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TECHNOLOGY FOR BUSINESS

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Google Fiber

The Super-High-Speed Plan & What It Means For Business

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www.pctoday.com

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Google Fiber

When the Internet search giant announced its Google Fiber project this spring, communities everywhere began vying for Google's attention. Why? It's all about speed. The winning community (or communities, as could be the case) will get fiber-optic cable that can accommodate Internet connection speeds up to 1Gbps. That's about 100 times faster than most home users experience. In this month's featured articles, we look at the project, what it means for its eventual users, and how it could affect business looking forward.

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Technology & Business News



Qualcomm Enhances FLO TV Abilities

Qualcomm is adding applications and new features to its FLO TV mobile TV service, including for mobile devices supporting FLO TV. Additions include interactive features tied to programs and ads to let users access related information and access to a new pay-as-you-go plan to acquire programming (including "limited engagement" events) vs. paying a monthly subscription. New time-shifting abilities, meanwhile, will allow for "popular shows to be stored on FLO-enabled mobile devices" giving "viewers the ability to watch their favorite shows on-demand, even outside of a coverage area."

iPhone Users Take To Opera 1 Million Strong

How popular was Opera's Mini Web browser with iPhone owners after recently getting Apple's official approval? 1,023,380 downloads' worth of popular in its first day of availability alone. Two weeks removed from its release for the iPhone, Opera's preliminary figures indicated the iPhone was already the third most popular device among Opera Mini's global users. (All other devices in the top 20 are from Nokia and Sony Ericsson.) Among U.S. users, however, the iPhone was already the most used device among Mini users, besting RIM's BlackBerry.



1080p Video Captures Coming To HTC Phones

Various outlets recently reported that during the South African launch of the HTC Legend, Desire, and Smart phones, the company's Quinton Leigh hinted that future HTC smartphones possibly set for Q2 2011 release will record video in 1080p HD quality. Current models that can capture HD video top out at 720p. Additionally, the Android-based HTC phones will include 5.1 surround sound. In related news, Leigh reportedly also revealed that HTC is working on an Android-based tablet for 2011 release with the same video and audio features.



Business Web & Bandwidth Use Goes Social

After analyzing 13 billion URLs businesses used in Q1 2010, Network Box found Facebook represented 6.8% of all business Web traffic, followed by Google (3.4%), Yimg (2.8%), Yahoo! (2.4%), and Doubleclick (1.7%). Bandwidth-wise, 10% of all business use went to YouTube, followed by Facebook (4.5%), Windows Update (3.3%), Yimg (2.7%), and Google (2.5%). Network Box's Simon Heron says the figures show "IT managers are right to be concerned" about social network usage at work, with a top concern being social networking apps that pose security risks.

Generation Y Flocks To Online Banking

Based on a survey Fiserv, a provider of financial services tech products, commissioned Accelerant Research to conduct last year, 36% of Gen Y (ages 21 to 29) users have created a debit card, savings, or primary checking account in the last year, "10% higher than any other generation." Further, 48% of Gen Yers with a credit card obtained the card online, while 36% with personal loans applied online. Within a recent 30-day stretch, 80% of Gen Yers used online banking services, and one-third conducted mobile banking activities vs. 11% of baby boomers.

More Mobile Users To Make More Mobile Payments

A recent Juniper Research study predicts that by 2014, roughly half of all mobile phone users globally will buy digital and physical goods via mobile payments due to increased smartphone and app store usage. If true, nearly a billion more users will be on the mobile-payment bandwagon than now. By 2014, Juniper expects the market for making mobile payments for physical goods will be worth \$100 billion alone. The Far East and China, Western Europe, and North America, meanwhile, will represent "nearly 70% of the global mobile payment gross transaction value by 2014."

Study To Chart Health Of 250,000 Cell Phone Users

Over the next 20 to 30 years, a new international COSMOS (www.ukcosmos.org; Cohort Study Of Mobile Phone Use and Health) study hopes to discover if and

how mobile phone use affects users' physical health. Officials plan to study about 250,000 people internationally who use mobile phones daily to "identify if there are any possible health issues linked to using mobile phones over a long period of time." Specifically, officials plan to monitor changes in "the frequency of specific symptoms over time," including headaches, sleep disorders, and risks for cancer, benign tumors, and neurological and cerebro-vascular diseases.



■ Intel Brings Atom Z6 To Smartphones

Intel unveiled its Atom Z6 processor series in early May with the intent of making significant inroads in the smartphone space. Although Atom chips dominate the netbook sector, ARM-based processors have ruled mobile phones for years. Compared to previous Atom CPUs, Intel states the Z6 cuts idle power allowing for at least 10 days of standby, and enables two days of audio playback and up to five hours of Web browsing and video use. Translated, Intel states, expect more than 10 days standby,

up to two days audio playback, and four to five hours browsing and video battery life. Look for 1.5GHz smartphones and 1.9GHz tablets with the Atom Z6 installed later this year.

■ Google Ventures Plans To Expand Investments

Google indicated in early May it intends to pick up the pace where its year-old Google Ventures business is concerned by investing in more startups and expanding outside North America this year. Total investments, however, will likely remain in the \$100 million-a-year mark. Google Ventures' full-time staff, meanwhile, has increased from three to 16 people since launching. It also has invested in 10 companies, but Google CEO Eric Schmidt emphasized Google Ventures "is not a stalking horse" for ultimately acquiring startups it invests in.



■ New Lexar Thumb Drives Have Your Back

Attention, netbook and notebook owners, Lexar wants to make backing up data an automatic chore with its new, extremely portable Echo SE and Echo ZE USB flash drives.

Both pack software that enables automatic backups complete with optional 128-bit AES encryption, backing up only targeted files, and accessing file revisioning abilities to retrieve previous file versions. The SE comes in 16GB (\$89.99), 32GB (\$139.99), and 64GB (\$259.99) sizes with up to 28MBps read and 10MBps write speeds. The ZE, just 20.1 x 15.1 millimeters, comes in 8GB (\$49.99), 16GB (\$89.99), and 32GB (\$139.99) options.

■ Lenovo Shifts Focus To Mobile Internet

Lenovo President Rory Read stated in mid-April during the launch of the company's new Android-based LePhone smartphone for China that the world's No. 4 PC maker hopes to sell millions of new smartphones within the next five years and tens of millions further out. As part of a move to put stronger emphasis on wireless computing, Lenovo estimates its mobile Internet devices will make up 10 to 20% of its revenue in five years. Further, Chief Executive Yang Yuanqing stated that sales of Lenovo's Web-related devices will surpass traditional PCs within five years.



■ The iPad In A Landslide

"Unqualified hit" seems fit for describing Apple's iPad, which sold 1 million-plus units in just 28 days after its April 3 launch. The iPhone needed 74 days to do the same. Net Applications also found the iPad accounted for nearly as much global online usage (0.03%) among users in its first 10 days after release as BlackBerry and Android devices (both about 0.04%). For April, data indicated San Francisco topped all areas usage-wise, Hawaii and California rated as the top states, and Wyoming the lowest. Weekend usage, meanwhile, nearly doubled that of weekdays.



Travel News



Ford Adds Android & BlackBerry App Support

Ford has announced plans to offer downloadable Sync AppLink software to owners of the company's new 2011 Fiesta that will support accessing and controlling Android and BlackBerry apps via voice commands and in-car controls. Ford reps recently stated "most Sync-equipped vehicles" will get the software next year, and "interoperability with other smartphones" is coming. Fiesta owners will first get access to Internet radio station Pandora, podcast/radio streamer Stitcher, and mobile Twitter client OpenBeak all via the Android and BlackBerry app stores.

Online Travel Sales Headed Upward

Despite U.S. online leisure and unmanaged business travel sales falling 6.7% in 2009 to \$88.4 billion, eMarketer is calling for the sector to climb this year by 4.6% to reach \$92.5 billion and peak in 2012 at 7% growth reaching \$105.4 billion. eMarketer's Victoria Petrock, author of the "Online Leisure Travel: Six Post-Recession Trends" report that outlines the data, states, "Online will grow to make up an even greater percentage of the total travel market in the post-recessionary environment."

Lonely Planet, Hoteliers Help Stranded Travelers



Kudos to Lonely Planet, various European hoteliers, and other travel-related businesses for lending some good will to travelers stranded at various European airports following the Eyjafjallajökull volcano eruption in Iceland. Before the eruption, HotelsCombined.com stated daily room rates in Europe averaged about \$120. The week after, rates were at

about \$96. Lonely Planet, meanwhile, made 13 of its European iPhone city guides free for four days, after which it dropped the normal \$15.99 price of a guide to \$4.99 through April.

A Hotel That Welcomes Cyclists

Crowne Plaza Copenhagen Towers already prided itself as being "one of the world's greenest hotels." The hotel recently took "efficient energy production one step further" by adding bicycles to its gym that, when pedaled, can produce electricity. Guests who produce 10 or more watt-hours of electricity get a complimentary meal in return. iPhones mounted on the handlebars inform bikers how they're doing, and particularly enterprising guests can "race against the hotel's solar panel system" to produce energy. The hotel states one guest averaging a speed of 18mph for 60 minutes can produce approximately 100 watt-hours of electricity.

Crowne Plaza's Alternative Wake-Up Call

In other Crowne Plaza news, select locations are offering "alternative wake-up" calls aimed at helping business travelers turn off their gadgets at 7 p.m. IHG, which owns the brand, stated research suggests "60% of professionals struggle to switch off their technology and wind down before they go to sleep." Another 60% indicated 7 p.m. "as the best time to stop working." "Checking emails just before bed halts the production of sleep enhancing melatonin and has the same effect as drinking a double espresso," stated sleep expert Dr.

Chris Idzikowski.



Samsonite Shines Sun On New Luggage

Expect a new line of consumer carrying cases this summer from Samsonite integrating lightweight CIGS

(copper, indium, gallium, selenide) solar modules from Ascent Solar to provide owners "power on the go." The luggage will "lead a new wave of portable solar charging solutions through Samsonite that will revolutionize the way we power our electronics anywhere and everywhere under the sun," stated Farhad Moghadam, Ascent Solar CEO. Reportedly, the luggage can power iPods, cell phones, GPS devices, and similar devices. Pricing and release details are still pending.



Victorinox Issues Fast Passes

With the economy picking back up, chances are your business-related travel is, too. If so, Victorinox Swiss Army's new Empire With Security Fast Pass (www.swissarmy.com; \$249) case can accept most 15.4-inch notebooks and has a rear Security Fast Pass Aero Sleeve that includes a "breathable window" to help get you through security screenings quicker. Measuring 13 x 16.5 x 3.5 inches (HxWxD) and 24 inches unfolded, the bag sports interior nylon twill lining, a removable padded shoulder strap, a front pocket for electronics, a main compartment, and an organization panel.



Evergreen Lodge Opens John Muir House

Lodging got more private at Yosemite National Park May 15 with the opening of the cedar-constructed John Muir House located near the park's Evergreen Lodge. The 2,500-square-foot, three-bedroom house sleeps up to 10 and offers a full kitchen, loft, great room with ceiling to floor windows, three bathrooms, screened porch, and 1,000-square-foot private deck with hot tub. Other niceties include a plasma TV, DVD player, gas fireplace, and daylight house-keeping service. Off-peak rates are \$550 to \$795 nightly; peak and holiday rates are \$750 to \$995.

Will Seafood Be On This Summer's Menu?

There's a possibility seafood will be unavailable or extremely expensive at restaurants you frequent this summer following the BP oil spill off the Gulf Coast in April. In mid-May, the National Oceanic and Atmospheric Administration banned fishing in 19% of the Gulf due to the spill. Various experts predict long-term effects could cripple the seafood industry, which along with restaurants, grocery stores, and other retailers were facing a potential major dent in shrimp, oyster, crab, and crawfish production. Louisiana, for example, produces roughly a third of seafood eaten nationwide while bolstering the state's economy by \$2.4 billion annually.

Mixing Cocktails? Add These Spirits

What do you call a judge at the recent Ultimate Cocktail Challenge in New York City? Lucky. The contest aimed to "ascertain which spirits and wine brands taste the best in a flight of professionally crafted cocktails that are viewed as classic examples for that spirit or wine category." Categories included Gin & Genever (Tanqueray No. 10 Gin won the Chairman's Trophy), Extra Dry Martini (Tanqueray London Dry Gin), Gin & Tonic (Plymouth Gin), and Tequila & Mezcal (Milagro Core Reposado Tequila). The best North American whiskey for mixing an Old Fashioned? Woodford Reserve Distiller's Select Bourbon Whiskey.

Ski Industry Sees "Dramatic Rebound"

Good news for the U.S. ski industry: According to preliminary numbers from the 2009-2010 Kottke National End of Season Survey, the industry saw 59.7 million total visits this season, "the second best season ever" despite a 14% decrease in nationwide snowfall at ski areas. Only the 2007-2008 season's 60.5 million visits ranked higher. Nationally, only the Northeast failed to see substantial gains. The Pacific Southwest saw 15% more visits over the 2008-2009 season, while the Midwest and Southeast saw 7.2% and 6.7% gains, respectively. The Rocky Mountain region passed the 20-million visit mark, growing by 3.4%.

Marriott Marquis Celebrates Silver Anniversary

Visiting New York, Atlanta, or San Francisco this summer? Consider an overnight stay at those cities' respective Marriott Marquis Hotels, which are celebrating 25 years of business. For guests, the hotels are offering a Celebration Hotel Package through Sept. 6 that includes upgraded hotel accommodations, a free bottle of Iron Horse Vineyards champagne, custom-created chocolates from Executive Pastry Chef Steve Evetts, and a \$25 hotel restaurant gift card. The offer runs seven days a week (based on availability), but you must book three days in advance.



10 New Smartphones

Each new generation of smartphones offers new features for enhanced productivity and entertainment. Here's a quick look at 10 of the most recent smartphones on the U.S. market.



Droid Incredible By HTC

\$199.99 after discounts with two-year contract
www.verizonwireless.com

The newest Android-based smartphone from HTC and Verizon Wireless features a 1GHz Snapdragon processor, 8GB internal memory, an 8MP digital camera, and Verizon's new feature for unlimited Skype-to-Skype calling and instant messaging. This Wi-Fi-capable smartphone is ready to handle business and entertainment use.



HTC Evo 4G

\$199.99 after discounts with two-year contract
www.sprint.com

Sprint announced the HTC Evo 4G as "America's first 4G phone," citing its ability to use super-fast (think desktop DSL) WiMAX technology where available. In addition to business-friendly smartphone features, this Android 2.1-based phone includes an 8MP digital camera and an HDMI connection for displaying to HD screens.



Samsung Galaxy S

Upcoming (Summer 2010) | www.samsung.com

As of press time, full specifications were not available for the forthcoming Galaxy S smartphone. It will run the Google-backed Android OS and therefore handle professional functions, but also prominent are video playback (HD at 720p) and social networking capabilities. The Galaxy S also features a bright 4.1-inch touchscreen.



Motorola i1

Upcoming | now.sprint.com/motoi1

The Motorola i1, soon to be available exclusively from Sprint Nextel, is billed as "the world's first Android-powered Nextel Direct Connect smartphone." The military-grade, ruggedized i1 has everything you'd expect from a high-end smartphone in terms of productivity and connectivity, including business email, plus easy access to Google services.

Specs

Carrier: Verizon Wireless
Manufacturer: HTC
Platform: Android 2.1
Networks: CDMA, EVDO Rev. A
Talk Time: 5.2 hours
Standby Time: 6 days
Weight: 4.59 ounces
Wireless: Wi-Fi, Bluetooth

Specs

Carrier: Sprint
Manufacturer: HTC
Platform: Android 2.1
Networks: CDMA, EVDO Rev. A, WiMAX
Talk Time: N/A
Standby Time: N/A
Weight: 6 ounces
Wireless: Wi-Fi, Bluetooth

Specs

Carrier: TBD
Manufacturer: Samsung
Platform: Android 2.1
Networks: GSM
Talk Time: N/A
Standby Time: N/A
Weight: N/A
Wireless: Wi-Fi, Bluetooth

Specs

Carrier: Sprint
Manufacturer: Motorola
Platform: Android 1.5
Networks: iDEN
Talk Time: 3.3 hours
Standby Time: 4 days
Weight: 4.63 ounces
Wireless: Wi-Fi, Bluetooth



Palm Pre Plus

\$149.99 after discounts with two-year contract
www.verizonwireless.com

The Palm Pre Plus is Verizon's CDMA version of the webOS smartphone. The "Plus" indicates the phone's ability to act as a Wi-Fi hotspot. Thanks to Palm's webOS platform, the Pre Plus is a multitasker's dream because it lets you run multiple applications simultaneously. The OS also helps you keep track of various communications in a single view.



Motorola Backflip

\$99.99 after discounts with two-year contract | www.wireless.att.com

The Motorola Backflip is the first smartphone from AT&T to offer the Google-backed Android operating system. The interface, however, is dominated by Motorola's Motoblur software, which integrates standard phone communications with social networks. The Backflip includes a flexible slide-out keyboard and is best for consumers but suitable for business.



HP iPAQ Glisten

\$179.99 after discounts with two-year contract | www.wireless.att.com

With this Windows Professional world phone, you can stay connected anywhere in the world where there's a compatible network. Features include 512MB internal memory (expandable up to 16GB with a microSD card), stereo Bluetooth, MP3 playback, a 3.1MP camera with 5X zoom, and OTA (over-the-air) firmware updates as needed.



BlackBerry Tour 9630

\$99.99 after discounts with two-year contract | www.verizonwireless.com

In addition to everything you've come to expect from a business-class BlackBerry, the Tour 9630 is ready to handle many international networks. The phone also features the full complement of Verizon-specific features, including VZ Navigator, VZ Navigator Global, and V CAST Music with Rhapsody. The phone has 256MB of built-in memory.



Nexus One

\$529 unlocked; also available through AT&T and T-Mobile
www.google.com/phone

The Nexus One marks Google's first foray into designing its own mobile phone hardware, which HTC built to order. Its high points include a 3.7-inch organic display, stereo Bluetooth, a 5MP camera with video capture capabilities, and an included 4GB microSD card (expandable up to 32GB).



Droid Eris By HTC

\$79.99 after discounts with two-year contract | www.verizonwireless.com

Using Google's Android platform, the Droid Eris debuted along with Verizon's other Android smartphone, the Droid. This model has Bluetooth 2.0 +EDR, speech recognition capability, a 5MP camera with autofocus, a 3.5mm headphone jack, and an 8GB microSD card (with support for capacities up to 16GB).

