movie and TV rentals and purchases. Working through Alphaline Entertainment (alphaline.roxionow.com), Sears announced the service in late December that lets customers "download entertainment online, including new movies on the same day they are released on DVD and Blu-ray Disc." Sonic Solution's RoxioNow platform powers the service, which reportedly will roll out in multiple phases, including eventually "making the service available from a broad range of connected devices and ensuring compatibility with studio-supported digital programs." Sonic Solutions stated that it will team with Sears to integrate the service "at a chip level on a growing network of devices, including portable media players, Blu-ray Disc players, mobile phones, and high-definition television sets." Currently, Alphaline Entertainment TV rentals cost \$1.99, movie purchases \$19.95, and movie rentals \$3.99. There's no subscription required for using the service. ▲



Everything is here with bModo **12G**

- Unlocked 3G SIM Slot
- Built-In GPS
- Windows 7 Home Premium | 11.6" LCD
- Support Adobe Flash and all PC Applications



Available Models:

bModo12G (2GB DDR2)
bModo12 (1GB DDR2)

■ Docking Station Sold Separately

USB ports x 3, RJ45 port x 1, Audio port x 1,
Mic port x 1, AC adapter port x 1, 26 pins connector for
bModo12/12G x 1, Weight: 320g (0.71 lbs),
Size: 125(L) x 75(W) x 68mm(H) (4.92 x 2.95 x 2.68 inches)

Features include:

- Built-in GPS
- Unlocked 3G SIM Slot
- Multi-Touch Control
- Bluetooth ready
- MIC
- Webcam
- Speakers
- Virtual Keyboard
- OMTP Jack
- SD/SDHC Slot
- Mini-HDMI
- 990g (2.18lbs)
- 295 x 195 x 14mm
(11.61 x 7.67 x 0.55 inches)

Protect Your Privacy Online

Ways To Minimize The Risks

by Carmen Carmack

If you use online services, social networking sites, Web browsers, or search engines, your privacy is at risk. The more information you make available online, the easier it is for someone to compromise your computer, privacy, or identity. Today, there are very few consumer protections for online privacy, but there are steps you can take to help minimize your risk.

- Read the site's privacy policies—they can reveal a lot about how your information is used and how you can take additional steps to protect it
- Verify and change account and privacy settings—many sites default to less private options
- Use strong passwords and security questions that are not easy for others to guess
- Employ antivirus and spyware software on your computer and keep the software updated
- Be wary of installing software or toolbars, downloading items, and using add-on applications
- Look for and opt-out of receiving notices or special offers
- Decline options to import your email contacts into the service
- If you receive a personal email invitation to sign up for an online service, contact the sender to verify its authenticity
- Use common sense—if the site or service doesn't seem like it's on the up and up, don't register to use it

	Everyone	Friends of Friends	Friends Only	Other
Your status, photos, and posts			*	
Bio and favorite quotations			*	
Family and relationships				*
Photos and videos you're tagged in			*	
Religious and political views			*	
Birthday				*
Permission to comment on your posts			*	
Places you check in to [?]				*
Contact information				*

The privacy defaults for Facebook may surprise you. Use the custom option for the most control over the Sharing On Facebook privacy settings. Carefully review the options here and within the Connecting On Facebook and the Applications And Websites areas.

General Online Privacy Tips

Many online services and social networking sites request personal information. Knowing how your information is used and shared is important. But privacy and security settings can be difficult to find and understand. To help protect your privacy, keep the following recommendations in mind when registering for online services:

- Enter the minimum amount of personal information necessary and do not provide information useful to identity thieves such as your birth date or Social Security number
- If email account information is required, don't use your work or home email account—create a separate email account to use solely for on-line activity

Privacy Options For Popular Social Networking Sites

You should review privacy settings both after you sign up for an online service and periodically thereafter. To help you navigate privacy options for some common social networking sites, we've provided details for Facebook and LinkedIn.

Facebook

To access Facebook privacy options, click Account at top right and then click Privacy Settings. Under the first option, Connecting On Facebook, click View Settings to define how others can connect with you. Here you can define who can search for you on Facebook, send you messages, see your friends list, and view your profile information. In most cases, the most private option is Friends Only. However, the Send Me Friend Requests option does not offer the Friends Only option, so Friends Of Friends is the most private choice here. After you review the settings, click Back To Privacy.

In the Sharing On Facebook section, you can select Everyone, Friends Of Friends, Friends Only, or Recommended. Selecting one of these choices sets your preferences for all of the options in this section. Again, the most private single choice is Friends Only. But the best option for privacy is to select Customize Settings. This provides two advantages: you can see all of the types of information you are sharing, and you can set items to be visible by "Only Me."

Options within Sharing On Facebook that you may want to configure to Only Me include your birthday, contact information, and photo or video tags. (You can also edit your Account to remove some of this information completely from your profile). To select Only Me for an item, click Customize Settings, click the drop-down arrow next to the item you want to change, and select Customize. In the Custom Privacy window, select Only Me.

Next, you should carefully examine the privacy preferences under the Applications And Websites section on the privacy page. The settings here affect the information that other Web sites and Facebook applications can access. And it controls the information that your friends' applications can access about you. To set these preferences, click Edit Your Settings. For Applications You Use, click Edit Settings and remove any applications you don't use. Or, you can select Turn Off Platform Apps to disable Facebook applications entirely. If you don't use Facebook applications, this is a good option because it also disables the remainder of the items here, with the exception of Public Search.

After you review all of your Privacy Settings, also check your Account Settings and review the information in your profile. (Note that you cannot prevent Facebook from displaying your profile photo, name, gender, and networks if you provide this information.) Finally, select the Facebook Ads tab. Here you can control how third-party and Facebook advertisements can use your information. If you "like" something through Facebook, do you want it to be shown to others and on other sites? If not, choose No One for both third-party and Facebook ads.

LinkedIn

Although it's a professional networking site without all of the social features of Facebook, LinkedIn uses your profile information for certain advertising and marketing opportunities. The site also incorporates third-party applications and research surveys.

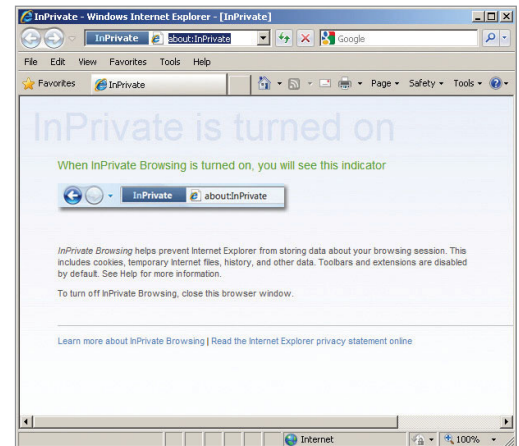
To modify privacy options, click your name at top right and select Settings. To control how much of your profile is available to search engines, click

Public Profile under Profile Settings. There you can determine whether to publish your profile and the information to publish if you choose to do so. You can also preview your profile as it will appear to others in search engine results.

Most of the remaining privacy options are in the Privacy Settings section. Even if you are using LinkedIn as a marketing tool to promote yourself or your business, you should check all of the settings here. For example, the Research Surveys option determines whether you will participate in market research related to your career, and the Partner Advertising option controls sharing of information with advertisers on LinkedIn partner sites.

But Wait, There's More

Signing up for online services and social networks can expose your personal information to others. But there are other online activities that third-party data broker companies track through your Web browser and search engine use. For more information and resources, refer to Online Tracking Information And Tools. ▲



Web browsers offer privacy protections, but most are not enabled by default. For example, Internet Explorer 8 provides an option to use InPrivate browsing, which prevents the browser from storing information such as tracking cookies and temporary Internet files.

Online Tracking Information And Tools

Data broker companies track Internet use through your Web browser, search engine, and online activity. Third-party cookies and code hidden on Web pages track your movements online, record the kinds of searches you perform, and capture personal information. Rather than your name, a code stored on your computer is associated with the information. The code and related data can be sold to companies that want to target advertisements and content specifically to your interests and profile.

For more information about how you can prevent online data collection and tracking, refer to the following resources:

- **AboutCookies.org** (www.aboutcookies.org)
Get detailed information about managing tracking cookies in all types of Web browsers
- **Know Privacy** (www.knowprivacy.org)
Learn more about the current state of Web privacy, data collection, and information sharing from this research report by the UC Berkeley School of Information
- **Network Advertising Initiative** (www.networkadvertising.org) and **PrivacyChoice** (www.privacychoice.org)
Opt out of some behavioral targeting tracking and advertisements
- **Privacy Rights Clearinghouse** (www.privacyrights.org)
Get fact sheets in the Online Privacy & Technology section for detailed information about monitoring online activities and keeping information private
- **Start Page** (www.startpage.com)
Start your searches at StartPage to avoid search engine tracking

SAVE ENERGY At Home

Mobile Devices & Apps That Can Help

by Blaine Flamig

Home energy consumption isn't exactly a sexy topic. Still, it's one of the most pertinent facing the nation where natural resources, money, pollution, and security are concerned. Take, for example, the \$241 billion that Home Energy Saver (hes.lbl.gov), a Web site the U.S. Department of Energy and Lawrence Berkeley National Laboratory's Environmental Energy Technologies Division created, claims that U.S. consumers spend annually on home energy. With improvements, though, the nearly one in five dollars spent nationally on home energy could be cut "by well over half," HES claims. Overall, a typical U.S. family spends about \$1,900 annually on home utility bills with a "large portion" of energy going wasted. Further, about 1.2 billion tons of greenhouse gas emissions enter the atmosphere yearly as a "byproduct of making the energy to power U.S. homes," HES states.

Unfortunately, statistics elsewhere are as sobering. Fortunately, private and public groups are working to change the situation, including homeowners increasingly turning to hardware and software aimed at improving home energy efficiency. Among these tools are mobile devices, apps, online tools, cloud-computing monitoring services, and more. The following details such tools.

Energy Trackers

Somewhat surprisingly, there are numerous home-energy-efficiency tools with Web and mobile device ties, with options essentially breaking down into free online calculators and similar tools or standalone mobile apps. There also are full-fledged automation solutions for the serious-minded ready to take onsite and remote control of such major energy bill contributors as lighting, heating and air conditioning, home-theater

equipment, sprinklers, drapes, locks, and more.

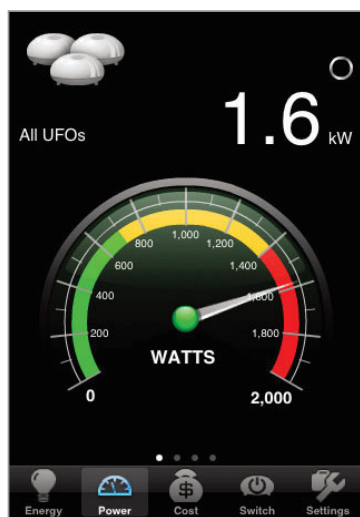
Calculators. Search Google for "online home energy calculators" and you'll find scads of easy-to-use free calculators that can help identify home-energy wasters and detail how to remedy the problem. Many calculators also calculate money you can save to the day, month, and year and how making improvements can ease your carbon footprint. For example, HES' Energy Calculator, billed as the first Internet-based tool for calculating energy use in residential buildings, uses your location and other supplied information to estimate annual energy costs and savings you can realize through upgrades, and outlines how heating, cooling, hot water, appliances, and lighting individually factor in.

The U.S. Department of Energy's Energy Calculators & Software section (www1.eere.energy.gov/calculators/homes.html), meanwhile, contains numerous links to online calculators, including an insulation estimator from the Oak Ridge National Laboratory and savings calculators from the DOE's Energy Star program for appliances and consumer electronics. The Tennessee Valley Authority, meanwhile, provides its customers an online home energy audit (www.energyright.com) and offers a conservation kit containing two fluorescent light bulbs, hot water temperature gauge, light switch gaskets, and more.

Home-automation packages. Way up the price scale are packages that provide control over multiple, if not all, home components capable of being automated, including lighting, heating and air conditioning, computer equipment, drapes, and so on. A key aspect of these packages is the oversight and control provided through mobile devices. Ecobee's wireless, Internet-enabled Smart Thermostat (\$469; www.ecobee.com), for example, grants control via a private, secure Web portal



Current Cost Enviro monitoring device



Visible Energy UFO Power Center app

interface from any Internet-connected system, as well as via free iPhone and iPad apps. Elsewhere, Wisier Home Control's system (pricing varies; www.clipsal.com) provides control over lighting, heating and air conditioning, home-theater equipment, security systems, blinds, and so on via a Web browser or handhelds via Wi-Fi or 3G connections. Thus, if the temp suddenly plummets, you can turn your air conditioner down via your iPhone while you are sitting in your office.

Similarly, Control4's system (pricing varies; www.control4.com) gives users wireless, secure control via Wi-Fi over home-theater equipment, garage doors, sprinkler systems, shades, thermostats (including zone or whole house control), lights, and more through a free Control4 Mobile Navigator app for the iPhone, iPod touch, and iPad. Control4 states that a standard three-bedroom house using its system can eliminate more than 850 pounds of CO₂ emissions per year—the equivalent of not driving a car for a month. Android and BlackBerry app versions are reportedly coming.

Schlage's LiNK system (prices for devices vary, but an \$8.99 monthly subscription is required; link.schlage.com), meanwhile, uses Z-Wave technology along with its locks to enable control of locks, lighting, thermostat, and other Z-Wave enabled equipment from Web-connected computers and "most Web-enabled cell phones." Further, you can use the system to remotely enable or disable related schedules. Elsewhere, Visible Energy's (www.visibleenergy.com) upcoming UFO Power Center sports a "flying saucer" design with four integrated smart powerstrips that store power consumption and cost-related data for the devices plugged into them. Beyond viewing data on an iPhone via an Energy UFO app or Web browser, you can control the Wi-Fi enabled outlets remotely. (A native iPad app is in the works.) Users can also configure each outlet to turn on or off at designated times or when certain conditions are met.