Specs

Carrier: Verizon Wireless
Manufacturer: Palm
Platform: webOS
Networks: CDMA, EVDO Rev. A
Talk Time: 5.5 hours
Standby Time: 14.5 days
Weight: 4.89 ounces
Wireless: Wi-Fi, Bluetooth

Specs

Carrier: AT&T
Manufacturer: Motorola
Platform: Android 1.5
Networks: WCDMA, GSM, HSDPA
Talk Time: 6 hours
Standby Time: 13.5 days
Weight: 4.7 ounces
Wireless: Wi-Fi, Bluetooth, GPS

Specs

Carrier: AT&T
Manufacturer: HP
Platform: Windows Mobile Professional 6.5
Networks: WCDMA, GSM, HSDPA
Talk Time: 5 hours
Standby Time: 15 days
Weight: 5.29 ounces
Wireless: Wi-Fi, Bluetooth

Specs

Carrier: Verizon Wireless
Manufacturer: Research In Motion
Platform: BlackBerry OS
Networks: CDMA, EVDO Rev. A, UMTS
Talk Time: 5 hours
Standby Time: 14 days
Weight: 4.58 ounces
Wireless: Bluetooth, A-GPS

Specs

Carrier: Unlocked; T-Mobile
Manufacturer: HTC
Platform: Android 2.1
Networks: GSM, EDGE, HSPA
Talk Time: 10 hours (2G); 7 hours (3G)
Standby Time: 12 days (2G); 10.4 days (3G)
Weight: 4.58 ounces
Wireless: Wi-Fi, Bluetooth, A-GPS

Specs

Carrier: Verizon Wireless
Manufacturer: HTC
Platform: Android 1.5
Networks: CDMA, EVDO Rev. A
Talk Time: 3.5 hours
Standby Time: 15.5 days
Weight: 4.23 ounces
Wireless: Wi-Fi, Bluetooth, GPS

10 New Notebooks

As manufacturers pack an increasing number of features into notebooks and offer a wider variety of screen sizes, it can be a challenge to keep up with what's on the market. Here, you'll find a quick look at 10 top notebooks and mininotebooks that are ideal for business and/or travel. The prices and specs listed apply to each notebook's base configuration model.



HP ProBook 4420s

\$759 base price | www.hp.com

The business-class ProBook 4420s is designed to be affordable for general professional use, but it also has features especially for creating and editing multimedia files. The notebook includes HP's 3D DriveGuard feature, which protects the hard drive in the event of a drop or other impact. Prices for the three HP ProBook 4420s configurations are \$759, \$869, and \$929.



Lenovo ThinkPad L512

\$599 base price | shop.lenovo.com

Lenovo claims its new ThinkPad L Series notebooks (including the L512) are "the greenest on the market" and contain "the highest amounts of post consumer recycled content." The L512 can operate up to eight hours on a charge with the optional 9-cell battery (a 6-cell battery is included in the base price), and supports mobile broadband plans through AT&T, Sprint, and Verizon.



Lenovo ThinkPad X201

\$1,099 base price | shop.lenovo.com

Lenovo's ThinkPad X201 notebook features an Intel Core i5 processor and Intel HD graphics for excellent performance. The specs listed here are for the base model. Customization options include Windows 7 Professional 64-bit, a 128GB SSD, Bluetooth, Intel Centrino Advanced-N plus WiMAX, 4GB memory, and integrated 3G mobile broadband with GPS.



Panasonic Toughbook C1

\$2,499 (available in June) | www.panasonic.com

Billed as the "world's lightest 12.1-inch convertible tablet PC," the Toughbook C1 combines the best elements of full-featured tablets (most notably, a digitizer screen with stylus and multitouch capability) and field-ready computers (rugged magnesium alloy case, hot-swappable battery, vehicle power adapter, and mobile broadband-ready).

Specs

Operating System: Windows 7 Professional
Processor: 2.26GHz Intel Core i3-350M
Memory: 2GB DDR3 SDRAM
Storage: 320GB SATA drive
Wireless: 802.11b/g/n; Bluetooth
Other Features: HP QuickLook 3 provides one-touch access to email, calendar, contact, and other information without booting
Screen Size: 14 inches
Weight: 4.71 pounds

Specs

Operating System: Windows 7 Home Premium 32-bit
Processor: 2.13GHz Intel Core i3-330M
Memory: 2GB DDR3 SDRAM
Storage: 160GB SATA drive
Wireless: 802.11a/b/g/n
Other Features: Comes with a DVD-R drive; there are many customization options available when ordering online
Screen Size: 15.6 inches
Weight: 5.7 pounds

Specs

Operating System: Windows 7 Home Premium 32-bit
Processor: 2.4GHz Intel Core i5-520M
Memory: 2GB DDR3 SDRAM
Storage: 160GB SATA drive
Wireless: 802.11a/b/g/n
Other Features: Five-in-one memory card reader; integrated mobile broadband; many upgrades
Screen Size: 12.1 inches
Weight: 2.48 pounds

Specs

Operating System: Windows 7 Professional
Processor: 2.4GHz Intel Core i5-520M
Memory: 2GB DDR3 SDRAM
Storage: 250GB SATA drive
Wireless: 802.11a/b/g/n; Bluetooth
Other Features: Storage is expandable with SD card slot and optional Desktop Dock with DVD Multi Drive
Screen Size: 12.1 inches
Weight: 3.2 pounds



Lenovo ThinkPad X100e

\$449 base price | shop.lenovo.com

The ThinkPad X100e is among Lenovo's latest offerings specially designed for business use. Although the basic features listed here are for the lowest price model, optional customizations prior to purchase include Windows 7 Professional 32-bit, 4GB memory, and Bluetooth.

Specs

Operating System: Windows 7 Home Premium 32-bit
Processor: 1.6GHz AMD Athlon Neo
Memory: 1GB DDR2 SDRAM
Storage: 160GB SATA drive
Wireless: 802.11a/b/g/n
Other Features: Integrated Gobi mobile broadband; choice of 3- or 6-cell battery; available in black or red
Screen Size: 11.6 inches
Weight: 3 pounds



Specs

Operating System: Windows 7 Ultimate 64-bit
Processor: 3.06GHz Intel Core 2 Duo T9900
Memory: 8GB DDR3 SDRAM
Storage: 500GB SATA drive; Blu-ray player/burner
Wireless: 802.11a/b/g/n
Other Features: Memory Stick PRO, ExpressCard, and SD card slots; battery life up to 7.5 hours
Screen Size: 13.1 inches
Weight: 3.3 pounds



Specs

Operating System: Windows XP/7 and Linux options
Processor: 1.66GHz Intel Atom N450
Memory: 1GB DDR2 SDRAM (2GB optional)
Storage: 160GB SATA (larger drives and 80GB SSD optional)
Wireless: 802.11b/g/n
Other Features: Ethernet port; 3 USB 2.0 ports; Secure Digital slot
Screen Size: 10.1 inches
Weight: 2.6 pounds



Specs

Operating System: Windows 7 Premium/Slate Mode
Processor: Intel Core 2 Duo
Memory: 4GB DDR3 SDRAM
Storage: 128GB SSD
Wireless: 802.11a/b/g
Other Features: Built-in Web camera; 10 hours of battery life (eight hours for slate)
Screen Size: 11.6 inches
Weight: 3.7 pounds



Specs

Operating System: Windows XP Professional
Processor: 2GHz Intel Core 2 Duo T5870
Memory: 4GB DDR2 SDRAM
Storage: 320GB SATA drive; DVD Super Multi
Wireless: 802.11a/b/g/n
Other Features: Memory card reader; built-in Web camera; HDMI port
Screen Size: 15.6 inches
Weight: 5.86 pounds



Specs

Operating System: Windows 7 Professional 64-bit
Processor: 1.73GHz Intel Core i7-820QM
Memory: 8GB DDR3 SDRAM
Storage: 500GB SATA drive; DVD Super Multi
Wireless: 802.11a/b/g/n
Other Features: 256GB SSD and HP Mobile Broadband optional
Screen Size: 14 inches
Weight: 5.2 pounds



Sony VAIO Z Series

\$1,899.99 base price | www.sonymstyle.com

The VAIO Z Series notebooks are Energy Star 5.0-compliant and include a biometric fingerprint sensor and (on models with hard drives) antishock capabilities. The specs listed here are the best available when purchasing a Z Series notebook, not necessarily the specs you'll get with the base price model.



HP Mini 5102

\$415 base price | www.hp.com

The upcoming HP Mini 5102 is small but includes a keyboard that's comfortable to use. The Mini 5102 stands out because it has capabilities that make it suitable for business users. The notebook features multiple connectivity options and ports, HP Face Recognition, and HD playback.



Lenovo IdeaPad U1 Hybrid

Upcoming (Summer 2010) | www.lenovo.com

The IdeaPad U1 is the market's first hybrid notebook. That is, one with a detachable screen (slate) that can be used as a separate tablet PC. The idea is that the tablet will be used mainly as an Internet device, media player, and ereader. Specs listed here are for the notebook.



Toshiba Satellite Pro L450

\$699 | laptops.toshiba.com

A recent addition to Toshiba's business notebook line. The price and specs listed here are for the high-end L450-EZ1543. This model includes three USB 2.0 ports, a battery that lasts up to 3.38 hours per charge, and recovery media for Windows 7 Professional (usable if you upgrade).



HP EliteBook 8440w Mobile Workstation

\$1,425 | www.hp.com

Billed as "business-rugged for every endeavor," HP's EliteBook offers a variety of component combinations and features a sturdy design and long battery life. The 8440w is the workstation model, made with business users in mind. This model is upcoming; specs listed are for the best options.

Greenovations

Energy-Conscious Tech

The electronic devices that make our lives easier also produce some unwanted side effects on the environment. Fortunately, many consumer electronics manufacturers are now making products that keep us productive and lessen our device's energy demands. Read on as we uncover some of the newest environmentally friendly technology available.

by Nathan Lake

An HDTV That Senses Your Presence

Sony's new EX700 series (prices vary by model; www.sonystyle.com) HDTVs include a Presence Sensor that can detect movement and body heat within a 10-foot range of the television. And with the EX700 series' Pic Off Timer mode, the television can automatically turn off when no motion or body heat is detected after a set timeframe. When you return to that 10-foot range again, the picture turns back on automatically. The EX700 series also features an Energy Saving Switch (on the side of the television) that you can toggle off to eliminate standby power consumption. The HDTV is available in sizes from 32 inches to 60 inches.



New LED Lighting

GE recently announced a 9-watt Energy Smart LED bulb (prices expected to be \$40 to \$50; www.ge.com) that's designed to produce as much as 450 lumens, which is the Energy Star equivalent of the brightness of a 40W incandescent light-bulb. Even better, GE indicates the 9W LED bulb will offer a rated life of 25,000 hours or approximately 17 years when left on four hours a day. The LED design means the bulb has no filaments to break, and it can instantly provide full brightness. GE expects the 9W Energy Smart LED bulb to be available this fall or early in 2011.



The Solar-Powered iPhone

Want to become more eco-conscious and also extend the battery life of your iPhone 3G or 3GS? Novothink's Surge (\$79.95; www.novothink.com) is a solar charger with a built-in cradle and 30-pin Apple connector, so you can just slide and lock the iPhone into the charger for carrying convenience. It's Apple-certified and provides full access to your iPhone's touchscreen. The Surge stores the energy it collects in an internal battery that offers 105% the capacity of the iPhone 3G, and to help you identify the strength of your light source, Novothink integrates a four-LED indicator. There's also a USB port for syncing up with a PC or charging the internal battery when the sun is down.



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Solar Limits

It Isn't (Always) Easy Being Green

High costs, rate spikes, and not knowing what to expect in the future from your electric utility are all good reasons to start thinking about alternative ways to power your business. When it comes to thinking "alternative," green is what usually comes to mind these days. But green isn't the right choice for every situation.

Solar Basics

There are a number of ways going solar can reduce energy costs; we'll concentrate on solar electric, usually referred to as photovoltaic (PV), systems. PV systems use solar panels made from silicon to convert sunlight to electricity. They can be used to power small devices, such as calculators and cell phones, or scaled up to power homes and businesses, either in a grid-tied system that feeds excess energy to an electric utility, or a stand-alone off-grid system that uses batteries to store excess power.

Solar PV has some attractive characteristics. Chances are your electric rate is based on demand; the rate goes up when you use electricity during peak use hours. Peak hours for electric rates tend to match peak output for solar PV systems: afternoons, when the sun is high in southern skies. With a PV system, you can reduce the need to buy peak rate energy and instead use your own electricity. You can also sell unused electricity back to the utility, further reducing your out-of-pocket costs.

A PV system may seem like a perfect match for your business, but there are some considerations; the most obvious is physical location. Is your business situated to take advantage of solar power? Do you have enough space to install a PV system of appropriate size for your needs? If you're installing on a building, are your roofs in good shape? Can the building take the additional load of the PV system? Could someone come along later and construct a building that blocks your panels from the sun? If your site passes the basic checklist, it's time to consider size and finances, including the length of the payback period and ownership.

Sizing A Solar PV System

Sizing a PV system starts with determining your average daily kilowatt-hour usage, including during peak hours. Armed with this basic information, you can decide whether it would be best to eliminate your electric

Introduced in February 2009, and not yet available in the U.S., the Samsung Blue Earth (www.samsung.com) was the first solar-powered, full-touch phone. The phone is made from PCM (recycled plastic extracted from water bottles), making it even more eco-friendly.



Flooring maker Mannington Mills (www.mannington.com) engaged CarbonFree Technology (www.carbonfreetechnology.com) to develop this 603-kilowatt rooftop solar power system for its facility in Salem, NJ.

cost completely, or just address a portion of it, usually the amount used during peak hours, because this will deliver the quickest ROI.

Eliminating all consumption requires a large-scale system that will have a much longer ROI, and that may be better suited to an alternative means of financing to reduce your capital costs.

Paying For A Solar PV System

Paying for it may be the most difficult part of a solar project. Until mid-2005, most solar installations were self-financed, either directly from operating capital or via bank loan. In either case, the business held ownership of the system. Payback was calculated by comparing the estimated utility cost over the lifetime of the system against the actual cost savings.

Power Purchase Agreements. In 2006, PPAs (Power Purchase Agreements) were introduced to allow businesses to reap the benefits of on-site solar PV systems without the upfront capital costs.

PPAs work by having a third-party investor purchase and install the solar PV system at your location; you agree to buy the power generated, usually at a price that's significantly lower than the local utility's rates. Your business gets a long-term reduced price for electricity; the investor gets the energy tax credits, ownership of the installation, and the income from any excess electricity that's sold back to the utility. You may have the option to purchase the PV system at some later date, at its then-current value, or extend the PPA.

The disadvantage of PPAs is that investors look for places where they can quickly and easily install 200-kilowatt or larger systems. Businesses that can't host large installations

are usually passed over, leaving self-financing or basic leasing as the only options.

Feed-In Tariffs. Although not technically a financing option, FITs (feed-in tariffs) are a way for local, regional, and county governments to encourage the adoption of green technologies. FITs set the rates utilities must pay when they purchase power from renewable energy sources. The rates are calculated based on the cost of the renewable energy source, plus a profit for the supplier. Because of the guarantee of a reasonable return, FITs encourage businesses to use a self-finance or lease model to cover the cost of installing a solar PV system. FITs are currently available statewide in Vermont, and in many communities and regions throughout the U.S.

Mobile Devices

Almost everyone has seen a solar-powered calculator; the same technology is suitable for mobile devices. Currently, cell phones with solar power capabilities are available chiefly in countries where local power production is limited. But some manufacturers plan to bring them to the U.S. and other countries soon.

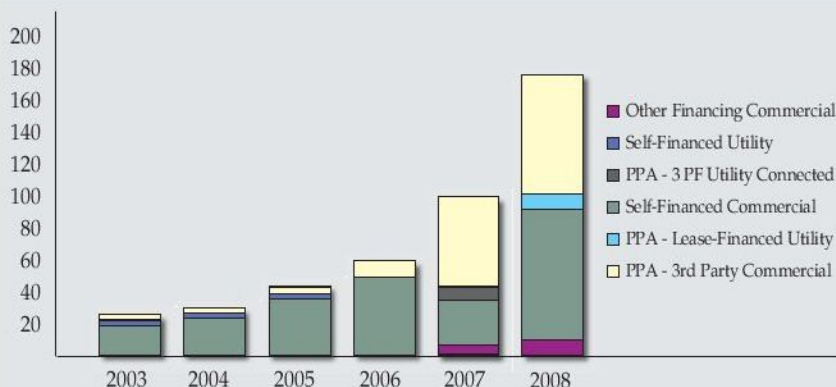
Some mobile devices in the U.S. can already use solar chargers, which have a small, standalone PV panel that's sized to fit. If solar chargers seem like a luxury, consider how standard mobile charging systems are used in a typical office setting. Every desk, office, or cubicle has one or more battery chargers plugged in. Even when not actively charging batteries, these devices suck power. Multiply that by the number of individuals in your company, and suddenly solar chargers make perfect sense.

ROI Is King

As attractive as solar is, it's not the right fit for every business. The rate of return is the key. If the length of time it takes to make your money back comes close to the expected lifetime of the equipment, green may not be your color, at least in terms of electricity.

by Tom Nelson and Mary O'Connor

Finance In U.S. Commercial PV



By the end of 2008, PPAs (Power Purchase Agreements) began to assume a dominant role in large-scale installations, while self-financing remained attractive for small-scale installations.

Information courtesy David Adams, Buildings & Energy (www.buildingsandenergy.com).

Business Solar Installations: Three Examples

Frog's Leap (www.frogleap.com) is a 100% solar-powered winery located in California's Napa Valley. Frog's Leap built its system in 2005, using the self-finance model. With 1,020 PV panels spread over a half-acre parcel, Frog's Leap can produce 168 kilowatts per day or 450,000

rebate, for a final cost of \$600,000. Payback took just six years.

Mannington Mills (www.mannington.com) used a PPA model, partnering with CarbonFree Technology (www.carbonfreetechnology.com), which arranged the financing, construction, and maintenance of the 602.7-kilowatt solar PV system. Mannington agreed to buy power from the installation on a 20-year contract. The project presented many challenges, due to the age of the buildings and roofs.

Arizona State University (www.asu.edu), which also partnered with CarbonFree Technology, used the PPA model for the simple reason that, as a public institution, it's considered non-profit, and isn't eligible for any of the federal or state tax incentives available for solar PV systems. By using a PPA, ASU was able to install a PV system with no upfront cost, passing the tax incentives along to the installation owner. The other interesting aspect of the ASU installation was the use of a parking garage as the support. Through a simple canopy structure, the PV system uses the entire surface area of the top deck of the garage. Its cooling shade is a bonus.



PHOTO BY TERRY JOANIS

Frog's Leap uses a 168-kilowatt solar array to supply 100% of the power needed to run its winery in California's Napa Valley. The company sells excess electricity produced by this grid-tied installation to the local utility.

kilowatts per year. It uses 68 kilowatts per day and sells the excess to the local utility. The project cost \$1.2 million; the utility provided a 50%

Power Considerations

"Vampire Electronics" Suck Up Profits



PHOTO COURTESY SYLVANIA

CFLs (compact fluorescent bulbs) come in a wide variety of shapes, sizes, and wattages suitable for many uses.

If you could find a way to reduce your shipping costs by 25%, you would almost certainly do so. Well, if you're not paying close attention to your electricity use, you could be missing an opportunity to save as much as 25% of your energy costs. We'll outline some of the energy issues and then note possible resolutions.

Phantom Electricity Costs You Money

Your office is full of useful electronic devices: televisions, copiers, scanners, computers, monitors, telephones, clocks. You need these tools to conduct business, but they use electricity, and electricity costs you money. How much money? According to the U.S. Department of Energy, a computer and monitor can cost you close to \$80 per year to run. Multiply that by a few hundred systems, and it quickly adds up; even a small office with 25 systems can spend \$2,000 every year just to power its computers.

But at least these are known quantities; they're simply part of the cost of doing business. What about those costs that you

don't see? Hidden electricity costs can spiral out of control without your ever being aware that you're wasting money.

One of the biggest culprits is "vampire electronics" or "phantom electricity." This is the electricity that a device continues to use even though it's turned "off." This can include most electronic devices, such as clocks, displays, battery chargers, televisions, communications devices, radios, and copiers. Phantom electricity costs are the penalty we pay for having "instant-on" devices; that convenience costs money.