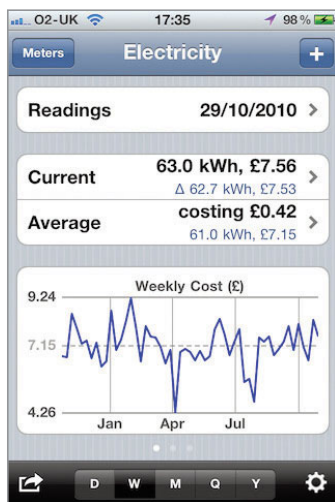
Standalone apps. Among the numerous standalone energy efficiency-related apps available are those with no ties to specific companies or products. Many require manually entering data related to your appliances and in-home power usage to

receive cost estimates and potential savings areas in return. Meter Readings (\$1.99; available from iTunes) for the iPhone and iPad, for example, re-

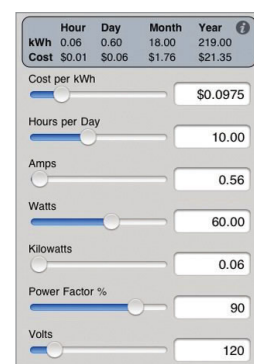
lies on you to manually enter rates, and then it presents you graphs that help you monitor electric, gas, and water meters daily, weekly, monthly, or annually for usage, costs, and potential savings.

MeterRead (99 cents) is a similar app for Apple devices that requires manually entering energy-related data to get such feedback as how many kilowatt hours your home will use in the coming 30 days. Wattulator (99 cents) and the advanced Watts Plus (\$1.99), meanwhile, come from the same developer and provide estimates of how much electricity appliances are costing you and how a change in usage

could positively affect costs. Similarly, Kill-O-Watts (99 cents) calculates the electricity typical appliances use and how much they cost you monthly and yearly. Beyond 120 appliance choices, you can also create new appliance scenarios, compare costs between appliance brands, pinpoint possible savings, and more. ▲



Meter Reading iPhone app



Wattulator iPhone app

THE GOOGLE INFLUENCE

A free Web-based tool with more oomph than typical energy-efficiency calculators is Google's PowerMeter (www.google.com/powermeter), energy-monitoring software that lets home owners view data relating to their home's energy consumption at any time from any Internet-connected computer. Beyond displaying how much energy a home used daily, weekly, and monthly, PowerMeter can estimate annual energy bills, help create an energy budget and track the results, display always-on power sources, compare your home's electricity usage to others, and more.

Using PowerMeter requires having a smart meter installed in the home as supplied by one of Google's utility partners or using a compatible monitoring device such as the TED 5000 Home Energy Management System (\$199.95 and up; www.theenergydetective.com) or CurrentCost's real-time handheld Classic or ENVI monitoring units (www.currentcost.com). Beyond displaying PowerMeter data on the TED 5000 device's display, the TED system supports Footprints Software that makes it possible to configure the system to display power usage data on an iPhone and other smartphones.

Use Wi-Fi Hotspots Wisely

The scramble for companies to leverage Wi-Fi to boost bottom lines and customer loyalty has resulted in a confusing number of service configurations. Here's the rundown on some issues you will encounter—and also how to connect in the wisest manner possible.

How To Protect Yourself

The ugly fact is that someone with enough skills and determination can hack into any network, and all but the most secure, private connections can be hacked by someone of average skill and enough determination. Consequently, the most important thing you can do to use Wi-Fi hotspots wisely is to lock down your data and system.

We urge you not to surf without a firewall. If you do not have firewall software installed, turn on Windows' built-in firewall protection. Because many users have third-party firewall software, we won't detail these instructions here. You can locate available firewall programs by browsing to windows.microsoft.com and searching under Firewall (your version of Windows).

The next step is to secure your data. Windows Vista/7 give you the option of selecting a network profile (Home, Work, or Public) when you connect. Always select Public unless you trust the network and its members. Doing this prevents other computers on the network from discovering your PC and turns off the File And Printer Sharing feature. You can tweak any of these settings in the Network And Sharing Center: right-click the network icon (a monitor or series of bars, potentially with a red X or starburst on top) at the bottom right of your display. Select Network And Sharing Center in Vista; Open Network And Sharing Center in Win7.

In WinXP, File And Printer Sharing is turned off by default unless you enabled

it. To see if it is enabled, right-click the network (monitor) icon at the bottom right of your display and select Open Network Connections. Right-click the icon for your wireless device and click Properties. Under the General tab, deselect the File And Printer Sharing For Microsoft Networks checkbox to turn sharing off globally. When you return to a safe environment, you can re-enable this feature when necessary. In Vista/Win 7, you can also turn off the File And Printer Sharing feature manually through the network connection properties in Vista/Win7, but it's easier to let Windows do it for you.

How To Connect Through Windows

To connect to a wireless network, right-click the network icon and select View Available Wireless Networks (WinXP) or Connect To A Network (Vista). In Win7, select the Network icon.

A menu will pop up displaying available networks. Each OS will identify whether networks are secure. If the network you want is open, select it and click Connect. We advise not connecting to an open network unless you know it is the one you seek. Hackers set up open networks with friendly sounding names hoping that unsuspecting individuals will hop onto them.

If you are connecting to a secure network, or if you don't know the name of the network you want, contact the network

host. You'll need the network name (also called an SSID) and, if the network is secure, a security key or passphrase. Select the desired network and provide the key if prompted. (See "How To Evaluate Security" before you complete this step.)

If you use WinXP, your network card may manage network connections, leaving you unable to connect using our instructions. To give Windows control, click Start, select Control Panel, click Network And Internet Connections, and select Network Connections. Right-click your wireless connection and click Properties. Click the Network Settings tab and select the Use Windows To Configure My Wireless Network Settings checkbox.

How To Set Up A Manual Connection

If you cannot locate the network you want (some networks choose not to broadcast their SSIDs), you can set it up manually. In addition to the network, name, and credentials, you will need the network security protocol and encryption type (TKIP or AES).

To set up a manual connection in WinXP, open the available networks list as described previously and click Advanced or Change Advanced Settings (depending on the service pack you have installed). On the Wireless Networks tab, click Add. In Vista/Win7, open the Network And Sharing Center. In Vista, click Set Up A Connection Or Network at the top left of the display; in Win7, click Set Up A New Connection Or Network (under Change Your Network Settings). Select Manually Connect To A Wireless Network and click Next.

Provide the information exactly as you were given it (uppercase and lowercase). In Vista/

Win7, you can opt to see the characters as you type for confirmation. If the network is WEP and you do not see this option, select Shared. Select an encryption type if you have one. Otherwise, keep the default. After entering all this information configuring the desired settings, click OK or Next to connect.

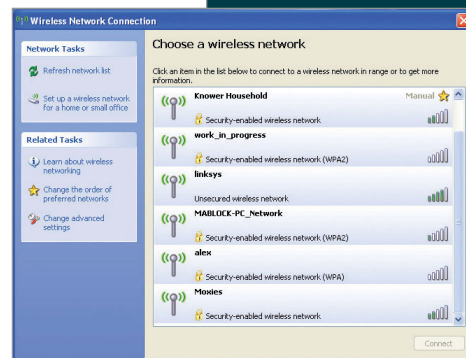
How To Evaluate Security

Most private, and also some public, networks use one of several security standards to protect users and themselves from intrusion. You'll encounter WEP, WPA, and possibly WPA2. The Wireless Network Connection dialog box may provide the network type. If not, here's a hint. WEP security keys always contain 26 characters. WPA and WPA2 security keys are eight to 63 characters in length.