Inefficient Servers & Lighting

Some equipment is simply inefficient, and inefficiency affects the bottom line. Servers are a prime example: Whereas running a desktop computer might cost \$80 per year, running a server can easily cost three times that amount. A rack of servers can draw a lot of power—and most of those servers must run 24/7/365.

Few of us realize just how inefficient incandescent lamps can be. CFLs (compact fluorescents) last up to 10 times longer, produce only 10% of the heat, and use about 25% of the energy. The U.S. DoE (Department of Energy) estimates that switching will save you about nine times the original cost of the CFL bulb.

HVAC Costs Mount Up

Heating and air conditioning costs are among a company's greatest expenses, and electronic devices contribute to that cost. All electronic devices are inefficient to one degree or another, and any power that a device doesn't utilize with 100% efficiency is converted to heat. Then you spend money on air conditioning to counteract that heat.

How To Reduce Costs

According to David Roylance, president and COO of Dallas-based SaveOnEnergy.com, newly competitive markets allow companies to aggressively shop for energy.

Roylance also points out that lighting and HVAC represent significant portions of a business's energy expense. "The continued use of inefficient lighting and ballasts are a significant contributor to energy usage, as is the lack of attention to climate control settings, especially during nonoffice hours or other business downtime."

There is no single solution, but there are several things you can do to reduce your energy costs.

Use Energy Star-compliant equipment and follow Energy Star recommendations. You can find out more at the



Power supplies that are 80 PLUS-certified, such as this Zalmán ST unit, are 80% efficient or better and Energy Star-compliant.

bad for the machine; the PC will reach the end of its useful life long before the effects of being switched on and off can have a negative impact on the system.)

Turn your lights off at night. Use task lighting when possible, rather than paying to light up an entire floor just so one person can work late. Using CFLs when appropriate is a no-brainer.

Virtualize when possible. Most servers are underutilized, and virtualization eliminates unused and underused servers. You can get more use—and a better ROI—out of your equipment by setting up “virtual servers” and having one physical box do the job of several.

Eliminate “vampire” loads: Plugging office electronics into a single power strip and turning off the power strip when leaving each night helps eliminate “phantom” electric loads and saves energy.

As the man said, “What you cannot measure you cannot manage. And what you cannot manage, you cannot improve.” Use this handy DoE formula to measure your equipment’s energy use: Wattage × Hours Used Per Day ÷ 1000 = Daily kWh (kilowatt-hour) Consumption. Then multiply by your current electricity rate to see how much that espresso maker is really costing you.

Just as there’s seemingly no end to skyrocketing expenses, there’s also no shortage of ways to combat them. Take a good look at the DoE’s Office Energy Checklist at j.mp/V1SnJ and consider using the energy analysis tools at www.nrel.gov/buildings/energy_analysis.html. You might also find the federal government’s Small Business Guide to Energy Efficiency useful; it’s at j.mp/pZLvE.

Take The Reins

Don’t let obsolete devices and inefficient practices cause you to pay for more energy than you really need. Instead, use these tips to bring your energy expenditures under control. Your bottom line will thank you for it—and the nation’s energy crisis will benefit, too.

by Rod Scher

EnergyStar site at www.energystar.gov. You can buy Energy Star-compliant computers, appliances, lighting, copiers, and other office equipment. When it’s time to replace or upgrade, look for the Energy Star emblem.

Remember that the busier your equipment is, the more efficient it is. The more employees who share machines, the more efficient they will be. An idle machine is a wasted resource, and one that’s probably using up electricity to boot. If it’s “on,” it should be working as much and as often as possible. Don’t buy that second copier or laser printer; if it’s feasible, place one machine in a centralized location where all employees can utilize it instead.

Use your equipment’s power management features, including your computers’ Sleep and Hibernate modes. You can spare the 20 seconds it might take to “wake” your machine when you get back from that meeting.

Use a dedicated server room, rather than a spare office. A server room requires serious power, cable control, ventilation, fire suppression, cooling, and insulation. When you “make do,” you’re just wasting money and risking your expensive equipment. Spend the money to build a hospitable and efficient environment for your servers; you’ll be better off in the long run.

Turn your computers and monitors off at night or any time they’re not going to be used for two hours or more. If using power strips, turn the computer off but leave the power strip on. That way, your system administrators can “wake” the computer to provide updates if necessary. (Forget that old saw about how turning systems on and off too often is

Average Retail Price Of Electricity To Customers By Sector

You’re well aware that your energy bill has been rising. Here’s how much and how quickly, and how that rise compares to other sectors.

	Residential	Commercial	All Sectors
1995	8.4	7.69	6.89
1996	8.36	7.64	6.86
1997	8.43	7.59	6.85
1998	8.26	7.41	6.74
1999	8.16	7.26	6.64
2000	8.24	7.43	6.81
2001	8.58	7.92	7.29
2002	8.44	7.89	7.2
2003	8.72	8.03	7.44
2004	8.95	8.17	7.61
2005	9.45	8.67	8.14
2006	10.4	9.46	8.9

Amounts displayed in cents per kWh (see www.eia.doe.gov/cneaf/electricity/epm/table5_3.html).

Source: DoE/U.S. Energy Information Administration

Switch & Save With Energy Star-Certified Equipment

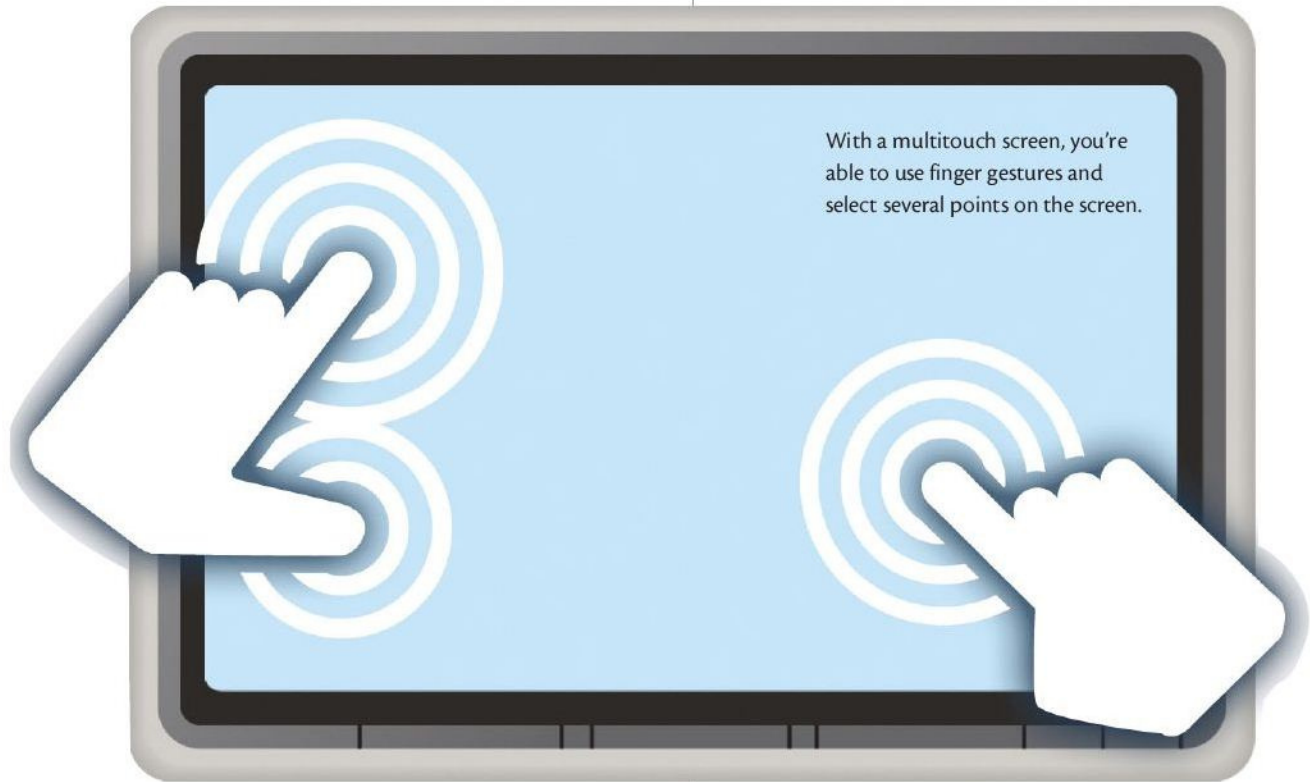
Based on EPA and Lawrence Berkeley National Laboratory estimates, here’s what you’ll save per year by switching to Energy Star-certified equipment. (Based on an average electrical rate of \$0.10/kWh.)

Item	Annual Cost Savings
Computers & Monitors	\$20 to \$37 ea.
Copiers	\$24 ea.
Fax Machines	\$10 ea.
Printers	\$4

This means that an office with, say, 25 computers, two copiers, one fax machine, and two printers could save approximately \$1,000 every year if it did nothing other than use Energy Star-certified equipment.

Small-Screen Innovations

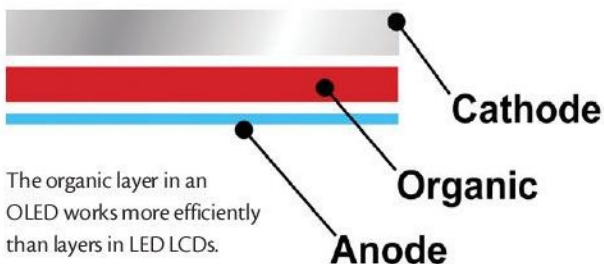
A Touching Experience



Back in 2002, Microsoft released Windows XP Tablet PC edition, which was designed for ultraportable computers with touchscreens that could take handwritten notes and control the cursor with a stylus. At the time, touchscreen technology wasn't quite functional enough to make the jump into mainstream popularity. Fast forward to 2010 and we have a new evolution of touchscreen smartphones and lightweight slate computers with a similar goal in mind: a portable computer that you can completely control from the touchscreen. In this article, we'll examine the newest advancements in touchscreen technology and show you how it enhances your ability to use portable electronics.

The Market Evolution

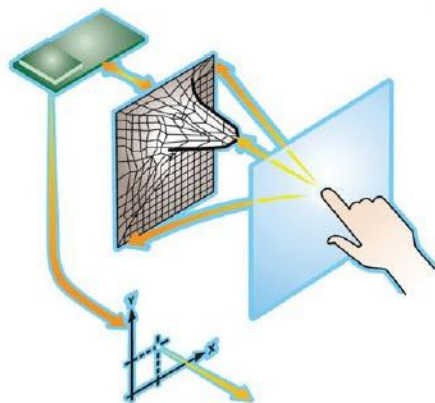
The smartphone market changed forever in June 2007 when Apple released its iPhone. The key to the iPhone's interface was



multitouch screen technology, which means that you can control the operating system using finger gestures and touching multiple points on the screen (such as the two-finger pinch gesture for zooming in). Previously, touchscreen models limited you to the single-touch operation, and, typically, you had to use a stylus for exact control. Moreover, multiple touches on a single-touch screen usually resulted in no action whatsoever. According to Anna Hunt, principal analyst for the consumer electronics group at IMS Research (www.imsresearch.com), "The general evolution of touchscreen technologies, such as multitouch, allowed portable devices to enter mainstream use at a price point that's not too high."

For most people, the multitouch design is more intuitive. For example, with a multitouch screen, you can use the conventional pinch gesture to zoom the screen in or out, which is a more commonsense way to enlarge or shrink Web pages and images than the old method—positioning a cursor and pressing a zoom in or out button. Other logical gestures include double-tap for double-click, tap to start an application, drag to move or highlight, and finger flick to scroll.

Besides intuitive design, most people are able to operate the phone much quicker than they did when using button-based controls. For instance, instead of locating and moving a scroll bar to adjust the view of the screen, you can just flick your



Capacitive touchscreens allow you to touch multiple points; the information about where you touch is fed to the processor.

finger up, down, left, or right. Manufacturers can also significantly reduce or completely remove physical buttons from the device. Portable electronics manufacturers can use the space once reserved for the keys to install bigger, more powerful hardware, or they can simply reduce the size of the device.

What's Behind Multitouch

Multitouch screens feature circuitry with points arranged in a grid, and all the points are designed to read any changes in electrostatic fields. The screen sends any touch data to the device's processor, where the information is translated into a gesture or command. With gestures, the multitouch screen will send a series of coordinates, and the device's software will interpret the movement and how the open application is supposed to respond to the gesture. If your gesture isn't clear enough, the software will merely read it as a series of touches.

As more multitouch screen devices are created, software developers will continue to design new and original ways for you to interact with programs. For example, Cypress Semiconductor (www.cypress.com) recently announced a new line of touchscreen technology to emulate a "mouseover" feature that highlights on-screen items, such as Web site links and email addresses, to improve your ability to select and click available content. Some manufacturers have also begun to incorporate multitouch screens with unlimited finger tracking capability. Imagine selecting two images on-screen and stretching one while you

simultaneously reduce the size of the second. The possibilities for control would only be limited by the application's programming, rather than the technology of your device. Most major computer and smartphone manufacturers now offer devices with multitouch screen technology.

A New Slate

The same multitouch technology that's popular in smartphones is now transitioning to larger screens, such as 9- to 12-inch slate computers and 5- to 7-inch MIDs (mobile Internet devices). "Multitouch technologies are likely to quickly become the standard for tablet devices," Hunt explains. Traditional touchscreen tablets featured a resistive touchscreen that sensed physical pressure. But resistive technology can only sense one touch. Two recently released tablets, the Fusion Garage JooJoo (\$499; www.thejoojoo.com) and Apple's iPad (\$499 and up; www.apple.com) feature a capacitive touchscreen, which provides support for multitouch interfaces.

A capacitive touchscreen senses the electrons in your finger through the screen's glass. The natural conduction of your finger causes a difference in the electrostatic charge, but the technology only works with fingers or styluses that have been specifically designed to conduct static electricity. The layer of glass on the exterior of a capacitive touchscreen also makes the technology less susceptible to damage than a traditional resistive screen, which must be soft to let you apply pressure. The durable capacitive technology also appears much brighter in sunlight, because the film on the resistive technology doesn't reflect sunlight well.

OLED

Display manufacturers are also working on ways to increase the picture quality of screens, and the newest technology is OLED (organic light-emitting diode). Just some of the improvements of OLED over the traditional LCD screen include improved contrast, increased brightness, and quicker response times for smooth video.

OLED also consumes less power than traditional LCD screens, which provides a big boost for

portable devices. A few smartphones, such as HTC's Incredible and the Nexus One, already offer AMOLED (active matrix OLED) screens, which are also found in Sony's X Series Walkman and Microsoft's Zune HD.

How OLED Works

OLED technology displays light similar to LED technology, which radiates light when electrons pass from a negatively charged cathode to a positively charged anode. OLED adds two layers of organic semiconductor compound between the cathode and anode. The two layers receive electrons and create negatively and positively charged layers. When the two layers combine, light is emitted. Because the OLED actually produces light, there's no need to add backlighting, which is used with traditional LCDs to light the pixels. The backlight in an LCD increases the thickness of the display and draws power.

The addition of a backlight to LCDs also prevents the screen from displaying dark black colors. With OLED technology, a black pixel will simply be turned off to deliver a true black color. And because turned-off pixels require no power, OLEDs should require less energy to use. In terms of color quality, you'll see a wider range of color and improved contrast because there's a lighting element in each pixel, rather than a backlit panel that has control over the intensity of brightness and color. In short, it all adds up to a more lifelike picture that requires less power than LCD.

by Nathan Lake



OLED screens are already in use in some small-screen devices, such as the Sony X Series Walkman shown here.

Augmented Reality's Virtual Future

What You Can Expect

Believe it or not, augmented reality has been around since the 1990s, but it took until 2009 for it to become a mainstream phenomenon. On paper, AR can be a somewhat difficult concept to grasp. Truly, the technology is oftentimes easier to understand once you've seen it in action. Luckily, there are countless online resources that demonstrate in pictures and videos how AR really looks. Read on to acquaint yourself with AR and how it's already being used today.

What AR Is

AR is the overlaying of digital images on a real-time view of the world. For example, an early implementation of AR can be seen in almost any sports broadcast. Think of the colored stripe you see often laid over the scrimmage line in a televised football game. It is a digital image superimposed on a view of the real world, in real time. AR is not the same as virtual reality, which aims to create a 3D space or object to take the place of reality. It's quite the opposite, according to Tuong H. Nguyen, principal analyst at Gartner. AR's real goal, says Nguyen, is to add useful information to real-life situations. "AR is a technology that superimposes graphics, audio, and other virtual enhancements over a live view of the real world. It is this 'real world' element that differentiates AR from virtual reality. AR aims to enhance users' interaction with the environment, rather than separating them from it," Nguyen says.

AR can be utilized with many devices such as 3G smartphones, Web cams, kiosks, game consoles, and tablets. In order for AR applications to run on these devices, however, they must contain various hardware requirements, including a camera, digital compass, GPS chip, and accelerated graphics.

Types Of AR

There are two types of AR: marker-based and markerless.

Marker-based AR is sometimes called image-recognition. It uses a marker, which could be a print-out of a logo or a picture, or any object that an AR application can be programmed to identify. When the marker is presented to an AR application using a Web cam or smartphone, the AR application automatically renders digital images, text, or other information over the video feed in real time. For example, an AR application on your computer could be programmed to recognize the layout of a cereal box when it's held up to your Web cam or smartphone, and then display a 3D world on the box that you can interact with by tilting and moving the box.

Many AR applications offer solutions to everyday dilemmas, such as determining which USPS flat-rate box you should use for shipping. The Virtual Box Simulator from USPS can help you choose.



Markerless AR uses GPS and a digital compass to determine the location and direction of a camera inside a device, then overlays digital information pertaining to that location over the real-world view on the device's display. For example, you could point your smartphone toward a restaurant and instantly view details about its menu, business hours, and ratings.

AR In Real Life

According to Nguyen, AR can be used for a variety of situations. "AR can enhance gaming, location-based services, GPS, mapping, navigation, browsing, advertising, education, and facial recognition," he says. AR will continue to evolve as time goes on, but several AR applications are already in use.

Many of the AR applications currently in use rely on a Web cam connected to your computer or a 3G smartphone. For instance, the U.S. Postal Service offers its Virtual Box Simulator as a way for you to determine whether or not one of the USPS's Priority Mail flat-rate shipping boxes is the right size for the item you're sending. The Virtual Box Simulator uses a marker-based AR system and requires you to print out a picture of the USPS eagle icon to use as your marker.

The Simulator works by holding the marker in front of your Web cam, where a virtual box will appear. By turning and

CarFinder, an AR smartphone application by Intridea, can help you locate your car if you forgot where you parked.



tilting the box, you can get a better feel for its actual size. If you set the marker on a tabletop, the box will appear to be sitting on the table, too. You can then place the item you want to send on top of the marker and determine if it will fit inside the virtual box. The Virtual Box Simulator is available free via the Priority Mail Web site (www.prioritymail.com).

There are countless AR applications available for smartphones, too, that help you more easily accomplish a variety of daily goals. For example, imagine that you are attending a business convention. You park your car on the edge of the convention center's lot and attend the event. Afterward, you can't remember where you left your car. You could use a markerless smartphone AR application such as CarFinder to save you in situations like this. When you leave your car, you can use the

CarFinder application to save its GPS location. Later, using your smartphone's internal compass, the application will overlay an arrow on your screen that points in the direction of your car and tells you how far away it is.