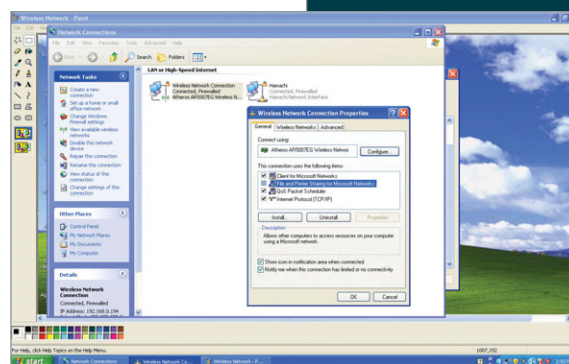
WEP is the least secure and easiest to crack; treat a WEP network as you would an unsecure network, setting its profile to Public unless you absolutely must communicate with other PCs. WPA and WPA2 are more impervious to cracking, so you can use a profile that is more open, such as Work, if necessary (or tweak the settings in the Public profile to open things up as needed.)

Take Charge

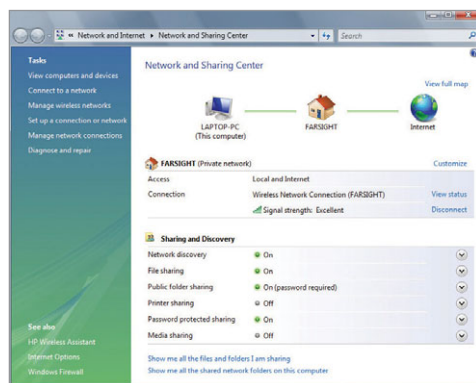
At the end of the day, the responsibility for protecting your assets lies with you. Using common Internet precautions is also a good idea. Before you provide sensitive information, be sure you are at a secure site. The Web address should begin with https instead of http and your browser should display a padlock icon or other security confirmation. Check with your email provider to see if you can encrypt your email messages. Another precaution you can take is to turn off your wireless adapter when you are not using the Internet. To turn wireless off, right-click the icon for your wireless connection in the System Tray and select Disable. ▲



▲ Windows XP/Vista/7 all provide a wireless connection display that lets you determine if a network is secure or open (WinXP displayed).



▲ WinXP does not offer network profiles, but you can turn off File And Printer sharing through network connection properties.



▲ In Vista/Win7 the Network And Sharing Center is your portal to setting up new connections, changing network profiles, and more.

Troubleshoot Projector Problems

The big moment is at hand—that make-or-break presentation. You know your material by heart, but your projector/notebook combo is acting up. The show must go on, and with the help of these handy tips, it will.

An Ounce Of Prevention

You can head some problems off at the pass by always carrying a spare parts bag. You can never tell when a favorite cable, an adapter, or the projector lamp is going to fail.

Get Connected

Use as few adapters and as short a cable as possible to make connections. The more cables and adapters you use, the greater the likelihood of problems.

Try to use a digital connection, usually DVI, HDMI, DisplayPort, or Mini DisplayPort. By avoiding VGA, RGB, S-Video, and other analog connection options, your projector and notebook are more likely to work in automatic mode, where they detect the connection type and self-adjust for the best images.

If you are using the projector's remote to control a presentation, be sure to connect its mouse cable (usually USB) to your notebook.

After making all of the connections, turn the projector on before booting your notebook. This gives your notebook the best chance of detecting that a

projector is attached and what resolution the projector wants to use.

No Sound

Test the audio by generating a system sound on your notebook. An adjustment to the volume control should produce a reassuring ping over the speakers. If you don't hear anything, make sure your notebook isn't set to mute audio and that you're using the appropriate audio out jack.

If that doesn't do the trick, check that the projector's audio volume is set correctly and not muted. If you're using an audio system provided by the venue, ask one of its support staff to ensure the audio system is set up correctly.

No Image

That heart-stopping moment when you turn your projector/notebook on and don't see an image usually feels worse than it is. The possibilities could include a burnt-out bulb, bad cables/adapters, or a notebook or projector that's set to the wrong inputs or outputs.

Start by checking the projector lamp. If it isn't lit, try accessing the projector's built-in menu system or test image. If the bulb is OK, it should turn on when you use the projector's built-in functions. If the bulb doesn't turn on, it's time to dig out the replacement bulb.

Cables and adapters can be loose or break down after long use. Make sure all of the connections are tight. If necessary, try a different cable or adapter.



▲ If you're going to use a remote to control your presentation, be sure to familiarize yourself with it ahead of time. A live presentation is a bad time for on-the-job training.

Many newer notebooks will detect when a projector is plugged into one of its video outputs and automatically turn the port on. However, not all notebooks do this, and even those that do might still not produce an image if the notebook isn't set to have its desktop duplicated or extended to the secondary monitor (the projector).

Most notebooks have a function key combination you can use to toggle the projector port on or off and set how the display will be used; check your notebook's manual for specifics. We prefer to use the control panels in Windows to perform this function, that way, we know the exact settings.

Windows XP. Right-click a blank area on the Desktop and select Properties from the pop-up menu. In the Display Properties window, click the Settings tab. Use the drop-down menu to select the second display. Select the Extend My Windows Desktop Onto This Monitor checkbox and click the Apply button. Your Desktop background should appear on the projector.

Windows Vista. Right-click a blank area on the Desktop and select Personalization from the pop-up menu. In the Personalization dialog box, select Display Settings. Use the drop-down menu to select the second display. Select the Extend The Desktop Onto This Monitor checkbox and click Apply.

Windows 7. Right-click a blank area on the Desktop and select Screen Resolution. Use the Display drop-down menu to select the second display, and then select Extend These Displays from the Multiple Displays drop-down menu.

Win7 also has a pop-up display for selecting the content that will be sent to a projector. Press the Windows key-P to bring up the selections: Disconnect Projector (turns the projector display off), Duplicate (mirrors your computer's Desktop on the projector), Extend (uses the projector as an extension of the Desktop), and Projector Only (uses the projector as the main display).

Finicky Focus

Room conditions can deceive auto focus projectors. If you're near the projector, make sure

you are familiar with its manual focusing system. If you're using a remote, be sure you know how to adjust the focus; never rely on just the auto focus function.

Also, use high-quality images whenever you can. Heavily compressed images tend to look soft or even a bit blurry when projected to a large size. Likewise, avoid images with resolutions meant for Web pages; high-resolution images are ideal when sharp focus is a goal.

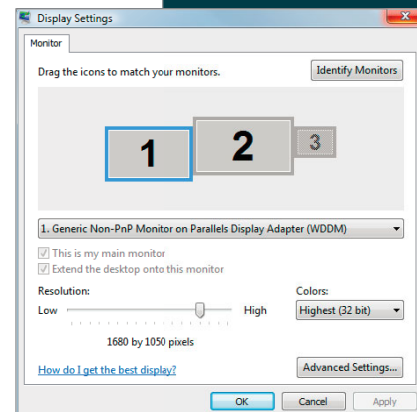
Display Cuts Out

If the projector's display shuts off during your presentation, you may think your notebook's screen saver is the culprit. Your notebook's power management may also be to blame, especially if you are running your notebook off its battery. We suggest using the AC adapter when possible. Check your cables, too. Loose connections can cause the display to cut in and out.