In addition to the aforementioned applications, AR could aid in the everyday tasks of various industries. Take mechanical repair, for instance, where a mechanic could wear a display that offers information about each of the parts under a car's hood. Interior designers could use a special screen to view a room, then place décor items from a database into the room to see firsthand how it would look.

There are already dozens of applications that can help you find the nearest Wi-Fi hotspot, tell you how far it is to nearby restaurants, or show you which constellations are visible in the sky overhead. Some of the current and future AR

implementations are arguably more fun than useful, but as far as AR's potential growth is concerned, any advancement is an innovation.

AR Accessibility

Many AR applications are created with the intention of making it easier to navigate in an unfamiliar place, making smartphones the platform of choice. But with the number of components needed to make AR applications possible and effective, smartphones and other devices supporting AR capabilities will more than likely come at a price. "On the downside," says Nguyen, "the handsets tend to be high-end because AR is resource-intensive." Still, like any new technology, as AR becomes more mainstream, it will also become more accessible.

by Kris Glaser Brambila

AR-Compatible Smartphones

There are several smartphones available that integrate a GPS chip and digital compass, the two most important requirements for running AR applications. The chart below highlights some of them.

Manufacturer	Phone Model(s)	Additional Features	Operating System	Web Site
Apple	iPhone 3GS	3.5-inch touchscreen; 3MP camera; 16GB or 32GB flash storage; record video	iPhone OS 3.1.3	www.apple.com
HTC	Droid Incredible	3.7-inch touchscreen; 8MP camera; 8GB flash storage; Friend Stream app	Android 2.1	www.htc.com
	HTC HD2	4.3-inch touchscreen; 5MP camera; 1GB storage	Windows Mobile 6.5	
Motorola	Droid	3.7-inch touchscreen; 5MP camera; 16GB microSD preinstalled; free Google Maps Navigation	Android 2.0	www.motorola.com
	Cliq	3.1-inch touchscreen; 5MP camera; Motoblur-enabled	Android 1.5	
Nokia	N97 Mini	3.2-inch touchscreen; 5MP camera; 8GB storage; full slide-out keyboard	Symbian 9.4	www.nokiausa.com
	E72	2.36-inch screen; 5MP camera; 4GB microSD preinstalled	Symbian 9.3	

Google

Google

Gets Ready To *Speed*

The Company's Next-Gen
Network Looks To Change
The U.S. Broadband Landscape

Known as perhaps the ultimate technology game-changer, Google has now set its sights on broadband Internet access. Few companies have the resources that Google boasts, so when the company announced a plan in February to launch community trials featuring broadband speeds of more than 1Gbps—yes, 1Gbps—the overwhelming response around the country was no surprise.

There's a good reason towns and cities in the United States want a piece of Google's broadband action. Despite the country's reputation as a technology leader, it suffers from woefully inept broadband penetration, at least compared to other modern countries. In fact, a recent Akamai report revealed that the percentage of the United States with broadband rates above 5Mbps is just 25%—enough for the 14th-ranked spot in the world. Meanwhile, more than 48% of Romania, Japan, and South Korea have rates of 5Mbps or above.

Better late than never, the FCC (Federal Communications Commission) released its National Broadband Plan to Congress in March, marking an ambitious effort designed to benefit the economy and society with improved broadband penetration, affordable rates, and speeds of 100Mbps. As part of its own effort to help the country reap the benefits of ultra-high-speed broadband, Google has announced Google Fiber for Communities.

● Open The Floodgates

Even with broadband increasingly reaching homes that previously had access only to dial-up, there remains a network bottleneck when it comes to more demanding content, such as streaming video, explains Dr. Thomas Way, director of Villanova University's Applied Computing Technology Laboratory. Particularly in broadband networks that share bandwidth, such as cable infrastructures, network capacity can be severely limited when multiple users access content. However, Google's plan could help

to alleviate that congestion through amazingly fat pipes.

"The promise of significantly increased bandwidth as part of the Google Fiber projects means that we are likely to see a shift toward all content being delivered via the network, digitally, rather than today's heterogeneous delivery environment that includes over-the-air, cable, and digital," Way says.

Although Google has released few details on its upcoming project, a few certainties have emerged. By the end of this year, Google will select one or more trial communities, with the ultimate goal of reaching between 50,000 and 500,000 people with its next-generation network. The response to Google's announcement was massive, with 1,110 communities and 194,000 individuals submitting requests for Google to conduct a trial in their areas. The service won't be free, but it won't cost an arm and leg to obtain the service, consistent with the FCC's plan to eventually provide affordable broadband access to nearly everyone. Further, the network will feature an open architecture, which in turn will let customers choose their service providers, which could potentially include Comcast, AT&T, and others.

In addition to Internet access, third parties could also offer other data services on Google's network, says Minnie Ingersoll, Google product manager. For example, while Google likely won't offer cable television or telephone service on its network, other providers will have the opportunity to do so. Ingersoll also notes the network will allow for bandwidth-heavy applications such as streaming of high-definition video, remote data storage, distance learning, and others.

"Google's planned network deployment is similar to Verizon's FiOS network. It can obviously support services that Verizon FiOS currently supports. It will also enable Google to deploy thin-client services like consumer cloud computing and highly interactive, on-demand services like YouTube, interactive gaming, telemedicine, etc. These services are currently not available to consumers, since currently non-FiOS networks



The FCC's National Broadband Plan is an ambitious roadmap for boosting broadband access in the United States, but Google is moving ahead on its own with its Google Fiber for Communities project.

do not have the high-bandwidth, low-latency capabilities required for these services," says Sujit Jha, principal at Altman Vilandrie & Company.

This open network concept is far different from what currently exists in the United States, adds Susan Estrada, president of FirstMile.US (www.firstmile.us), an organization that advocates big broadband. Whereas most current providers own the infrastructure and provide the content, Google will separate these components so that Google provides the fiber pipe and other service providers deliver the content that flows over that pipe.

"We have seen numerous successful examples of this concept, particularly in the Netherlands," Estrada says. "And, the Australian National Broadband Plan is exactly the same concept." If Google can create a successful model in one or more test communities in

the U.S., providers and policymakers might be more likely to see how an open fiber plan can benefit them in the long run. Estrada adds, "Really, when you think about it, does it make much sense to have multiple fibers into your home? Don't we really just want one and then a choice of services to use over it?"

Google also plans for the network to serve as a test bed of sorts for next-generation apps, whether developers or users design the apps. In addition, the network will serve as a model for future fiber deployments, as Google plans to share its experiences in the trials, whether good or bad.

● Inside Google's Intentions

The effort in whole has garnered plenty of praise from industry pundits and casual observers alike, but others are concerned about the problems that could emerge from one massive company ultimately controlling communications. On one hand, Google could finally provide a choice other than DSL or cable (and those choices are woefully slim in many communities), but on the other hand, communities using Google Fiber might see that choice disappear if the project doesn't go well.

"Google needs to make enough money to keep these networks running for a long time," says Roopa Shree, senior industry analyst with Frost & Sullivan. "Unless local governments take a proactive role and partner with Google, these networks will fail and be forgotten like the free municipal Wi-Fi networks [Google has established in the

past]. Also, to manage and maintain these networks, Google will need a service provider partner with experience of running fiber networks. How Google plans to address that is yet to be known."

Shree adds that Google's current overall strategy revolves around online advertising revenues, and the Google Fiber project likely won't change that strategy. What the project will do, Shree says, is help Google analyze consumer behavior on Internet use for various purposes and compare that behavior with regions that have only low-speed broadband.



Although Google's Fiber project will grace communities with an ultra-fast network, it will also provide Google with the opportunity to test new apps and strategies in a real-world environment.

A report by industry consultants Telecom Pragmatics warns that Google is composed primarily of programmers who “know relatively little about plowing fiber or deploying it in the last mile.” Further, there is plenty of misunderstanding about Google’s strategy around network investments—the company has only about 200 working in its own network operations and probably doesn’t want to increase that number or enter the public networking business, the report says.

Whether Google has long-range plans for ultra-high-speed broadband, it’s tough to ignore the opportunities the company will enjoy from such deployments. However, although high-speed Internet access could inevitably increase the use of Google’s services and applications, it will also increase its value to users, says Irit Gillath, vice president of product line management at Telco Systems. This value is primed to extend not only to casual Internet users, but also businesses, hospitals, schools, government facilities, and other elements that typically comprise entities.

What’s Next?

Until the end of the year, Google’s focus will be on choosing trial communities for the deployment, which involves reviewing

Google isn’t looking to supplant providers of existing broadband services. Instead, the company’s fiber network will provide the opportunity for any provider to offer Internet service and other network-based services.

community responses, conducting site visits, and meeting with local officials to obtain more information about the communities and their current broadband architectures and needs. FirstMile.US’s Estrada hopes that Google chooses trial communities that meet several prerequisites, including the ability to mitigate installation issues through streamlined permitting/right-of-way/other legal issues; to engage local service providers to use the installed fiber; to get instant widespread community support and adoption for fiber; and to utilize the fiber to catalyze local economic development that wouldn’t be possible otherwise.

“Given the amount of applications they received, Google should be able to develop a

comprehensive strategy that meets each of these four points and shows how small rural towns, as well as larger urban areas, can benefit through open infrastructure development and create a true competitive environment for broadband uses,” she says.

Ingersoll says Google has no plans to build a nationwide network, but some experts think some trial networks could continue running even after Google Fiber has closed up shop in other locations. For example, Shree says if a trial network is

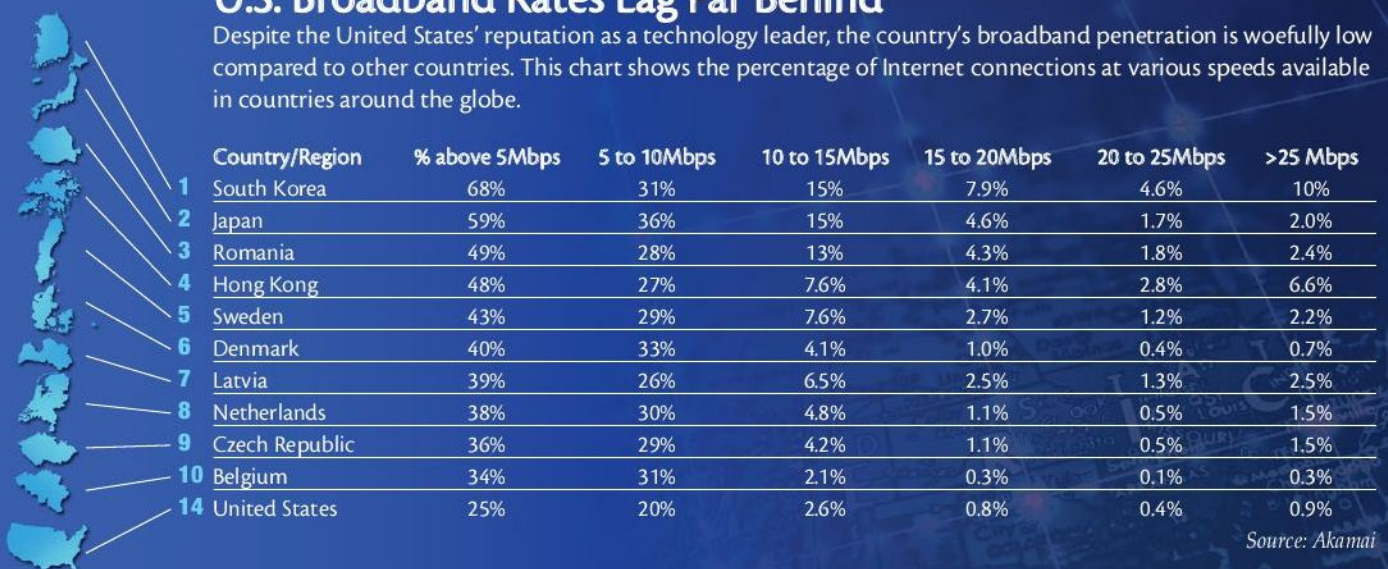
economically viable, Google might keep the network running there, which in turn emphasizes the need for communities to have a plan to keep the networks running. Yet, even if Google chooses to cease the networks in all of the locations following the trials, the long-ranging effects of Google Fiber for Communities should prove positive for both the country and Google.

“The influence that Google has is good for the FTTH [fiber-to-the-home] industry and overall to the access market and consumers,” Gillath says. “In this case, it brought the awareness of the various technologies available in the market to many communities that otherwise would have not taken the initiative of connecting their citizens.”

by Christian Perry

U.S. Broadband Rates Lag Far Behind

Despite the United States’ reputation as a technology leader, the country’s broadband penetration is woefully low compared to other countries. This chart shows the percentage of Internet connections at various speeds available in countries around the globe.



Broadband Basics

Where We Are Headed

Google made a big splash earlier this year when it promised to bring 1Gbps fiber-based Internet connections to one or more test cities. Similarly, the FCC announced in February that its National Broadband Plan has a goal of delivering 100Mbps connections to 100 million U.S. households (no date for when this will happen). For most of us, achieving even a tenth of that speed is unlikely any time soon. Here's a rundown on which stationary connection methods are tops in the United States, and how they may change for the better.

● Global Perspective

The U.S. ranks 22nd in the world, in terms of average broadband speed, at 3.8Mbps per an April 2010 report from Internet service provider Akamai. (South Korea, with an average Internet speed of 11.7Mbps, is first.) However, some areas of the country are far outpacing the U.S. average. Akamai reported that Delaware had the fastest average speed of any state at 7.6Mbps. Delaware also had the highest percentage of users with average connection speeds faster than 5Mbps (72%).

● Comparing Apples To Oranges

One factor likely affecting Delaware's ranking is the deployment by Verizon of its

high-speed, fiber-based network in that state. Fiber networks, where data travels in the form of light over hair-thin fibers at minimum and maximum download speeds of 10Mbps and 50Mbps, respectively, are substantially faster than many current cable or DSL networks. Cable and DSL Internet download speeds are often much slower—with cable frequently topping out at 16Mbps and DSL hitting its high note at 7Mbps.

is achievable in the foreseeable future. DSL providers, such as Qwest, are adopting VDSL (very high bit-rate DSL) technologies in some areas. This protocol supports maximum download speeds of 52Mbps. (Qwest's current consumer offering tops out at 20Mbps.)

Given predictions that 60% of Internet traffic will be video by next year (per networking giant Cisco), these upgrades will be important for the vast majority of U.S.

The U.S. ranks 22nd in the world, in terms of average broadband speed, at 3.8Mbps per an April 2010 report from Internet service provider Akamai.

(Interestingly, cable upload speeds are usually lower than those of DSL.)

However, these statistics are shifting rapidly. Cable and DSL providers have the ability to increase speeds now, and many are already doing so, especially for business customers or in areas where fiber is on the move. In Lafayette, La., for example, where the municipality is engaged in a citywide fiber-Internet project, Cox Cable has ramped up its Internet speeds to a maximum of 22Mbps. Comcast is already rolling its higher-speed network out, and management says 160Mbps

Internet users. Cable and DSL far outpace fiber, and will for the near future. Whether cable or DSL has the largest market share depends on how you measure it (consumer vs. business; revenue vs. subscribers), but there is no doubt that, together, they hold the lion's share of broadband subscriptions. Even by 2014, when fiber's gross revenue will hit \$24.4 billion (per a March 2010 ABI Research press release), it will represent barely 10% of the \$210 billion broadband pie ABI predicts for that year.

by Jennifer Farwell

Connection Comparison

Cable is faster than DSL Internet, but fiber currently blows them both away.

	DSL Internet	Cable Internet	Fiber Internet
Average Download (Min.)	768Kbps	4Mbps	10Mbps
Average Download (Max.)	7.1Mbps	16Mbps	50Mbps
Connection	Phone Line	Coaxial Cable	Fiber Optic Line

How Google Fiber Will Work

Dark Fiber Could Be The Key To Google's Next-Gen Broadband Network

Several years ago, speculation ran rampant when it was revealed that Google had been buying loads of dark fiber in the United States. Analysts predicted the search giant would use this previously unused fiber optic infrastructure primarily for projects ranging from municipal Wi-Fi to cloud computing, but the emergence of its Google Fiber for Communities project has uncovered a potential new plan for the commodity.

Although Google has indeed launched municipal Wi-Fi, cloud-based applications, and a host of other technologies and projects since those dark fiber reports emerged, Google Fiber represents the most likely candidate to take advantage of the company's accumulated dark fiber. By the end of the year, Google will select one or more trial communities in the United States and launch a broadband network that provides inexpensive Internet connections that could eclipse 1Gbps.

Few specifics are available on the project, but similar projects and existing infrastructure provide some early insight into the underpinnings of Google Fiber. The most critical key lies in the dark fiber that's already installed in potential communities and how Google might use it.

Treasure In The Dark

By the close of the 1990s, fiber optic cable had been laid across hundreds of thousands of miles across the U.S., due in part to the dot-com era's rapid expansion of the Internet. But like other ambitious ventures that occurred during the period, fiber expansion gambled on the expectation that dot-coms—and the Internet in general—would continue to witness explosive growth for years to come. Of course, that growth halted in the wake of the dot-com bust in the early 2000s,

leaving huge amounts of unused fiber in the ground.

By 2006, Google was buying plenty of this dark fiber and said at the time its goal was to connect its server farms and to connect with the networks of telecom giants, such as AT&T. Although those activities likely happened to some extent, it's probable that Google had plans even then to deliver FTTH (fiber to the home), at least in certain parts of the country. By purchasing dark fiber when demand was lower, the company could save money, and now it will save time by having the infrastructure in place to launch its fiber trials quickly in chosen Google Fiber communities.

"Most—if not all—of Google's dark fiber is intercity dark fiber," says Sujit Jha, principal at Altman Vilandrie (www.altvil.com). "When deployed, these will help Google move a massive amount of data across the country. Currently it establishes peering relationships with other network providers to transport data, and this peering cost is very high for Google, especially for services such as YouTube. Should Google be able to connect a significant part of the country with FTTH, it will generate data traffic orders of magnitude higher than Google's current data traffic."

Depending on where the trials happen, Google might not even own the fiber (at least initially), because miles upon miles of dark fiber are owned by telecommunication companies or other third parties. Baltimore's Derek Gabbard, CEO of Lookingglass Cyber Solutions (www.lgscout.com), says there is much available fiber in that city upon which Google could capitalize for its fiber project. Gabbard, part of the BMore Fiber effort, which is designed to showcase Baltimore as a good candidate for

LITECAST ABOUT US PRODUCTS & SERVICES NEWS & INFORMATION NETWORK MEET THE CUSTOMER SUPPORT BLOG

advance fiber network

CONNECT TO YOUR FUTURE:

Litecast is a "dark" fiber metropolitan infrastructure provider dedicated to providing fiber connectivity to all segments of Baltimore's business community at an affordable and fixed cost. To achieve this goal, Litecast has designed, constructed, and currently leases a high-capacity, high-bandwidth dark fiber-optic network constructed on full-spectrum fiber - the "Litecast Network". With the strategic placement of 40 actual redundant fiber miles within the City, customers are instantly able to connect to Baltimore's most important points of communications presence. We provide fiber connections for our customers because we understand that when you connect to fiber, you connect to the inherent advantages fiber is able to provide - in short, you connect to the future!

What's New:
 Litecast is now in 25 business and adding more every week.
 Litecast is offering available for lease 10 and 500 mba customer.