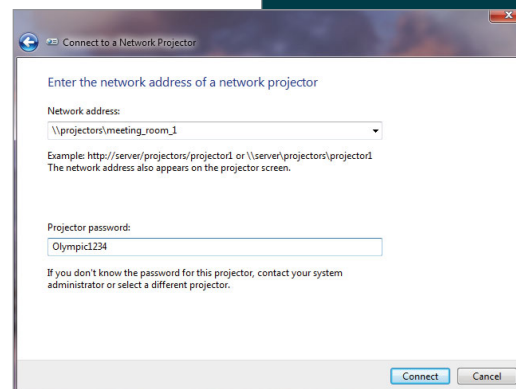
Using A Network Projector

Many businesses are using network projectors, which connect to the company's network as a shared resource. Vista and Win7 make connecting to a network projector a simple process. When you connect to the company's network, click the Start button, select All Programs, click Accessories, and select Connect To A Network Projector. If the network connection wizard reports that your notebook's firewall is blocking the connection, click the button to allow the connection. If you know the name of the network projector, select Search For A Projector. If you know the address of the projector, select Enter The Projector Address.

Once you make the connection, the Network Presentation window will open and then minimize to the taskbar. Next, you will open the Network Presentation window and select Pause to suspend the presentation or Resume to start or resume the presentation. The network projector is treated as another monitor attached to your notebook. ▲



▲ Extending the Desktop onto the monitor/projector is a good way to ensure the projector is working correctly.



▲ Before you can connect to a network projector, you'll usually need to know the projector's network name or address and password.



▲ For the best audio quality, connect your notebook's audio outputs to the projector or to separate audio amplifiers/speakers. Don't use your notebook's headphone jack to make audio connections.

Troubleshoot Notebook Problems

It's obvious that notebooks are designed differently than their desktop cousins, but that doesn't mean you cannot perform a few minor tweaks with reasonable ease. We explored some common notebook operating issues and their fixes. All the routines assume that Windows is fully updated (visit www.update.microsoft.com current updates) and the problem is still occurring. If an item requires shutting down your system and you cannot do that, press and hold the power button for five seconds.

How To Troubleshoot Unexpected PC Reboots

Unexpected (also called uncommanded) PC reboots usually occur because your Windows OS is set by default to reboot upon system failure. A reboot can also occur because an update restarts the system automatically, but this is something you should be warned about. If you weren't installing updates prior to the reboot, you should determine the cause of the system failure before things get worse.

An infrequent, but possible, problem is BIOS incompatibility. If you upgraded to a new version of Windows on an older notebook, check with the manufacturer to see if you need a BIOS update.

Another cause of reboots is software or hardware bugs or driver incompatibilities. If the problem began after installing new hardware or software, or when you open a particular program, check with the manufacturer/developer for an update.

Other culprits of reboots during system operation are power or heat. We recommend professional servicing for power problems. However, heat build-up is something you may be able to resolve yourself.

How To Prevent Overheating

Locate the air vents and don't rest your notebook on anything that blocks them. Also, check for dust blocking the vents. With the

machine powered off and the battery removed, try to extract dust with tweezers or a cotton swab lightly dipped in alcohol. If the debris or dust is past the vent opening, a mini (USB) vacuum will be helpful. We don't recommend compressed air at this step, because it can spin your fan blades excessively and cause damage.

If this doesn't resolve the issue, consult your computer's service manual for cleaning instructions. If you can't locate these instructions and want to try this anyway, shut down and unplug the notebook, remove the battery, and remove any screws on the bottom that may enable you to access the inside of your computer. Ground yourself by wearing a grounded wrist strap or touching an unpainted surface frequently before you attempt to remove objects from the inside of the notebook. If you choose to use compressed air to clean out your system, place a toothpick between two fan blades to prevent excessive spinning.

How To Troubleshoot Shutdown Issues

If you recently installed new software or hardware and your computer won't shut down normally, it is possible that a driver or a process related to the new addition is causing the problem. Uninstall the new software or hardware. If your computer can then shut down normally, consult the

developer/manufacturer for a possible solution to the installation problem.

If Windows doesn't shut down when you expect it to, the solution may be as simple as adjusting your power settings. Right-click the battery icon in the System Tray and select Power Options. Tweak such settings as Choose What Closing The Lid Does.

How To Troubleshoot A Dead Notebook

A dead notebook—one that fails to start (no BIOS messages) when you press the power button could be the result of a number of things. Check to see if the notebook starts when you plug it into the AC adapter. If so, the battery is likely faulty. Remove the battery and replace it, making sure nothing is blocking the connectors. If that doesn't help, see if your notebook has a battery testing feature, such as HP's Battery Check. If the notebook won't start with AC power or a charged battery, continue reading.

How To Troubleshoot Power Issues

Press the power button on the notebook and check for auditory and visual clues. Does the power light come on? If so, the machine is getting power. If not, then your AC adapter and/or battery may be faulty. Use a compatible AC adapter and see if you can start the machine; if so, leave the adapter plugged in to make sure the battery charges correctly.

How To Check The Display

If you have a working, but problematic, display, a number of issues could be at fault. Did you recently install a new video card or does the problem only occur when you run certain software? If so, you may need to adjust the video settings. Right-click an empty area of your Desktop, select Properties (WinXP), Graphics Properties (Vista), or Screen Resolution (Win7). The interface will vary based upon your notebook model

and graphics chip/card, but you should be able to tweak a number of settings. If you recently installed a video card, you may also need to consult its manufacturer for more information.

If the display is dim or goes blank unexpectedly, check the power options mentioned previously. Power-saving modes can cause these behaviors. Also, ensure that your screen saver is not set to Blank.

For a blank display on boot, or if the previous solutions don't help, shut the system down and plug in an external monitor. If the external monitor display works, the notebook's video display may be faulty (this is rare unless there is visible damage). It's also possible a connection may be loose or damaged. If an external monitor doesn't work, the video adapter/chip may be faulty or unseated.

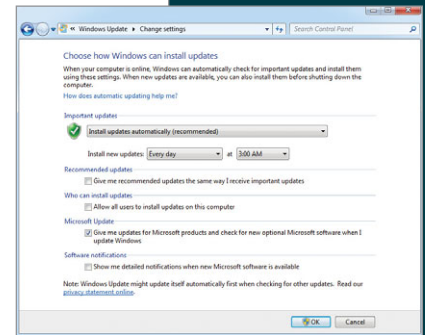
If the display is scrambled or fails over a long period of operation, one or more of your memory chips may have failed or the video processor may be overheating. Video failure can also occur when the entire notebook overheats (refer to "How To Prevent Overheating" for assistance). If the display looks like there is liquid spreading out, it probably needs replacing. If evidence points to the more serious issues mentioned in the last two paragraphs, consult your service manual.

How To Resolve A Failed Optical Drive

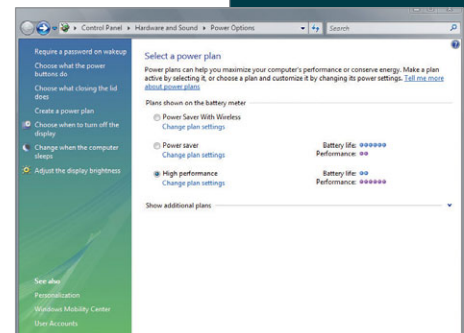
There are two simple solutions for an optical drive that doesn't work properly. First, if your drive is removable, make sure it is properly seated in the slot (consult your documentation if necessary). Second, purchase a cleaner kit and clean it according to instructions.

Service It

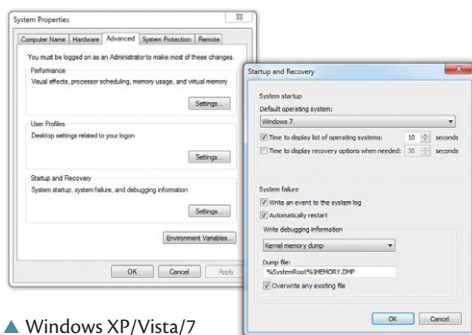
Many of these solutions direct you to the service manual. Notebooks vary in configuration, making it impossible to provide generic instructions. Search for a service manual for your specific notebook model. If you are not comfortable with or can't find instructions for repairs, seek professional assistance. ▲



▲ Regularly installing updates can resolve some notebook issues (especially driver incompatibilities and bugs) you encounter.



▲ Some power and/or display problems can be attributed to incorrect power settings.



▲ Windows XP/Vista/7 are set to reboot upon system failure by default, so a random reboot is a symptom of an underlying problem.

Deal With A Malware

Infected Notebook

There should be a corollary to Murphy's Law expressly for business travelers. Perhaps something like this: If something's going to go wrong with your notebook, it won't go wrong at the office, when the IT department is just down the hall. No, it'll crash at the worst possible time—at 2 a.m., just hours before a huge, out-of-state business presentation.

Most of the mobile computers in the field today are running Windows XP, and while the operating system is far more stable than past versions, malware can still bring your notebook to its knees. The important thing, however, is not to stress out over spyware and malware infections while you're on the road, but rather to deal with them effectively. We'll show you a few simple ways to make sure your notebook stays up and running while you're away from home.

The Right Tools

Most of us have some antispyware and antivirus software installed on our business notebooks, but these programs aren't really going to be a whole lot of help unless they are updated frequently. Even the outstanding Spybot Search & Destroy (free; www.safer-networking.org) needs your help to do its job properly.

When a user notices a problem, a common first reaction is to run the antispyware and antivirus programs on your machine to see if that

helps. That's a great idea, of course, but be sure to update the software before you run them. This can save you a bit of time and will help root out the newest infections you may have picked up while surfing the Web.

You can set the enterprise-level antivirus programs from McAfee and Symantec to update automatically, but with some programs, it's a good idea to manually update before you start the lengthy scanning process.

For example, when using the aforementioned Spybot Search & Destroy, all you have to do is click the Update icon on the left side of the screen to download the newest malware definitions. After you've downloaded the latest definitions and detection rules, click the Search For Problems icon and follow any prompts to complete the update.

Also, it's a good idea to run more than one antispyware program. Ad-Aware from Lavasoft (free; www.lavasoftusa.com) is a good option. Again, this excellent program can only run as well as you let it, so click the Check For Updates Now link at the bottom of the screen before scanning your machine.



▲ Before scanning your machine with a security utility such as Spybot Search & Destroy, be sure to check for updates.

The Best Defense

One of the best ways to keep your computer from getting loaded down with malware is to never let the stuff in the door. Windows includes a basic firewall (it's activated by default), but added protection helps.

First, let's check to make sure your Windows Firewall is up and running. To access the firewall in Windows Vista/7, click the Windows icon, select Control Panel, and select Windows Firewall; in WinXP, click Start, Control Panel, and then Windows Firewall. If the firewall is set to Off, simply select the radio button or link for On and click OK.

Now comes the step of adding another layer of protection. There are several free firewalls available on the Web that do a marvelous job of protecting your computer from unwanted intrusions. One of the most reliable is ZoneAlarm (free; www.zonelabs.com). Once installed, ZoneAlarm will prompt you to determine which programs are authorized to access the Internet. After that, ZoneAlarm will block the rest (or at least seek permission to allow a new program to access the Internet).

Of course, the enterprise-level offerings, such as Symantec's Sygate Enterprise Protection and McAfee Total Protection For Enterprise, include powerful firewalls, so if your company uses programs similar to those, make sure they're up and running before you leave for a business trip. You can also try out the antivirus and personal firewall solutions from F-Secure (www.f-secure.com) free for 30 days. Click the Evaluations icon at the left side of the home page.

Don't Click That

Automated spyware and antivirus tools are great, but they're no substitute for a little bit of vigilance on your part. After all, Spybot Search & Destroy won't automatically protect against a program you installed on the machine yourself, and ZoneAlarm won't block a program you secured for Internet access.

A little watchfulness goes a long way. Got an email from someone you don't know? Immediately trash it without opening it. Even if your email program automatically opens your new messages in a reading pane, it's a good idea never to download an unexpected attachment. Consider using Yahoo! Mail (mail.yahoo.com) for your personal email, as it adds an extra layer of protection by immediately scanning all incoming and outgoing attachments for virus threats.

Also, no matter what the pop-ups tell you, don't click anything that jumps unsolicited onto your screen claiming to be able to fix a virus or spyware problem. These pop-ups are more often than not carriers of spyware and viruses in the guise of an actual message from your OS. A general rule of thumb is

that if it opens in a browser window and you didn't specifically point your browser toward it, don't click it. Just close the window and go about your business.

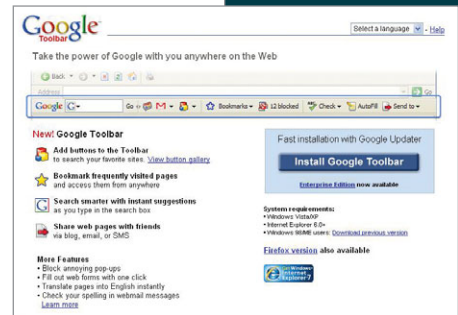
Thankfully, the newest version of Internet Explorer, IE8, blocks most of these pop-ups. If you have not already upgraded from IE6 or IE7, take a few minutes and visit www.windowsupdate.com. If you prefer to use Mozilla's Firefox browser instead, drop by www.mozilla.com and pick up the latest version of the browser. Both IE and Firefox offer excellent security just out of the gate, and both are great at making sure you don't see pop-ups.

Know What You're Running

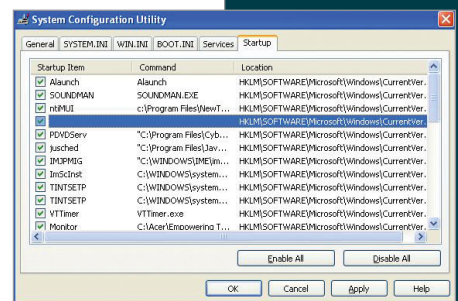
So, your system is armed to the teeth with regularly updated antivirus and antispyware utilities, but you're still having troubles? There are some simple fixes you can run in Windows to help you at least get around spyware problems.