Testimonials:
 "Litecast is the preferred internet provider for my customers. Litecast installation time, performance, and price can not be beat. I would not hesitate to recommend Litecast for all of your commercial internet needs."

Google's project will likely take advantage of existing dark fiber that it already owns, although companies such as Baltimore's Litecast are willing to supply some of their own dark fiber to support the project.

Google Fiber, also notes that a local company (Litecast) has pledged support to Google by making available some of its own dark fiber.

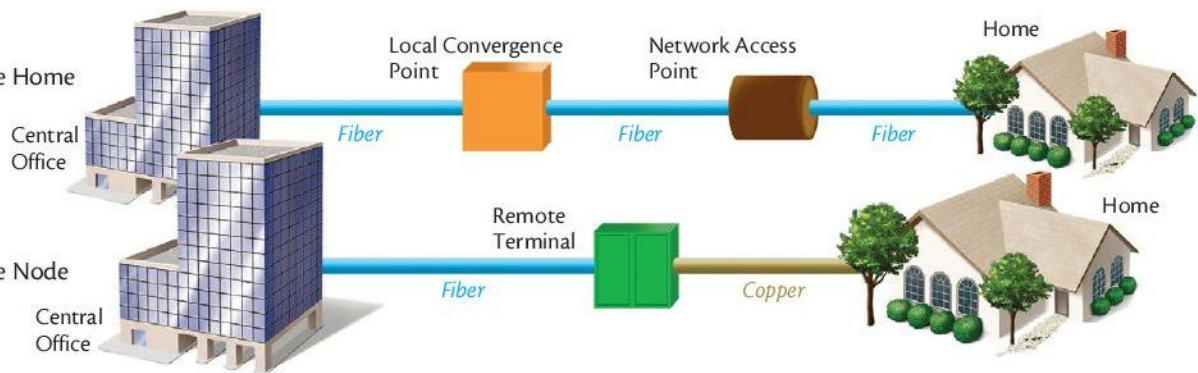
"Google is steadily building out their own backbone Internet, in some cases using this dark fiber," says David Howard, a social media marketing consultant and a booster for Alameda, Calif.'s, application for Google Fiber. "Presumably, the Fiber for Communities deployment would connect directly to a Google backbone, rather than a transit provider, giving Google more control over

FTTH

Fiber To The Home

FTTN

Fiber To The Node



the end-to-end user experience," adds Howard, "particularly for Google content properties such as YouTube."

Tracing The Fiber Path

Google Fiber will be an open-access project that provides customers with a choice of Internet service providers. Because multiple service providers will be involved with the final product, it's also expected that Google will team with local government, local companies, and various experts to get the fiber architecture up and running. Many larger communities already either have fiber infrastructure in place or have plans to implement it in the future, so Google will likely work with the people involved in these projects to get its own fiber access off the ground.

If Google follows through on its promise to deliver 1Gbps (or greater) speeds, the company probably will need to install a true FTTH network. Some fiber deployments use fiber for much of the network, but not all of it. For example, many Verizon FiOS customers still utilize their homes' copper wiring, which is connected to a

Not all fiber deployments are built the same. Whereas a true fiber-to-the-home connection uses all fiber, other varieties use copper to some extent. Google Fiber is expected to be an all-fiber network.

FiOS fiber. AT&T, for its part, uses a mostly FTTN (fiber to the node) architecture for its U-verse service, in which fiber travels to a cabinet that serves a group of subscribers. Primarily for cost-saving reasons, copper is then used to connect the subscribers to the cabinet.

But for Google to achieve those high speeds, it likely will push for a complete fiber installation that runs fiber from a central office all the way into homes, businesses, schools, and hospitals. Such an undertaking could be massive (particularly if Google needs to lay new fiber) and partly explains why existing point-to-point deployments are rare in the United States. However, Google plans to use this network not only as an example for future ultra-high-speed broadband deployments, but also to test its own technologies. To do that, it must ensure that all users in the trial communities have the ability to reach those high access speeds, so it's expected that all subscribers will have the necessary hardware installed at their home, business, or other premises to ensure the all-fiber connection.

Big Money

Google hasn't revealed the project's cost, but it will certainly be substantial.

Verizon's FiOS network will cost roughly \$23 billion by the time it's done, though the network currently serves around 13 million customers—far more than Google's plan to serve up to 500,000 customers.

Australia plans to spend roughly \$40 billion to provide 90% of its population (about 19 million people) with FTTH service. Meanwhile, AT&T has said it plans to invest \$4 billion to upgrade its network (U-verse has around 2 million customers).

Although the aforementioned plans serve far more customers than what Google will serve, the speeds of those services are just a



Experts predict that bandwidth-heavy Google commodities such as YouTube could prompt the search giant to run its fiber project mostly on a Google backbone rather than hopping onto fiber owned by other companies.

fraction of what Google has promised. If the company follows through on this promise, the relative cost of Google Fiber for Communities could easily surpass every major fiber deployment to date.

by Christian Perry



Clamoring For Google

Where Will Google Fiber Call Home?

When Google announced its plans to build and test an ultra-high-speed broadband network, people from all over the nation started collaborating and strategizing in order to convince the Google decision makers to bring the Google Fiber For Communities project to their hometown.

It's not hard to figure out why Google got responses from more than 1,100 communities and 194,000 citizens. The project will deliver 1Gbps speeds to each household within the Google Fiber zone, which is 100 times faster than current broadband network speeds. This will not only help advance current technologies, but it will also help drive new technologies to potentially change the way our nation collaborates through education, health care, and other industries.

"Working in the technology profession, I know faster is better," says Nick Kuzmin of Mindscape, a Web design company in Grand Rapids, Mich. "I also know that when Google takes on any new project they put their best into it," Kuzmin adds. "Having read about Verizon's and AT&T's fiber optic efforts in

other markets, I wanted to make sure Grand Rapids got involved as soon as possible so that we could rally as much support from our community as possible."

Google is looking to roll out the ultra-high-speed service to between 50,000 and 500,000 residents, and the ideal community will offer project concepts from its residents, a high level of involvement, and support from both citizens and government officials. Google must also be able to experiment with a variety of deployment techniques and benefit from approved construction methods and local regulatory issues.

The top nine cities vying for Google Fiber have shown how they can meet these requirements and have offered many other insights as to why Google Fiber should come to their city. Most of the planning and campaigning was a joint effort between city officials, local businesses, and citizen grassroots efforts. Using social networking sites, such as Facebook, Twitter, YouTube, and LinkedIn, as well as custom Web sites, cities were able to build support throughout the community

and attract Google's attention. Some campaigns even had help from local celebrities, such as director Spike Lee, NFL wide receiver Ricky Proehl, and sportscaster Dick Vitale.

Although Google hasn't made its decision yet about which community (or communities) it will choose, all of these cities have worked to show Google that they deserve to bring home Google Fiber.

"I have a vision of what gigabit Internet speeds would bring to my community," says Asheville, N.C., native Hunter Goosmann of ERC Broadband. "I have been working for years to expand not only broadband access but also the adoption of technology, and this would be a huge leap forward. I want my children to have the benefits associated with not only better access but also better educational tools. And there is an immediate opportunity to expand healthcare networks and tele-medicine, and so much more. Without the Google infrastructure, this vision will be a long time coming."

by Tessa Warner Breneman

Asheville, North Carolina

Asheville has been a tourist hot spot for years, but its commitment to the arts, digital media, health care, and education are what Asheville is leveraging to attract Google. As an example of Asheville's dedication to the arts and innovation, it recently hosted a Hatchfest conference to help young creatives share and develop ideas under the guidance of more experienced innovators.

Certain groups, such as Advantage West of western North Carolina, which promotes economic development through filmmaking and entrepreneurship, will be the biggest beneficiaries of Google Fiber. Asheville is also home to the National Climatic Data Center, which has the largest active archive of weather data that could be more easily shared through Google Fiber.

Google is already familiar with the Asheville area. The Google-sponsored Juicy Ideas program is a competition encouraging students to create software applications to benefit their community using publicly available data. The competition is open to schools located within 50 kilometers of a Google data center or corporate office. The data center in nearby Lenoir, N.C., made Asheville students eligible for the competition.



Asheville Mayor Terry Bellamy Talks about the Google Asheville campaign.

Baltimore, Maryland

Baltimore has focused its argument for bringing in Google Fiber on the city's unique assets. The Hubble Space Telescope, for example, could deliver 3D astronomy models to students all over the nation using Google Fiber. Bob Kahn, the father of the Internet, lives in Baltimore and is helping the city to archive and share municipal data for the benefit of



BreakAway Games will be able to easily share serious games such as Pulse!! with Google Fiber.

the community, which could also be enhanced by the presence of Google Fiber. Additionally, gaming companies headquartered in Baltimore, such as BreakAway Games, have also announced plans to expand training programs for health-care providers, first responders, and U.S. soldiers.

The city has announced plans to use the high-speed network to develop tele-surgery techniques at Johns Hopkins, further de-

velop quantum cryptography and other aspects of cybersecurity, and provide a way for the indie music scene to record and collaborate. To improve the community as a whole, Baltimore also plans to connect computers from all over the city to build a supercomputer that is capable of performing large-scale tasks and gathering data. Also, the City of Baltimore already owns a conduit system ideal for fiber optic cables, which could make deployment easier.



Credit: Derek Montgomery/derekmontgomery.com

Duluth Mayor Don Ness wants Google Fiber so badly that he was willing to jump into freezing Lake Superior to prove it. But that's not the only way the Google Twin Ports campaign has fought for Google's attention. The joint effort between Duluth and Superior, Wis., distributed pledge cards to show Google how many citizens would subscribe to the new service. Even Minnesota Governor Tim Pawlenty got involved by issuing an official proclamation to make March 26th Google Twin Ports Day.

A more serious attempt to grab Google's attention centered on a contest for product and business ideas achieved through high-speed Internet access. The top five ideas were awarded a cash prize or resources to help them implement and develop their ideas. There was also a strong effort to motivate citizens to contact Google and voice their support for Duluth through phone calls, financial donations, and participation in social media.

As the movement reached a fever pitch, the Duluth Entertainment Convention Center hosted the setting for the "Googlefest Movie." With live music, face painting, and coloring for kids, citizens were encouraged to come and show support for the Google Fiber initiative there.

Fresno, California

With 10,000 netbooks distributed to school children, Fresno is already showing Google how its community could benefit from ultra-high-speed Internet. Fresno's ethnically diverse population also feeds into plans Fresno has to offer language translations for hospitals in order to provide better basic and emergency care, should they get Google Fiber.

As an example of its commitment to Google, Fresno State University has already migrated to Gmail for its student email accounts and uses other Google applications for productivity. According to Fresno State President Dr. John D. Welty, the university plans to use Google Fiber to promote distance learning classes and programs and to advance water technology to help bring high-quality water to Africa.

The collaboration between the state, federal, and local governments provides an ideal climate for collaboration and research. Fresno touts 25,000 utility poles, plus 280,000 linear feet of conduit owned or controlled by the City of Fresno, and offers a mix of both urban and rural areas for fiber implementation, which would help Google's deployment efforts.



Eric Spikes of Spline Motion Studios sends in the Fresno Google Fiber application, along with Fresno City Council members and other Fresno community members.



Madison, Wisconsin

Credit: Joe Quick

Madison wants Google to know that it has a city full of friendly, creative people who have a long history of civic engagement. But Google should already know that, considering it has an office in downtown Madison. Still, Madison hopes Google will be lured by the city's available conduit, the 40,000 students attending the University of Wisconsin at Madison, and the large demographic of young professionals who have a high adoption rate for new technology. For example, Capital Entrepreneurs, which supports the Mad Fiber campaign, is a group consisting of professionals devoted to developing all sorts of entrepreneurs, including technology start-ups and other types of high-tech innovation.

To raise awareness for the Mad Fiber campaign, Babcock Dairy Plant Manager Bill Klein created the Mad Fiber ice cream flavor, and introduced it alongside Mayor Dave Cieslewicz, Madison School District Superintendent Dan Nerad, and the UW College of Agriculture and Life Sciences Dean Irwin Goldman. For Madison, Google Fiber could increase the innovation in its creative class and allow for telecommuting and telework while aiding educational institutions. Additionally, Madison citizens would like to take advantage of the distance education opportunities Google Fiber could bring.

Grand Rapids, Michigan

Grand Rapids says it needs Google Fiber to help it transition from traditional manufacturing to new technology industries, including health sciences, advanced manufacturing, and alternative energy. It also needs an incentive for graduates from its local universities and colleges to stay and apply their education in the community. With a total of about 72,000 higher-education students in the city, Google Fiber will provide Grand Rapids with the opportunity to add more distance learning and research projects, which can further the education and experience of its residents.

Grand Rapids would also like to assist its Medical Mile, which is home to a variety of healthcare institutions, along with its educational institutions, with help from Google Fiber. Like some other cities in the race for the fiber, Grand Rapids has an existing infrastructure that would make deployment easier.

To grab the attention of Google, Grand Rapids sent out the Google Suit Troop to be part of a flash mob that hoped to earn Google's attention.

Credit: Denise Brander, www.branderphoto.com



Memphis, Tennessee

Memphis wants to capitalize on its diverse assembly of ethnicities, cultures, and industries to fuel additional research and development through Google Fiber. Thanks to its array of higher education institutions and research facilities, Memphis already has a regional fiber-optic network that delivers a high-speed connection to MCAN (Memphis Coalition For Advanced Networking) members. Demonstrating its commitment to innovation and industry, Memphis recently invested \$5 billion to revitalize its downtown and \$1.4 billion to expand its medical centers.

Memphis plans to use Google Fiber to further develop bandwidth-intensive projects that are already in the works. For example, the University of Tennessee is working on a project that will repurpose a technology used to discover defects in semiconductors to help diagnose diabetes-related eye problems via the Internet.



Institutions such as the Methodist University Hospital will benefit from Google Fiber in Memphis.

Credit: Jeffrey Jacobs Photography

Topeka, Kansas

Topeka might be best known for renaming itself Google, Kansas, throughout the month of March, but its Think Big Topeka campaign focuses more on its dedication to innovation and history of change. Topeka, the setting of Brown vs. Board of Education and birthplace of the AT&SF (Atchison, Topeka, and Santa Fe) Railway, wants to give the nation another gift in the form of innovation as well as new applications created with Google Fiber. It touts its citizens as creative, diverse, friendly, hard-working, and honest and hopes to use ultra-fast Internet to research cancer and biodefense solutions.

Topeka has also hosted various events to put its best face forward with Google. The city hosted a St. Patrick's Day parade, inspired a flash mob, and planned an art walk to exhibit local creative talent. It also encouraged its citizens to participate in a makeover of the city in order to clean it up before Google representatives came through.



Washburn University students hold up the Google Topeka campaign sign.

Credit: Jolene Grabill

Students at the Ringling College of Art and Design, located in Sarasota, Fla., will be able to use Google Fiber to collaborate on and share large digital media projects.



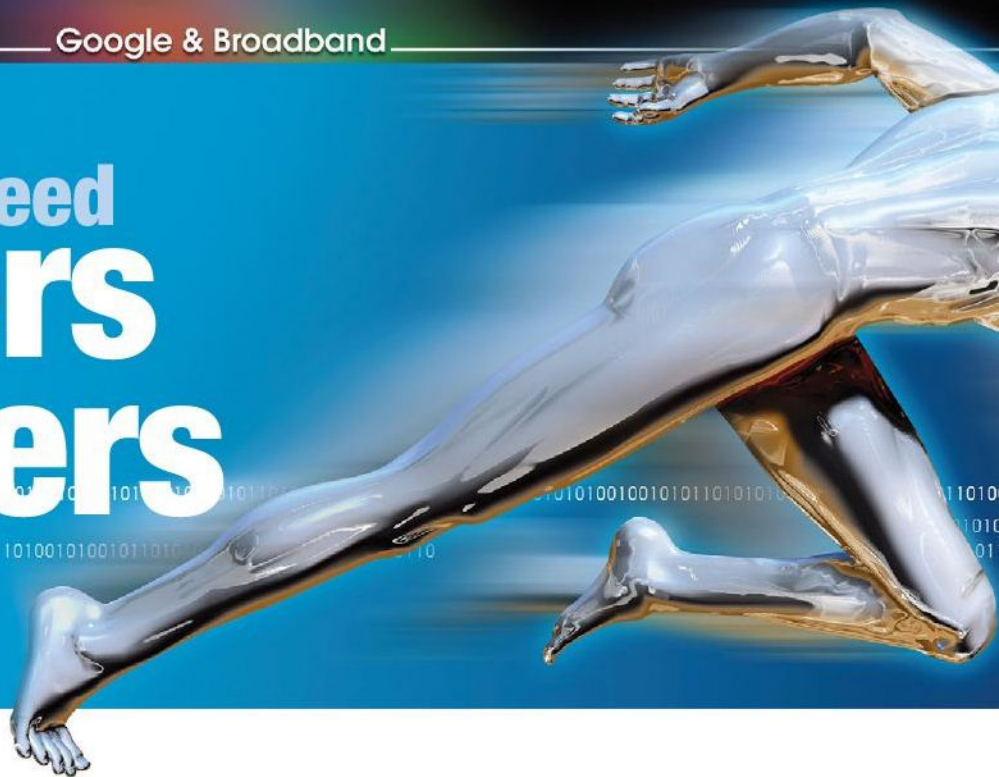
Sarasota, Florida

Sarasota already knows the ins and outs of being a test community for a broadband network. In 1996, Comcast chose Sarasota as a test site, thanks in part to Sarasota's infrastructure, terrain, and climate. But because the Google Fiber campaign is an entirely new competition, Sarasota is doing what it can to grab Google's attention, including renaming itself "Google Island." And to counter Duluth's mayor jumping in a freezing lake, Sarasota mayor Richard Clapp took a dive into a shark tank.

Sarasota's Ringling College of Art and Design will be one of the biggest beneficiaries of Google Fiber, should it come to Sarasota. Students will be able to produce and collaborate on projects with greater ease, and it could entice them to stay in Sarasota rather than leave for bigger cities. Sarasota's technology companies and research institutions, such as the Mote Marine Laboratory, will also benefit from Google Fiber.

High-Speed Winners & Losers

The Politics Of Fiber



When the most powerful company to emerge from the digital revolution decides to enter a new market, there are just as many people and companies who shudder at the prospect as cheer. When the mighty search company Google announced plans to build its own experimental fiber infrastructure in select U.S. communities, everyone naturally wondered who might benefit from such a move and whose businesses might be threatened.

Will this be a boon to any hardware manufacturers and connected device manufacturers who thrive on fast connections? Not necessarily. Are all ISPs about to get gobbled by Google? Well, not really. When you scratch the surface of this proposal, and what few details we actually have, it turns out that the answers are not as clear-cut.

Upsides & Downsides

Clearly the thousands of communities clamoring to be one of Google's chosen labs for 1Gbps speed think they will benefit from the project, but in what ways? Karl Bode, editor of Broadband Reports, says that in the short run, everyone may like the idea of having super speeds to the home, but there isn't much to be done with it until newer applications are developed to exploit the pipes. The biggest immediate benefit will be to institutions. "A lot of communities built fiber networks already where their first push was to make it a consumer service, but now they have become municipal networks," he says.

Connecting schools and hospitals, police and emergency communications in a more seamless and cheap way would be the first effect.