First, you can simply monitor and control the programs your computer is running at startup. To do this in WinXP, click Start, then Run, and then type `msconfig` into the window that appears. Click OK and then click the Startup tab. See anything with a blank entry? If it refuses to identify itself, it's a pretty good bet you don't need it to start up your machine. Deselect suspicious checkboxes (you can also streamline your computer's startup routine here, if you wish, by deselecting programs that automatically load that you rarely use). Click OK and restart when prompted. In Vista, open the Windows Defender program. Choose Tools and Software Explorer and then click Startup Programs from the Category menu. Your startup programs will display in the left pane. Simply click a program to highlight it and then click the Disable button. Alternatively, you can permanently terminate a program by clicking the Remove button.

It's also a good idea to set a restore point when you know your computer is working well. That way, you can always restore your machine to a time when it was functioning properly. To do this, click Start, All Programs, Accessories, System Tools, and System Restore. Click Create A Restore Point and then follow the wizard that appears. To restore your machine, click Restore My Computer To An Earlier Time instead. ▲



▲ Clicking pop-up ads as you browse the Web can expose your machine to all sorts of malware horrors, as well as scams. Utilities such as Google Toolbar (free; toolbar.google.com) include pop-up blockers to help protect your computer from such nuisances.



▲ If a program has a blank entry, it's probably safe to deselect it. Be careful in this menu, though. You can cause more harm than good if you don't know what you're disabling.

Revive A Dead Smartphone

Emergency CPR Techniques

What should you do when your smartphone decides to play dead? Resist the urge to throw it against the nearest wall and try one of these techniques instead.

Soft Reset

All phones have a soft reset function, which is similar to restarting your computer. Beware that performing a soft reset will cause you to lose any data that isn't saved, but you will retain information previously stored on your smartphone.

T-Mobile G1. With the G1 powered off, hold the Home and End keys simultaneously. When you see a triangle with an exclamation point, press the Home and Back keys.

Android (Other). All remaining Android models use a simple power cycle to perform a soft reset. Just turn the phone off and then back on again.

BlackBerry (QWERTY keyboard). Press and hold the ALT-CAP-Del key combination. The display goes black for a second and your BlackBerry resets.

BlackBerry (SureType keyboard). Press the ALT-CAP and Right Shift-Del keys. When the screen goes blank, release the keys.

BlackBerry (touchscreen). Turn the BlackBerry off and remove the battery for at least 30 seconds. Reinstall the battery and turn the device back on.

BlackBerry Storm, Storm2. Soft resets usually involve pulling the battery, but you can also use the Soft Reset app that is available OTA (over the air). After you install the app, you must disable Compatibility Mode: Tap Options, Advanced Options, and Applications; then tap the BlackBerry Menu button and highlight Disable Compatibility Mode. Now, launch Soft Reset and tap the Reset button.

BlackBerry Torch. Press and hold ALT-Right Shift-Del keys.

HTC FUZE, Touch Cruise, Touch Diamond. Insert the tip of the phone's stylus into the reset hole located on the bottom of the device.

HTC HD2, Touch Pro, Touch Pro2. Use a small object, such as a toothpick or stylus, to press the reset button, which is located below the battery and SIM card slot.

iPhone (all models). Press and hold the Sleep/Wake button on the top of the iPhone and the Home button. Continue to hold both buttons (approximately 10 seconds) until the display goes blank. You'll see the white Apple logo as the iPhone reboots.

Nokia (all models). Power your phone off and remove the battery for 30 seconds. Reinstall the battery and power the phone on. Alternately, you can enter the code ***#7380#** and select Yes.

Palm Pre Plus. If the phone's menus are still active, select Device Info, choose Reset Options, and select Soft Reset. If the phone is locked up or frozen, hold the power button and cycle the ringer button on and off three times. If that doesn't work, press and hold the Orange, Sym, and R keys until the device reboots. Turn the phone off, remove the battery for 10 seconds, reinstall the battery, and power the phone up.

Windows Phone 7. Turn the phone off, and back on. Alternatively, you can remove the battery for 30 seconds, reinstall the battery, and turn the phone back on.

All other smartphones. You can generally perform a soft reset by powering the phone off and then on or removing the battery and replacing it after 30 seconds.

Hard Reset

A hard reset is a last-ditch option that returns your phone to its factory settings, which means you will lose all data and any installed applications. Before performing a hard reset, you will want to remove the memory card from your phone; that way you can recover data from the card later.

Android (all models with functioning menu systems). One of the following menu-based systems for performing a hard reset should work, depending on the phone and version of Android.

Open the application menu. Tap Settings, SD Card & Phone Storage, and Factory Data Reset, and then follow the on-screen instructions.

From the Home screen, tap Menu, Settings, Privacy, and Factory Data Reset, and then follow the on-screen instructions.

From the Home screen, tap Menu, Settings, Security, and Factory Data Reset, and then follow the on-screen instructions.

When the menu system isn't functional, the following phone-specific options will be helpful for performing a hard reset.

T-Mobile G1. With the G1 powered off, press and hold the Home-End keys until you see a triangle with an exclamation point. Open the QWERTY keyboard and press ALT-W.

T-Mobile G2. With the G2 powered off, press and hold the Volume Down button while you tap the Power button. After the Android logo appears, release the Volume Down button. Press the Volume Down button again, select Clear Storage, and press the Power button. Press Volume Up to start the factory reset.

Motorola Droid. Turn the phone off. Press and hold the Power-X keys to force the phone into recovery mode. Next, press and hold the Volume Up-Camera key to display the recovery menu. Select Wipe Data/Factory Reset from the menu, and then select Reboot Phone.

BlackBerry (all models). Remove the battery and wait for about 30 seconds. Reinstall the battery and turn the phone on.

HTC FUZE. With the device turned on, press and hold the Left and Right soft keys. While holding the keys, use the stylus to press and hold the Reset button on the bottom of the device near the USB port. Text on the display will ask you to confirm the reset.

HTC HD2. With the device powered off, press and hold the Volume Up and Volume Down buttons. With the volume buttons depressed, press and release the End/Power button. When a warning message displays, release the volume buttons. Next, press the Volume Up button to perform the reset. Pressing any other button cancels the reset.

HTC Touch Pro, Touch Pro2, Touch Diamond. With the device turned on, press and hold the Volume Down and Enter buttons. While holding the keys, use the stylus to press the Reset button, located under the battery cover. Continue to hold the Volume Down and Enter keys until a warning message displays. Release the Volume Down and Enter keys, and then press the Volume Up key to reset the phone. Pressing any other button cancels the reset.

iPhone (all models). From the Home screen, tap Settings, General, Reset, and Reset All Settings. This action resets all preferences but retains applications and data. If that doesn't work, go to the Home screen and tap Settings, General, Reset, Erase All Content, and Settings. This will delete all data and applications and return the iPhone to factory conditions.

Nokia (all models). With your phone powered on or in standby mode, type *#7370# and select Yes when prompted. You may need your Lock Code for confirmation. The default lock code is 12345.

If your phone doesn't turn on, try pressing the On/Off button, *, and 3 simultaneously.

Palm Pre Plus. Open Device Info, tap Reset Options, and tap the Full Erase button. And then tap the Full Erase button a second time.