When it comes to hardware, and FTTH (fiber to the home), there is a class of hardware manufacturers that stand to benefit from a major infrastructure build-out. The possible need for more "core routers," which manage IP packets at the Internet backbone, would be good news for major incumbents such as Cisco Systems and Juniper Networks. But there is also a need for FTTH "residential gateways," which distribute the incoming fiber to consumers in the home for IPTV, VoIP, home networks, and other uses. Companies such as Actiontec and Westell currently supply Verizon FiOS with its ability to deliver "triple-play" (voice, TV, Internet) from fiber to the home.

Curiously, however, there are companies that may stand to lose from super-high-speed connections because the functionality of their products could be virtualized in the Internet-based "cloud." In enterprise computing journal KMWorld.com, IT consultant Stephen Arnold writes of the startup Meraki, which replaces hardware-based enterprise WLAN controllers and administrative devices from the likes of Cisco, Juniper, and Alcatel-Lucent with a cloud-based network management. "That reduces costs by shifting the administration of different geographically distributed networks to the cloud," he writes. Perhaps not coincidentally, Google is an investor in Meraki. Ultimately, says Arnold, "telecommunications companies, network equipment

vendors, and enterprise software vendors like Microsoft and Oracle and their partners will have to respond."

Virtual Benefits

The ability for a super-speed network to virtualize current hardware processes can have far-reaching consequences. Gaming is one major industry that could be impacted. The company OnLive is already rolling out a service that bypasses game consoles and streams high-res games directly to your TV from the cloud. The data that now resides on a game disk and the data and graphics processing that now happens in \$200 consoles is moved to the cloud. These are the sorts of bandwidth-soaking functions that are difficult to pull off even in 20Mbps connections. With 1Gbps to the home, however, it could turn out that today's generation of game consoles is the last.

In fact, as Google itself says, ultra-high-speed connections are really all about the applications they make practical, and so the big winners are the software developers who can imagine those "killer apps." Clearly, adoption of IP-based TV, VoIP, and similar services could be accelerated when there is that much bandwidth to be tossed about. But Mike Day, vice president and CTO for network equipment supplier ADC, explained in an interview with *USA Today* that he expects Google will be testing "very high-speed, very intensive types of applications that require high levels of visual processing" such as 3D movies and 3D games going straight to an HDTV.



Many analysts believe that as the Federal Communications Commission contemplates "Net neutrality" legislation, Google Fiber will try to make the case that an open and shared infrastructure increases competitive pressure to prevent ISPs from throttling down or favoring any provider's content.



A super-high-speed fiber network could accommodate more complex hardware services including network management in the cloud. One possible beneficiary, Meraki, not coincidentally, counts Google as one of its investors.



Developers of hi-res medical imaging apps that can help hospitals perform diagnoses or even operations remotely stand to win. In fact, any software developer who might be able to dream beyond the limitations of current speeds has a shot at getting Google's attention.

Mixed Bag For Service Providers

In addition to some kinds of hardware and services that might become obsolete when they can be relocated in the cloud, the incumbent ISPs, including Comcast, AT&T, and Verizon, would appear to have the most to lose if Google moves in. Even before a single connection is built, Google's plan has called attention to communities' dissatisfaction with current broadband solutions as either too costly, too limited, and/or too poorly distributed. By having thousands of towns going so far as to change their names to get into the test program, the big PR losers so far are the major broadband companies that these towns seem to be declaring inadequate.

But here again, the effect is more subtle, because the search company insists it is not looking to make a business of providing Internet service to homes. In addition to testing high-speed apps, Google's strategy is to prove out a new model of building the fiber infrastructure as a wholesale business that ISPs can share. It is inviting ISPs, including AT&T and Comcast, to share these connections and build and sell services on them.

Today, every provider owns its own hardware and connections to the home and claims

that the cost of its build-outs are reflected in current broadband prices. "About 85% of communities now have a choice of only two providers," says Bode, so with such limited competition it is unclear whether current pricing is artificially high. With Google's build-out we may get a better sense of how much a super-high-speed infrastructure really costs. "Now we will see what real competition looks like," he says.

Because the major providers may feel they have the most to lose by partnering with Google, it is likely that the big ISP winners will be regional and smaller providers who will have a platform they can lease in order to offer cheaper or more robust services. Just as the break-up of the telephone company monopolies produced scores of local competitors all leasing the same existing telecom infrastructure, a wholesale model for broadband could see an explosion of new independent ISPs.

Open Access Endgame

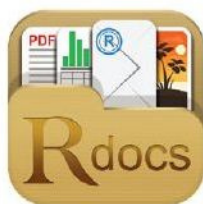
Ultimately, Google Fiber may be the best offensive move to defend "Net neutrality." Major ISPs are lobbying for the power to charge companies such as

Google because they are the source of a disproportionate share of traffic. A wholesale model using super-speed connections would make it harder for any one company leasing those connections to throttle back certain services or favor others. There will always be a competitor on the network who will provide true open access.

It's still unclear how far Google wants to go with its fiber plan and who will win in the end. There is one inarguable winner in all of this, however, says Bode. "Google's PR department. They put their plan out into the public eye [saying it was] for the public's good, and they got countless stories out of it." by Steve Smith

Cities such as Rancho Cucamonga are changing their public profile, while others such as Grand Rapids, Mich., are forming steering committees all in an effort to attract Google's fiber investment to their locales.





ReaddleDocs

Business-Class Document Management For The iPhone

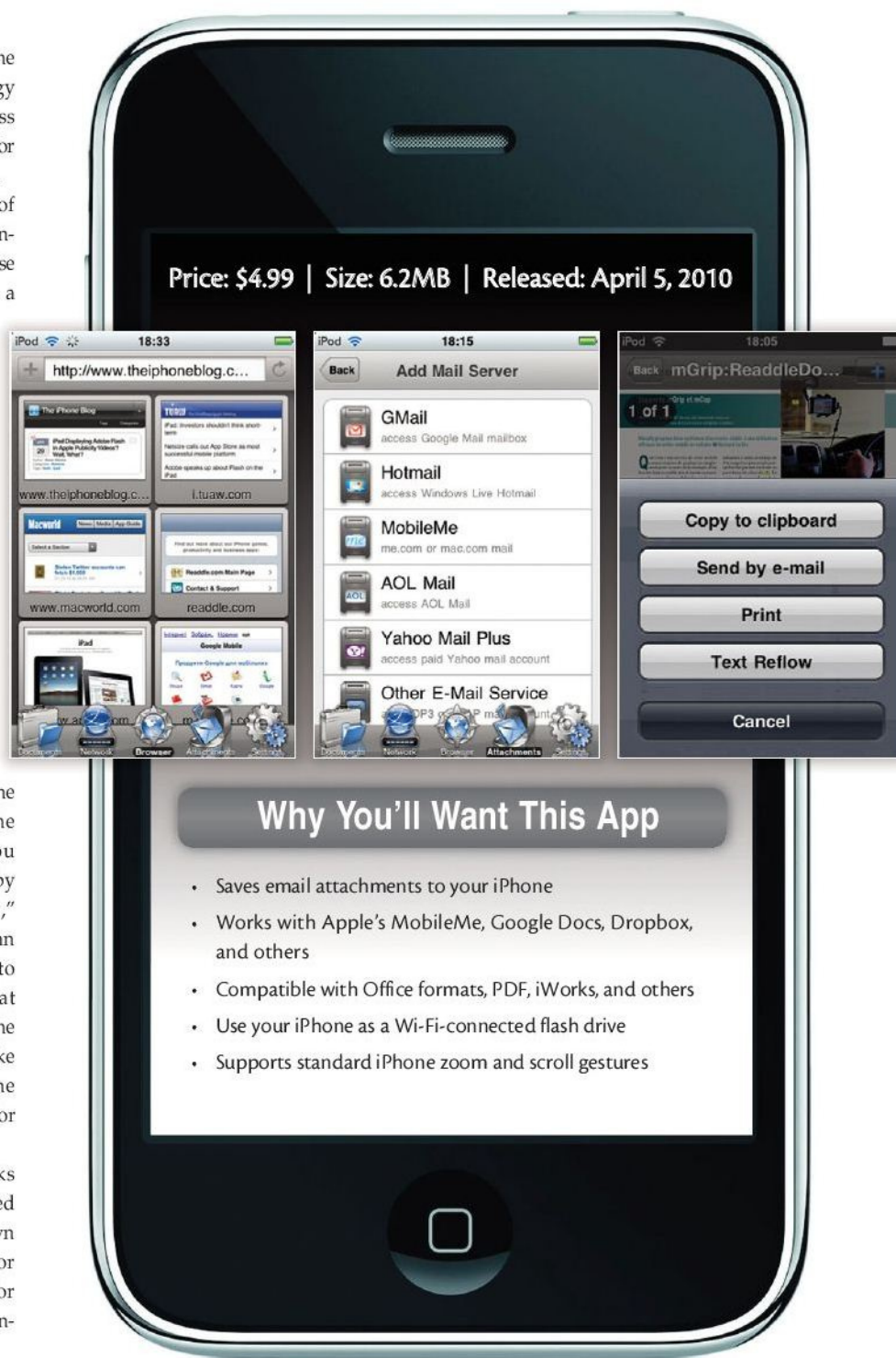
THE IPHONE IS WITHOUT A DOUBT one of the most useful pieces of portable technology out there, but it's not perfect. Business users especially have been clamoring for more robust document-related features.

There is hope. If you're in need of some serious portable document management, take a look at the latest release (V2.1.0) of Readdle's ReaddleDocs, a full-featured document management system for the iPhone and iPod touch.

ReaddleDocs will read most Microsoft Office documents (including the newer Office 2007 formats), it will read and even reflow PDF documents, and it will also display a variety of common image formats.

But where ReaddleDocs really shines is in its ability to provide functionality lacking in the iPhone. Readdle co-founder Alex Tyagulsky notes that a major purpose of the application is to copy files from your computer to the iPhone and view them on the go. "Using the iPhone's built-in functionality, you can read only documents received by email or opened in the Safari browser," he says. With ReaddleDocs, you can browse the Web, save documents to your iPhone, and read and reformat a variety of documents, all within the same interface. (Yes, that's almost like multitasking, *another* missing iPhone feature that Apple is now promising for sometime this summer.)

In addition, ReaddleDocs works seamlessly with existing cloud-based storage. The app also provides its own online storage; the service is free for up to 512MB of data, \$5 per month for up to 2GB, or \$10 per month for unlimited storage.





scanR Business

Scan, Print & Fax From Anywhere

WHEN IT COMES TO KEEPING UP with your workload, you can do just about anything on the go these days, a good thing when you're constantly traveling. scanR's Business Center for the iPhone 3GS gives you the tools you need to scan, print, and fax documents to your colleagues anytime, anywhere.

With Business Center, you can use your iPhone's camera to scan documents such as research notes, textbooks, or forms, as well as whiteboards, and then upload them to scanR's servers where they transform into clean, easy-to-read Adobe PDF documents. You can also create PDFs from existing files in your iPhone gallery. After converting your scan, scanR automatically stores all of your documents in your online account, so you can access them anywhere using your iPhone or computer. With a database of personal files at your fingertips, you'll never have to worry about bringing along the correct documents on paper or a USB flash drive.

Viewing your PDF documents is easy with scanR's streaming file viewer, which lets you view even large documents without concern for slow response or freezing.

To quickly find a specific document, Business Center lets you add a title to each of your documents before saving and converting it to a PDF. You can search for a particular file by title, date, or even text within the document.

When you need to share information with a colleague or client, you can email a document or send it as a fax from within the application. If you're traveling and need to print a file, you can print directly to a nearby fax machine.

Price: \$24.99 | Size: 1MB | Released: March 10, 2010



Why You'll Want This App

- You can scan almost any text and convert it to a PDF
- Share your notes with anyone via email or fax
- Print your PDF files to a fax machine
- Access all of your files in your online database
- Search your PDF files for specific information

iPhone Apps



iSSH-SSH/VNC Console
\$7.99 • 7.2MB

If you're seeking an efficient, secure way to use your iPhone to remotely manage your Unix/Linux/Mac OS computers, the newest version (Rel. April 8, 2010) of Zinger-Soft's iSSH console tool could be exactly what you're looking for.



Smart Plans With Timer
\$4.99 • 0.7MB

Left Coast Logic's Smart Plans With Timer (Rel. Feb. 16, 2010) is five integrated apps in one: a Project Planner, a Task List, a Plans Manager, a Time Logger, and a Contacts Manager. Features visually appealing, exportable reports.



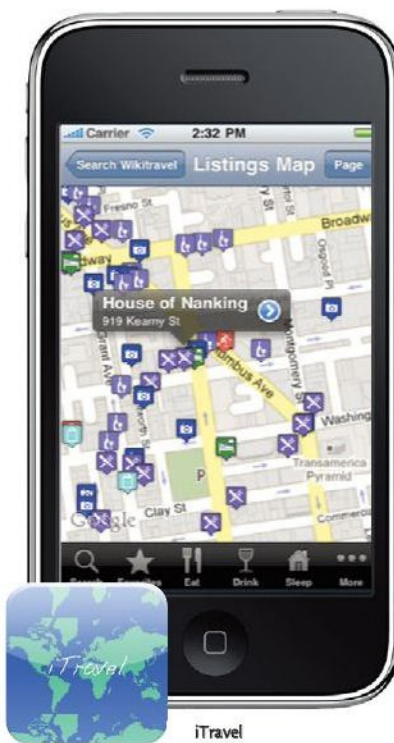
FlightTrack
\$4.99 • 2MB

Ben Kazez's FlightTrack (Rel. April 1, 2010) offers live flight tracking of domestic and international flights, which you can view on zoomable maps, even when offline. Updates and cancellations are also available.



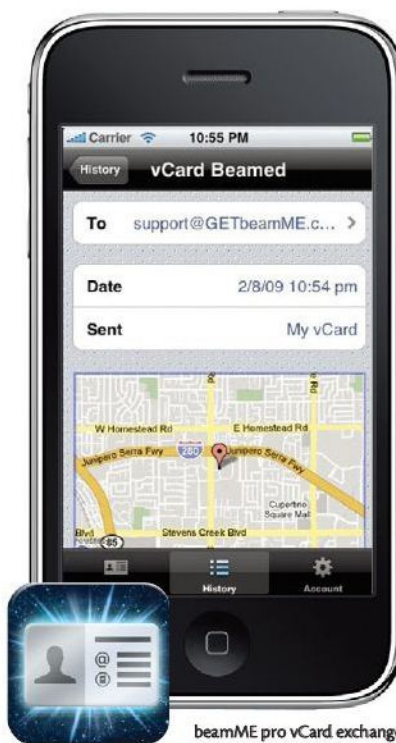
Package Tracker
\$0.99 • 0.8MB

Package Tracker (Rel. Dec. 8, 2009), from Ethan Productions, tracks packages from multiple shippers; notes a package's scan history; and includes current status, locations, and estimated delivery dates. Tracks DHL, FedEx, UPS, and USPS.



iTravel
\$2.99 • 0.7MB

Rezendi's iTravel (Rel. April 7, 2010) is a handy mobile gateway to Wikitravel, with your travel info available offline after download. Plot your meetings and other points of interest on a map during your travels.



beamME pro vCard exchange
Free • 2.1MB

With rmbME's beamME pro vCard exchange (Rel. Dec. 21, 2009), you can easily add new contacts to your address book by beaming your business card to any phone or computer. Includes contact mapping and photo contact identification.



Call Control Trial

Block Spam Callers

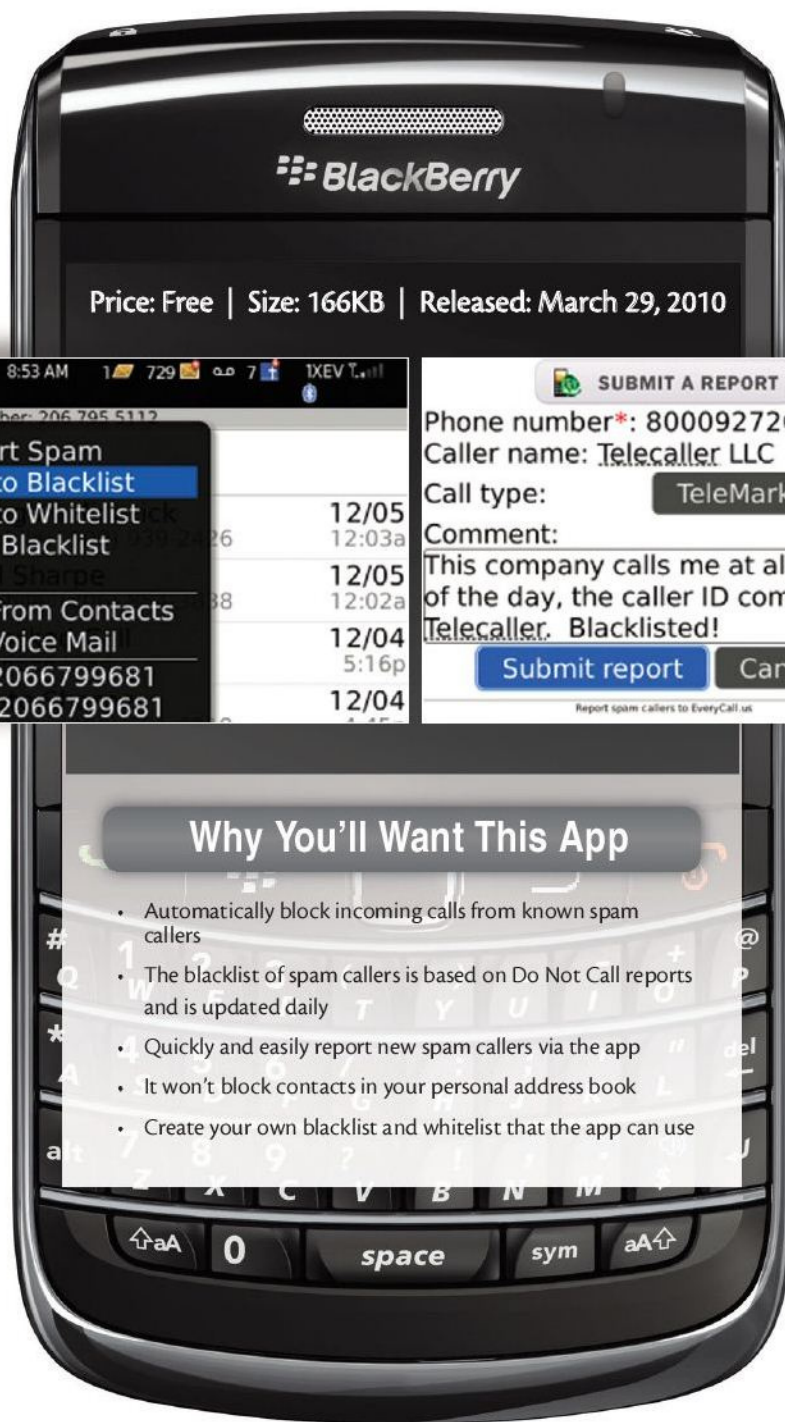
WHY WASTE ANY TIME with a spam caller? If you routinely hang up on unwanted phone calls from telemarketers and other spam callers, Kedlin Company's Call Control Trial can help do the job for you.

Call Control Trial is the free trial version of the Call Control Pro app, which costs \$7.99 in the BlackBerry App World. Both versions come with a built-in directory of "thousands" of phone numbers from which spam calls originate, including numbers belonging to telemarketers and bill collection agencies. With Call Control installed, your BlackBerry will simply hang up on callers whose numbers match those in the directory.

The spam phone numbers come from the EveryCall.us Community Blacklist. For the duration of the 14-day trial period, Call Control Trial will keep the spam directory stored on your BlackBerry in sync with EveryCall.us, so that whenever a new spam number is added to the Community Blacklist, it will also be added to your phone's directory and blocked automatically.

Phone numbers are included in the Community Blacklist based on user complaints and Do Not Call reports. If you receive a spam call from a number not stored in the directory, the app makes it easy to report that number for addition to the blacklist.

Call Control Trial and Call Control Pro are currently highly rated by BlackBerry App World users. If you try the trial version and like it, you can easily upgrade to the Pro version for the price of the app; there is no additional subscription fee.





SugarSync

Sync Files In Real Time

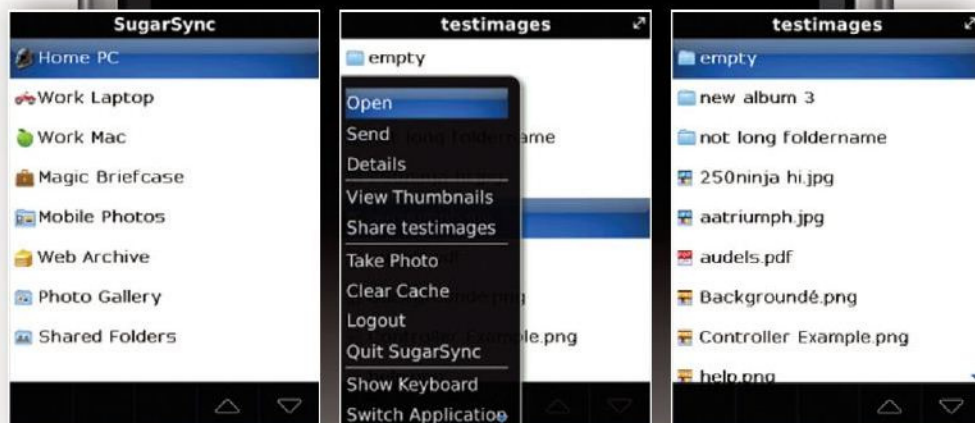
IF YOU USE SUGARSYNC for backing up, accessing, and sharing files, or if you would like to try it, the SugarSync mobile app for BlackBerry is worth using, as well.

SugarSync has been well received by reviewers and users alike since it began offering its online service in March 2008. The BlackBerry app extends the company's promise to provide access to files stored online from any type of device, whether that be a desktop computer (PC or Mac) or a mobile device.

After you have signed up for the service, you can choose which files on which devices you want to keep online, and from there you can perform regular backups, back up files on the fly, synchronize files stored online to reflect changes you've made locally, share files with other users, and access your stored files from anywhere you have a device with an Internet connection. If you're curious about the service but not sure it will suit your needs, you can take advantage of the free trial signup.

SugarSync is available in individual plans and for businesses. For business users, there are additional administrative controls available and the service is customizable based on company needs. The free 30-day trial for business includes 100GB of storage for three users.

The SugarSync BlackBerry app supports BlackBerry OS 4.2 and later because the most recent OS versions include a document editor that works with SugarSync. With the app, you can edit documents on your BlackBerry and sync to apply those changes to the version of the document stored online.



Why You'll Want This App

- Enjoy remote access to all of your stored files via your BlackBerry
- Designate files and folders to share with others
- Edit documents and sync to apply changes
- Browse stored photos and take new ones to add to your online storage account
- Use the required desktop software to maintain sync and sharing for the account

BlackBerry Apps



Forward, Reply And Edit
Free • 69KB

If you receive email messages that require changes or annotations before replying or forwarding, try the popular Forward, Reply and Edit (Rel. Feb. 6, 2010) from Adey Salamin. The app includes a simple editor for making such edits.



RingScheduler
\$2.99 • 518KB

Constantly changing your BlackBerry's ringer settings can get annoying, and missing important calls because you turned the ringer off can be costly. CellAvant's RingScheduler (Rel. March 29, 2010) coordinates ring settings with your schedule.



Quick Search With Google
Free • 86KB

This low-profile app gives you direct access to Google for performing searches. Research In Motion's Quick Search With Google (Rel. Nov. 11, 2009) saves you the trouble of opening the browser and calling up the Google mobile Web page.



got-2Pro Task and Schedule Management
\$8.99 • 185KB

Would you rather see your tasks and calendar engagements in a task list rather than in separate task and calendar applications? This app from gWhiz (Rel. July 2, 2009) does that for you.



miMileage
\$3.99 • 109KB

Sometimes the simplest apps are the best. The miMileage app from loopSpin (Rel. Dec. 20, 2009) lets you enter beginning and ending mileage figures from your odometer so you can track trip mileage and export to an Excel-friendly CSV file.



Copy2Contact
\$9.99 • 392KB

Who has time to enter contact information from every email and search result into a contact list? Anagram Technologies' Copy2Contact (Rel. Oct. 28, 2009) lets you capture information from various sources and easily add it to your contacts.

New & Updated Mobile Software

Get More Done With
Your Mobile Device



Looking to improve the functionality of your mobile phone? We've compiled the most recently released applications and program updates for smartphones to help business travelers maximize the potential of their mobile devices.

New Titles For Android

Skyfire (free; www.skyfire.com) is a Web browser that lets you view Flash video on your mobile phone, and Skyfire Labs recently released version 2.0 for Android. The update adds the SkyBar toolbar that lets you browse videos, find the most popular results for searches, and forward a page to your social

networks. The SkyBar also improves the quality of video playback and extends your phone's battery life, because 70% (on average) of the video compression is performed by Skyfire's servers.

There are a variety of Twitter apps available, but in **Twitter For Android** (free; www.twitter.com), Twitter worked with the Google

Android team to integrate Twitter features with your Android phone. For example, the app lets you access the Twitter timeline from your home screen widget; view a Tweet location on a Google Map; or see your friend's latest post from your phonebook, Google Talk list, or any application with Android's QuickContact bar.

Sports fans will want to download **Sports-Tap** (free; sportstap.mobi) from Mobile1Sports, because it delivers the latest news via RSS feeds for all the popular sports, including soccer and golf. For game information, Sports-Tap displays box scores, as well as team and player statistics for the season. There's also a LocalTap feature that displays all the key updates and information about the local sports teams in your area.

WaveSecure (\$19.90 for a one-year subscription; www.wavesecure.com), from tenCube, is a security service application that automatically locks your phone and lets you track the location of your phone when it detects a SIM card change. If you are unable to recover the phone, WaveSecure can remotely wipe and delete all your private data, such as contacts, messages, photos, and videos. You can also erase files stored on a removable memory card. Another bonus is that you can back up data on your phone to WaveSecure's secure Web site, where you can access the data any time with your Web browser.

If you enjoy using Google Buzz, consider the **Google Buzz** widget (free; www.google.com), which lets you write posts and send photos directly from the Android home screen. You can download the widget by searching for Google Buzz in the Android Market. Google Buzz lets you share Web links, photos, videos, and other content with your Gmail contacts. The phone's GPS allows Google Buzz to automatically locate places around you, and Buzz lets you select a nearby option and attach it as a location tag in your posts.

New Titles For BlackBerry

Howcast.com is a Web site that specializes in creating videos that are how-to guides, and with **Howcast For BlackBerry** (free; www.howcast.com), you can browse videos by category or most recent, or search the entire library for the how-to instructions you're looking for. Howcast automatically



Skyfire 2.0 for Android is a Web browser that improves your phone's ability to play back flash-based video.

skyfire

new version of ZumoDrive for webOS gives you the ability to upload files from your webOS phone; previously, you were only able to download files. ZumoDrive also offers tools for streaming music and viewing images stored online.

New Titles For Multiple Platforms

Google's **YouTube For Mobile** (free; www.google.com) lets you browse through the millions of videos on YouTube, upload videos, and search for specific videos. Google boasts that you can record and upload DVD-quality video straight from your phone. YouTube For Mobile is available for Android (preinstalled), BlackBerry, iPhone (preinstalled), Nokia S60, and Windows Mobile.

detects your download speed and lowers the quality for slower connections. The app also provides a text guide of the video, which is ideal for checking that you have all the necessary items for your project. You can save your favorite videos or email links to friends.

Cisco Webex users can now download **Cisco Webex For BlackBerry** (free; www.webex.com) to join online meetings and conference calls from their BlackBerry phones. You can start or join meetings, view presentations and apps, and see who's in attendance and make another the presenter. Note that you can't schedule a meeting, invite attendees, or present from your BlackBerry with this release. All meeting data is encrypted and hosted on Cisco Webex's secure network.

Multiplied Media released its **Poynt** (free; poynt.com) local search application for BlackBerry. When you enter search terms, Poynt returns results with photos and address information. There's also a Movie Module that displays showtimes for movies at nearby theaters, and the app can also play trailers, load reviews, and let you purchase tickets online. Theater information includes seating layout, wheelchair accessibility, and number of screens.

With MobiQuarks' **MobiAccounts** (\$8.99; mobiquark.com), you can use one app on your BlackBerry to keep tabs on all your debts. MobiAccounts can track all the money you spend and receive, including from credit cards and scheduled bills. The Notification Center displays your upcoming dues and reminders. You can also transfer money between accounts, schedule payments, and set up multiple automatic payments.

New Title For webOS

If you're looking for a way to watch television on your webOS Palm, SPB Software's **SPB TV** (free; www.spbsoftwarehouse.com) provides more than 100 subscription-free channels from all over the world. SPB TV



Join Webex conferences from your BlackBerry with Cisco Webex For BlackBerry.



With ZumoDrive for webOS, you can now download and upload files from your phone to the online storage service.

features a quick channel preview with picture-in-picture, an integrated TV guide, and video on-demand section. SPB TV is compatible with Palm Pre and Palm Pre Plus with firmware version 1.4 and above, and SPB reports that Palm's Pixi and Pixi Plus are expected to work with firmware 1.4.1.

Zecter's **ZumoDrive For webOS** (pricing varies by plan) is a service that provides online storage, which you can access from a Windows PC, Mac, or mobile phone. The

Google also updated its **Google Image Search For Mobile** (freely accessible via the mobile Web on phones running Android 2.1 or iPhone OS 3.0 or later) and **Google Maps** (free). Google Image Search For Mobile now produces square thumbnails to maximize the number of images you can see on-screen. Google added a viewing image page that lets your phone display images at the full screen size. Google Maps can now provide bicycling directions in addition to its walking, automotive, and public transportation navigation. Google partnered with Rails-to-Trails to add bike trails for more than 150 cities. Watch for more cities and trails soon.

by Nathan Lake

New For Your Mobile Phone

The Latest Updates & Services



To keep your smartphone in peak mental condition, you need to stay abreast of the pertinent software and service updates. But don't worry; we're here to make sure you enjoy your mobile experience to the fullest, with snippets about the latest mobile phone releases and upgrades, tips on what's in the pipeline for your device and from your provider, and a broad sampling of news and previews from all corners of the cellular scene.

A Sneak Peek At BlackBerry 6.0

At WES (Wireless Enterprise Symposium) 2010, Research In Motion showed off a brief demo of the firm's latest update to the BlackBerry OS, version 6.0. In the clip, the new mobile phone software looks to be keeping things

familiar, focusing on business-related communication, but also appears to feature new social networking capabilities and a more well-rounded multimedia experience.

Other clues RIM let slip at the unveiling include improved support for touchscreen

functionality, such as new gestures, multi-touch, and kinetic scrolling; a redesigned user interface and retooled Home screen that let you perform searches and view notifications all without ever having to dig into the menu; new native apps including inbox, contacts, and media; and the WebKit-based browser, which should improve the Internet exploring experience with faster page loading and tabbed browsing.

RIM has also been dropping hints about the BlackBerry 9670, which will be running the latest version of the BlackBerry OS when it launches.

New AT&T SIM Cards

Our cell phones and memory cards are getting smaller, so it stands to reason that the SIM (subscriber identity module) cards would, too. AT&T's latest SIM cards feature a Mini-SIM form factor that works with most SIM-based cell phones, including the iPhone, but has an additional perforation, which lets you pop out the smaller version, called a MicroSIM,



The new double-perforated SIM card from AT&T works in devices that accept MiniSIMs and MicroSIMs.

for use in the Apple iPad Wi-Fi + 3G and supposedly also in the 4G iPhone. The two SIMs will work the same in either device type.

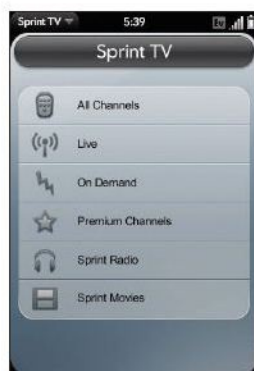
Flash Coming To Android

In a recent interview, Android guru Andy Rubin, vice president of engineering for Google, mentioned a little something about support for Adobe's Flash appearing in the next update to hit Android smartphones (Android 2.2), codenamed Froyo.

A few days later, Adobe CTO Kevin Lynch alluded to Flash appearing on Android while responding to Steve Jobs over Apple's reluctance to support the cross-platform animation and multimedia technology in its mobile devices, such as the iPhone and iPad. Lynch claims that Adobe will have Flash 10.1 up and running on the Android platform in June, so if you have a Droid, Droid Incredible, or Nexus One, you may be enjoying Flash content as you read this.

Sprint TV Adds Phones, Coverage & Channels

Sprint is giving its mobile customers even better access to live and on-demand television from their handsets. Sprint TV is now available on 24 current devices and still available on more than 40 discontinued models and works anywhere within Sprint's 3G Mobile Broadband Network. Sprint also announced that its



Sprint TV expands its offerings and supported devices.

Everything Data and Simply Everything plan users now have access to 21 channels, including ABC, CBS, NBC, and ESPN, as well as news, weather, sports, and children's programming. Popular On Demand shows include "30 Rock," "FlashForward," and "Survivor." Sprint also just released its online channel guide, sprintchannels.mobitv.com, which lets users quickly see what's on and what they can get with their plans.

Verizon Offers Tour Users PTT For Life

Attention Verizon BlackBerry Tour 9630 owners! Act fast if you want to get in on free Push To Talk for the life of your contract. Verizon recently announced that Tour users who download the PTT (push-to-talk) software from the carrier's Web site can start enjoying the service immediately (you may need to call your service provider to initiate the service).

Prior to this promotion, BlackBerry users had to pay \$5 monthly to access the service, which lets you use your phone like a walkie-talkie. The promotion ends June 30, so don't delay. Visit tinyurl.com/26a24f9 to get more details.

BlackBerry Mobile Voice System 5

RIM released version 5 of its BlackBerry MVS (Mobile Voice System), which features voice over Wi-Fi calling. The software lets users take calls from their BlackBerry devices using their desk phone numbers and extensions. The previous version supported calls on the cellular network, but with BlackBerry MVS 5, users can also handle calls over a local Wi-Fi connection. Because the corporate phone system/PBX still handles the calls, they are just as secure as if you placed it from your desk phone. Incoming calls ring on your desk phone and BlackBerry, letting users ensure they never miss an important call.

Verizon Updates webOS Devices

Verizon recently launched a software upgrade for the Palm Pre Plus and Palm Pixi Plus, which will update the OS to version 1.4.1.1. The update solves the occasional problem of repeated letters when you press a single key, adds pinch-to-zoom gestures to documents and PDFs, provides better battery life when connected to a Bluetooth device, automatically updates for daylight-saving time, improves the response when you wake the device by pressing the power button, and more.

Nokia Unveils Ovi App Wizard

Nokia has created a free app-building utility called the Ovi App Wizard, which lets users lacking any programming skill generate applications from any RSS or Atom feed and publish it to the Ovi Store for others to download and use on Nokia-based mobile devices. The four-step wizard walks you through the process of inputting your RSS feeds, uploading logos, adjusting colors as you see fit, and publishing it when you're happy with the results. Nokia claims that approved apps will be

posted on the site within a day. If you're more of an app consumer than an app creator, check out the Ovi App Store from your Nokia device to see if another user has created exactly what you're looking for.

AT&T Offers BlackBerry Users MyAssist Trial

BlackBerry smartphone users on AT&T can now access a free seven-day trial of MyAssist, which is a mobile personal assistance service that uses live agents to help you make travel plans and reservations, research topics online,



BlackBerry users can get a seven-day trial of MyAssist from the AT&T Media Mall.

and obtain emergency services or medical assistance. To sign up for the trial, simply visit tiny.cc/myassist-att, or download the app from the AT&T Media Mall. The handy service also works on iPhone and Android platforms, and lets users sign up for unlimited requests for \$9.99 a month.

by Andrew Leibman

Avoid Wireless & GPS Breakdown

Don't Let Interference Get You Down



You've probably caught yourself saying "Can you hear me now?" more than a handful of times, but it's obvious that this question has lost some of its relevancy, especially in a world where texts, instant messages, and mobile email are the increasingly popular avenues of communication. Truthfully, a reliable mobile connection isn't simply measured by how well you can hear your call recipient, but rather by multiple connectivity factors including the capabilities of data networks, severity of terrain interference, and device design.

You can experience varying degrees of interference when you're using a smartphone, a Wi-Fi-enabled device, or a GPS system. The proverbial scapegoat of your wireless- and GPS-related issues will inevitably be one of the following categories: the device, device settings, interference, network errors, and

dead spots. Understanding the technology behind the device can go a long way to minimizing your confusion when you have to start troubleshooting. That's why we're giving you a primer on cellular, Wi-Fi, and GPS technologies and the connectivity issues that plague them.

Cellular Standards

In the broadest of terms, cellular technologies are divided into two categories: the faster broadband technologies (3G and 4G) and the sometimes slower, yet extensive, wireless technologies such as CDMA, GSM, and EDGE, which are purposed for voice and standard data transfer. Traditionally, cellular coverage is provided by carriers that sustain signals via cell towers with overlapping coverage. The network standards transmitted by each carrier push out data at fluctuating rates, making some technologies slightly more seamless than others.

Each carrier uses a large network of cell towers (or base stations) to support a block of radio frequencies to broadcast to a particular region. Networks are broken down into hexagonal cell grids. Ideally, every major carrier would cover 100% of its network with a comprehensive system of cell sites. The reality is that there are gaps inside the grid. If you're caught in a gap, your cell reception can fade. And the farther you are from a cell tower signal that marks the boundary of a gap, the weaker your signal strength.

Cellular Problems

It may not be comforting to know that the majority of interference-related cellular issues are beyond your control, but knowing why your smartphone drops calls is half the battle. Because cell phones operate on increasingly busy networks, a high volume of callers or data users can strain certain towers in the service provider's network, thereby inhibiting the callers who are trying to access the network. If you're indoors in a standard coverage area but you're not seeing enough bars to get quality reception, you could be experiencing architectural interference where building materials and construction can obstruct your wireless signal. The obvious solution to this type of interference is to move closer to a window, step outside, and avoid using your phone in tunnels, basements, or elevators. In the outdoors, geography can easily disrupt your cell service with an unclear or distorted signal, especially if you're on the road, traveling between mountains.

Generally speaking, dropped calls are due to the so-called dead zone. Dead zones are the aforementioned "gaps" in the patchwork of hexagonal cell networks. You'll have to wait until you pass through these areas, which you will likely encounter while driving, in order to

If you need to consult your users manual to reset your GPS system or check the troubleshooting appendix, Garmin lets you download the documents online.

receive a strong signal again. A low battery may cause dropped calls, as well. In this scenario, you can charge your phone's battery, do a hard reset, or replace the battery if necessary.