Samsung Behold II. From the Home screen, tap Quick List; and then tap Settings, Reset Settings, and Master Reset. Next, enter your password and tap Yes.

If the phone is frozen or won't turn on, turn the power off and remove the battery. Wait 30 seconds before you reinsert the battery. Press and hold the Volume Down, Send, and End buttons. Keep holding the buttons down until a graphic appears on the display, and then press the Menu key to start the reset.

Samsung Captivate, Epic 4G, Vibrant. Power off your phone and remove the battery. Wait 30 seconds and reinsert the battery. Press and hold the Volume Down button while pressing and releasing the Power button. Press the Volume Down button to select Clear Storage, and then press the Power button. Confirm the reset by pressing the Volume Up button.

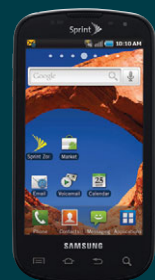
Windows Phone 7. Slide left and tap the arrow icon. Next, Tap Settings and select About, scroll to the bottom of the display, and tap Reset Your Phone. ▲



▲ To perform a soft reset on the BlackBerry Storm or Storm2, remove and then reinsert the battery, or download the Soft Reset application OTA.



▲ To perform a hard reset of the Palm Pre Plus, open Device Info, tap Phone Reset Options, and then tap Full Erase twice.



▲ To soft reset a Samsung Galaxy S phone, press and hold the Volume Up and Power buttons for five seconds. The phone will turn off and back on.

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Happy Trails

Intriguing Gear, New & Around The Bend

by Jennifer Farwell

4G-Ready XOOM Sports New Android OS

■ One of the most intriguing tablets to make a splash debut at this year's International Consumer Electronics Show, the Motorola XOOM appears to have a better shot than most at challenging the dominance of Apple's iPad. Measuring 9.8 x 6.6 x 0.5 inches (HxWxD), the XOOM is a little smaller than the iPad yet features a slightly larger display (10.1 inches vs. 9.7 inches) and a higher resolution (1,280 x 800 vs. 1,024 x 768). The XOOM will be among the first devices to run Google's Android 3.0 Honeycomb, an OS designed specifically for tablet use. It will feature Bluetooth, support for Adobe Flash video and Flash-based Web sites, HDMI output, and corporate email sync (including Exchange and Google). Verizon Wireless will carry a 3G/Wi-Fi version in Q1 with support for an upgrade to Verizon's 4G LTE (Long Term Evolution) network in Q2; a subsequent version will come with 4G LTE built in. Pricing has yet to be announced.



A Slider For Business & Pleasure

■ This nimble slider phone sports a multitouch, capacitive, 4.1-inch WVGA AMOLED (800 x 480 resolution) display, slide-out QWERTY keyboard (plus an on-screen touch keyboard), a 1GHz processor, 8GB or 16GB of nonremovable storage, Wi-Fi (802.11b/g), Bluetooth 2.1 EDR, GPS, and 3G (HSDPA/HSUPA; averages 1 to 2Mbps on the T-Mobile network). It runs on all four GSM/EDGE bands (850/900/1,800/1,900MHz), making it suitable for international use. The Venue Pro offers a nice mix of business and recreational features, with Windows Phone 7 and Office Mobile, Xbox Live gaming and a Zune music player, a 5MP autofocus/flash camera with HD (720p) video capture and FM radio. Dell began shipping the phone to customers who pre-ordered the phone in mid-December.

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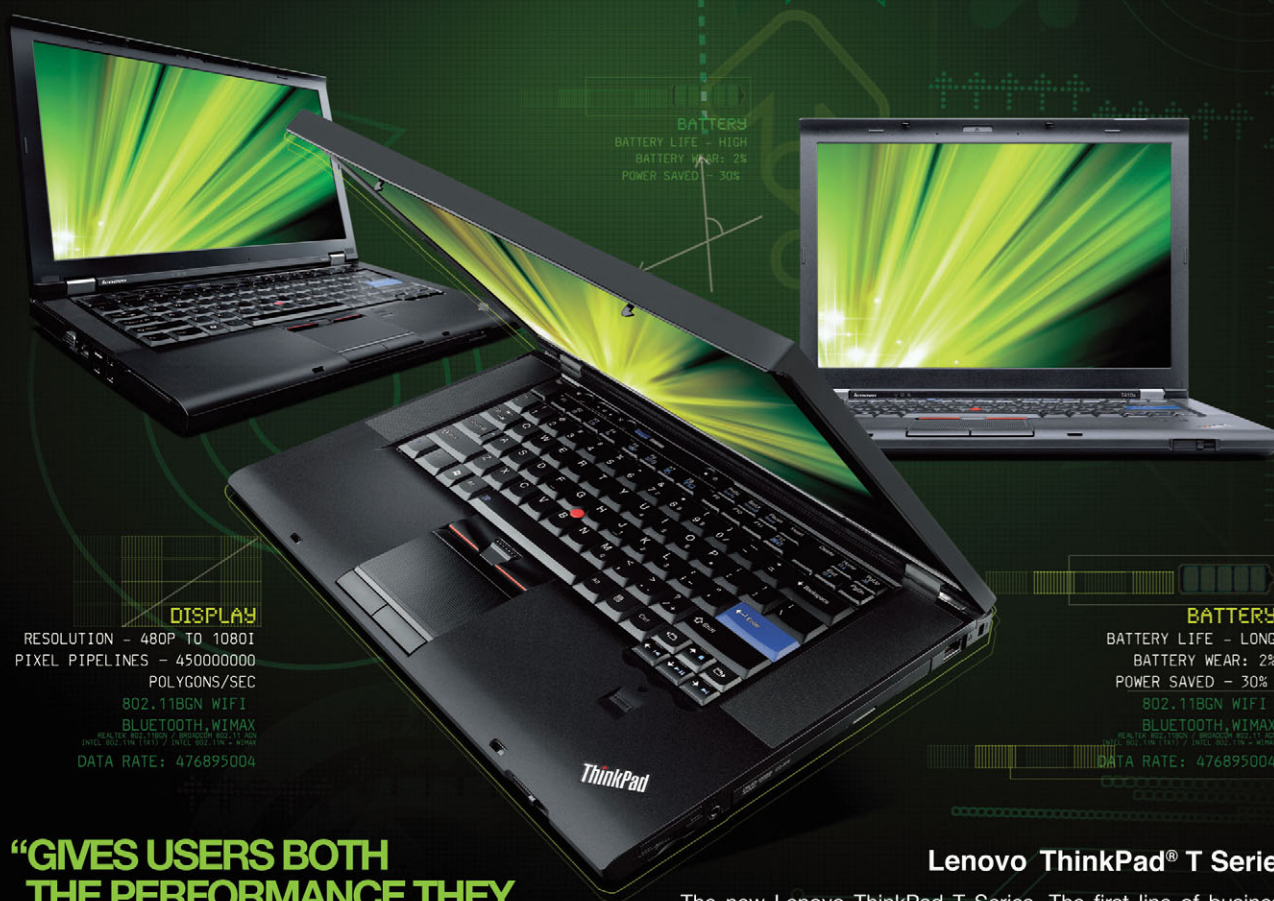
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