Wi-Fi Connectivity

Public Wi-Fi access is available at hotspots such as restaurants, hotels, airports, and coffee shops. If your Wi-Fi device is programmed to automatically detect hotspots, you can simply walk in and log on to the Web, though some hotspots may require a security key.

Wi-Fi hotspots are established using an Ethernet connection and a wireless router. The Ethernet cable that's providing the Internet service from a wall outlet or other wired source connects to the wireless router. The router transmits the radio signal to compatible



Wi-Fi Problems

Most of the Wi-Fi problems you'll encounter will be due to the router. If you have access to your home or office router, then you can troubleshoot some common issues. Start by keeping the router away from the floor, walls, and metal objects because these act as obstructions. When you're experiencing a periodically dropped connection or limited connectivity, try unplugging the router for at least 30 seconds so it can reboot, then reconnect it. You may also need to refresh your Wi-Fi adapter or wireless radio in your device. If there are other devices in the vicinity of the router, such as microwaves, which operate on identical frequency bands as your Wi-Fi connection, the connection might get bogged down by interference. The easy solution is to keep routers and Wi-Fi devices away from these items.

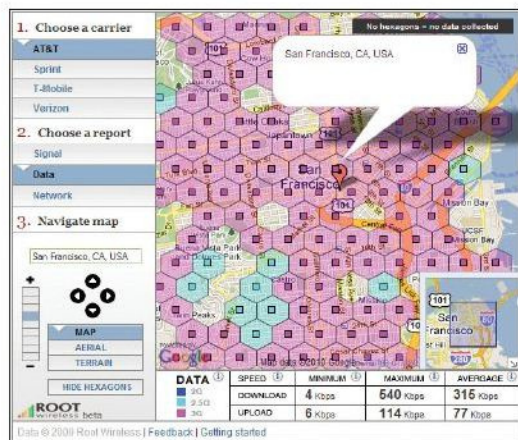
Keep in mind the radius of a router is limited to several hundred feet, so you may notice a drop-off or decrease in the consistency of your wireless signal performance. Multiple floors, concrete, and brick walls will all weaken your signal to some degree. A slow transfer rate may simply be due to an incompatible network protocol connection, so make sure that your router and devices are all functioning on a compatible Wi-Fi standard such as 802.11n.

GPS Troubleshooting

GPS navigation systems and GPS-enabled smartphones include a receiver that communicates with satellites orbiting the earth. Through a process called triangulation (where three satellites cooperate to measure the line-of-sight distance of the GPS unit), the GPS device plots a course of travel, location, or elevation. Because satellites are broadcasting radio signals to your GPS device, you can encounter a problem called multipath interference, whereby radio waves reflect against tall buildings. If you're using a GPS device in an urban setting populated with sizable structures, do your best to position it under open sky. You might notice terrain-related interference, such as incorrect location estimations, as you pass through mountain ranges or tunnels. A miscalculation could also be due to spelling or punctuation errors you've typed.

When the GPS receiver isn't properly processing satellite signals, you can blame cell towers, radio towers, and other frequency-producing sources that could be weakening the GPS signal. Indications of a feeble signal are hanging and freezing. Keep driving (or moving away from the area) to relocate a strong signal or add an antenna to boost the signal. If the device continually freezes or seems buggy, perform a factory reset on the device. This typically involves rebooting the device, but check your users manual for specific instructions.

by Joanna Safford



Root Mobile (www.mytruecoverage.com) has released a beta version of a wireless network performance app for Android and BlackBerry devices, so you can compare carrier coverage. Root Mobile requires an unlimited data plan and an up-to-date mobile OS.

wireless devices, such as laptops, tablets, smartphones, and portable media players. Radio waves are distributed on frequencies supported by networking standards such as 802.11b, g, or n.

SMARTPHONE

Tips

Boost Your
Mobile
Know-How

ANDROID

➤ Turn On Auto Complete

When typing commonly used words, Android's auto-complete feature can be a real time-saver. To enable this feature on your Android-based device, just open the applications menu, select Settings, Locale And Text, Android Keyboard, and Autocomplete. Now, when typing, simply press the Spacebar to insert the highlighted word.

➤ Browser Multitasking

Did you know that your Android browser can multitask? If you don't want to navigate away from your current Web page, just tap and hold your finger over the next link you want to view, or highlight the link with the trackball and press and hold down the trackball. On the context menu that appears, just tap (or scroll and then tap) Open Link In New Window to perform this handy function.

To access a thumbnail preview of your currently open Web pages, press the Menu key and then tap Windows. From this view, you can view the page full screen by tapping it or close any open Web page by tapping the corresponding X icon. Pressing the Menu key again from this view gives you options for opening a new window, adding a bookmark, and displaying your browsing history.



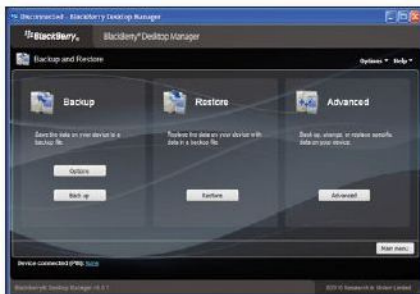
Auto Complete gives your thumbs a rest.

BLACKBERRY

► Update Your BlackBerry

To make sure you're enjoying all the latest features and options on your BlackBerry, you need to regularly update your device software. Depending on the version you're using, you have several options for updating. If your phone is part of a BlackBerry Enterprise Server, then we recommend letting your device administrator update your BlackBerry for you. For everyone else, it's always a good idea to perform a data backup on your device before performing an upgrade. This way, if something unexpected happens, you can always go back and perform a restore to get back up and running.

To perform a backup, you'll need to use the BlackBerry Desktop Manager, which should have come on the software disc shipped with your BlackBerry. You can also download the latest version of the software by visiting Research In Motion's Software Download For BlackBerry Support page (bit.ly/2jpVPe) and selecting the latest version available from the drop box. As we went to press, the latest version was BlackBerry



Back up your BlackBerry using the BlackBerry Desktop Manager.

Desktop Software 5.0.1. Click Next and then download the software. Open the file, click Run, and then follow the on-screen instructions to extract and install the software. When finished, launch the BlackBerry Desktop Manager and click Backup And Restore from the Main Menu.

If you click the Options button under Backup, you can enable or disable onboard device memory backup and file encryption; you can also configure the automatic backup settings. To perform a manual backup, click the Backup button on the main Backup And Restore menu, choose a location for the backup file (named for the date of the backup)

Advanced Options

Browser
Browser Push
Cell Broadcast Settings
Default Services
Enterprise Activation
GPS
Host Routing Table
Maps
Service Book
SIM Card
TCP/IP
Wireless Update

Wireless Upgrade makes life simple for BlackBerry users whose phones support it.

and then click Save. Click OK when you see the Successful Backup Created message.

► Wireless Upgrade

One of the easiest ways to upgrade your device is to use the Wireless Upgrade option, which most new BlackBerries support. To see if your device supports this feature, select Settings from the Home screen, then choose Options, Advanced Options, and then select Wireless Upgrade. If your device has the Wireless Upgrade option, then just follow the on-screen prompts to complete the update. If the Wireless Update option does not appear, then visit RIM's BlackBerry Desktop And Device Software Download Sites page (bit.ly/3LBuRR), click the link for your carrier, select your device, click Next, and then click the Download link that corresponds to the most recent version of the software. When the update is downloaded, follow the on-screen prompts to install it on your device.

IPHONE

► Scroll To The Top Of The Page

When viewing long documents or Web pages, you've no doubt found yourself scrolling to read the whole thing. But if you want to quickly jump back to the top of the page, simply tap the top-most edge of the visible screen, where you see your network provider, current time, and battery life meter. The page will rapidly scroll to the top of the page or document, saving you from frantically scrolling or reloading the page.

► Domain Resolution

When typing URLs into Safari, don't worry about typing out the "www" or ".com"; let the browser resolve domains for you. When you want to navigate to a Web site, start by

launching the Safari browser, tapping the URL field, and tapping the X to clear it. Then simply type the domain of the site you want to look up—for instance, **PCToday**—and tap Go. The browser will automatically add the



Press and hold your finger over .com to get other domain options.

prefix and suffix and will even check to see if there's a mobile version of the site that is optimized for mobile devices. If you know the domain suffix is something other than ".com" you can press and hold the .com button at the bottom of the on-screen keypad to view .net, .edu, and .org options. Just slide your finger to the one you want and then release. Tap Go to load the page.

SYMBIAN

► Outlook On Your Phone

Nokia S60 3rd Edition devices all support Microsoft Outlook email through the Mail For Exchange application. Most Nokia Eseries and Nseries devices ship with Mail For Exchange preinstalled, but if your device doesn't have it, you can download it free from the Nokia Ovi Store. Navigate to and launch the Ovi Store from the Installations folder, update the Ovi Store if necessary, review the terms and agree with them if you want to continue, and then perform a search

for Mail For Exchange. The latest version available as we went to press was Mail For Exchange 3.0. Select the Download button and then press the Navi scroll key to download the application. You'll need to sign in to the Ovi Store before you're able to download Mail For Exchange.

After the download and installation are complete, you'll have the option to set up a profile by entering your email address, password, domain, and username. You may need to consult your system administrator to get your exchange server name. Once properly set up, you'll have real-time access to your email accounts on the Exchange Server as well as your calendar, contacts, tasks, and company directory.

Especially handy for frequent travelers is the ability to turn on Out Of Office messaging directly from your Nokia smartphone. Other handy features include synchronization, flag status for follow-ups, alerts for meeting request conflicts, a standalone global address list application, the ability to set email priorities, and the ability to download and edit attachments.

► Set Up Mail For Exchange & Google

If you rely primarily on Web mail service for your email communications, you can use Mail For Exchange to sync your email messages, contacts, and even your calendar entries. We set up Mail For Exchange to use Google's Gmail Web mail service, but other Web mail providers should work similarly. If you have already installed Mail For Exchange, launch it by pressing the Menu key, selecting the Installations folder and then selecting the Mail For Exchange icon. Next, press the Options softkey, select Edit Profile, Connection, and then type **m.google.com** for the Exchange Server. Press Yes for Secure Connection, choose your Access Point, turn

on the Sync While Roaming setting, and leave Use Default Port set to Yes. Press the Back key and select Credentials, then enter your Web mail username and password, leaving the Domain field blank. Press the Back key, scroll down and select the Email option, input your Web mail address, select OK, and then press the Back Key again. If you choose to sync calendar, contacts, or tasks, make sure you change the compulsory settings, either Keep Items On Phone or Delete Items On Phone. Press the Back key to get to the settings menu and then press it again to save your settings.

Once complete, you might want to configure your device to save messages on a memory card to free up your internal memory. To do this, press the Menu key; select Communications and Messaging; press the Options softkey; scroll down to Settings; scroll to Other; select Memory In Use; and change the setting from Phone Memory to the memory card (the name that appears will vary depending on the card you installed).

► Rename & Rearrange Folders

If you view your menus in Grid view on your Nokia S60 3rd Edition phone, then often the names of the folders can be truncated. For instance, the Installations and Communications folders are abbreviated Installat and Communic. If the shortened folder names bug you and you simply can't stand List view, consider renaming the folders. To do this, press the Menu key, highlight the item you want to rename, press the Options softkey, select Rename, and then type the new name. To switch to Grid view to ensure none of your items are shortened, press the Menu key and select Tools, Themes, Menu View, and Grid.

After using your Nokia smartphone for a while, you'll probably find your Menu and

Installations folders filling up with icons, some of which you use regularly and others not so much. To move your frequently accessed folders and applications to the main screen for easy access, press the Menu key, highlight the item you want to move, select Options, and then select Move. A check mark will appear in the upper right corner of the item. Next, just highlight any other item in the menu to swap that item with the one you're moving.



Rearranging calendar entries is a simple way to reschedule an appointment.

WEBOS

► Rearrange Calendar Entries

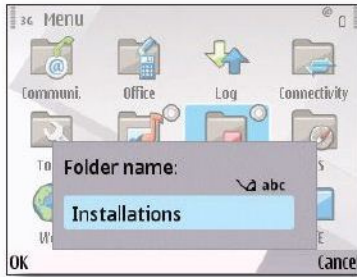
The webOS Calendar application lets you quickly and easily rearrange your daily appointments. To move an appointment, launch the Calendar utility, press and hold your finger over the appointment until it dislodges, drag it to the new time slot, and then release your finger. Multiple entries can share the same slot, so don't worry about clumping tasks together. Once set, all you have to do is remember to get it all done.

► View Email In Landscape Mode

When you're in the webOS Email app, you can enter a code to view messages and your inbox contents in portrait or landscape mode. To perform this function, launch the Email app and type **RocknRollHax** (this is



Mail For Exchange can handle your Outlook or Web mail accounts.



Renaming folders and apps can keep them from being truncated in Grid view.

case-sensitive). Now, when you rotate your Pre or Pixi, you can view the Inbox message list and the individual messages in landscape mode by tilting the device to the left or right. Keep in mind, though, that this is only a temporary fix; the new feature disappears once you back out of the Email app, requiring you to re-enter the code each time you want to view in landscape.

► WebOS Secret Codes

You webOS-based device has a number of hidden function codes. Some of these perform functions that you can access using the menus, but try these if you want to do something quickly. Dial each of these shortcuts from the dialer application as though they were phone numbers.

- Dial *2 to access customer service.
- Dial *3 to make a payment.
- Dial *4 to check your minute usage and account balance
- Dial ##477# and then tap Get Fix to show your current GPS fix (latitude, longitude, speed, and altitude).
- Dial ##3282# to view the current hardware and firmware versions and also the list of currently installed applications.
- Dial ##786# to determine the total minutes, data transferred, and more about your phone.

WINDOWS MOBILE

► Taking Pro Phone Photos

With smartphones sporting high-resolution image sensors, many Windows Phone users can confidently leave their point-and-shoot cameras at home and get surprisingly great results. To access your camera's settings on a Windows Mobile 6.5 phone, tap (or click to select) Start, Programs, Camera, and the Settings icon (commonly represented by a wrench or gear icon).

The Resolution setting determines how detailed your pictures are. Set it to the highest possible option. You can always resize or crop your photos later, but high-resolution images require more storage space.

White Balance lets you adjust the shooting conditions, such as daylight, night, incandescent, or cloudy. The default setting might produce washed out or colorless images, so try the other settings depending on the shooting environment to determine which ones work best. The Exposure or Brightness setting changes the image sensor's light sensitivity. When shooting in bright, sunny, or well-lit environments,

when the subject (such as a flower) is very close to the lens. The Face or Portrait setting is for a subject that is several feet from the lens. Once you've adjusted the settings appropriately, tap OK or click Done to exit back to camera mode and then snap away.

► Show The Quicklist

If your Windows Mobile phone has a separate power button (aside from the End Call button) you can press it quickly to access the Quicklist, which lets you enable Flight Mode and other profiles. If your Windows Mobile phone doesn't have a separate power button, you may need to consult your instruction manual to determine how to access the Quicklist. On some devices, pressing and holding the Home button does the trick.

► Speed Dial Tips

Setting up speed dial lets you quickly dial up your contacts by pressing and holding a number key. To configure speed dial, click or tap Contacts from the Home screen, select the contact you want to add, select Menu, select



A separate power button grants you quick access to the Quicklist.

lower the exposure; shooting in dim or dark conditions will require a higher exposure. A high exposure setting can also be used in place of a flash that tends to make images too bright.

The Effects options, including Grayscale, Sepia, Negative, or Watercolor, let you change the way your images look. Mode or Scene settings use preset exposure and white balance settings to suit common shooting situations, such as Portrait, Landscape, Sports, Indoor, Beach, Snow, and Fireworks.

AF (auto focus) or Focus settings let you set up the camera for the distance between yourself and the subject. For instance, use the Macro setting for taking a detailed photo

Add To Speed Dial, choose the location (or speed dial number), and press the Escape key to return to the contacts.

Most Windows Mobile phones also let you quickly dial your own number to access voicemail by pressing and holding the 1 key from the Home screen.

You can also speed dial frequently used applications. To assign an application to a speed dial key, select Start, choose the application you want to access with the press of a button, select Menu, and select Add To Speed Dial. Now the application will launch when you press and hold the corresponding number from the Home screen.

by Andrew Leibman

New In The Cloud

Printing From The Cloud & Other News

by Seth Colaner

Printing From The Cloud

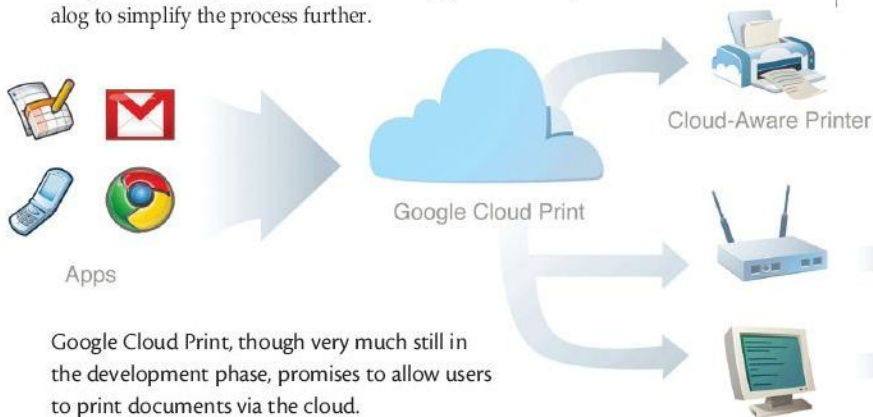
■ In all the hubbub about the cloud, Web-based everything, and browser-based operating systems, it's a fair and serious question: How will we print from the cloud? Printer drivers are notorious for being difficult and finicky—that is, if you can even find the right one for your particular computer-and-printer combo—so it seems that enabling printing from the cloud will likely be even more rife with driver problems.

Google hopes to solve this problem by centralizing printing in the cloud with Google Cloud Print. Although the search giant's latest project is still in the development phase, some documentation is publicly available.

Google Cloud Print will supposedly allow any device or application, whether desktop, mobile, or Web-based, to print on any printer. In theory, Google Cloud Print is certainly an attractive potentiality, and it certainly logically follows that if we're able to create and edit documents in the cloud, we should be able to print from the cloud, as well.

According to the handy graphic at the Chromium blog (blog.chromium.org), Google Cloud Print will send print requests to either a cloud-aware printer (we assume that simply means a properly configured printer with always-on Internet capabilities) or to a printer connected to a computer with an Internet connection.

According to Google's documentation, users will be able to share printers with one another as they already can share Google Docs items. Information on each printer's capabilities will be stored in the cloud, in part, no doubt, to ensure accurately formatted prints, and users will enjoy a common print dialog to simplify the process further.



Google Cloud Print, though very much still in the development phase, promises to allow users to print documents via the cloud.

SOURCE: BLOG.CHROMIUM.ORG.

Amazon EC2 Spot Instances

■ Already well-known for its Amazon EC2 Compute resources cloud service, Amazon Web Services recently announced a new feature called Spot Instances. Spot Instances presents a new way to get an EC2 Instance and is designed for users who can live without a specific start and stop time for running their applications, as well as for those who need to scale up immediately and temporarily. Spot Instances can lower users' costs and give them another measure of control over their expenditures.

Cost for a Spot Instance varies based on current supply and demand, but users can set their maximum price and take what they can get until the price fluctuates out of their range. This pricing model adds to the list of current possibilities, joining the On-Demand Instances (paying for compute capacity per hour, which is ideal for short-term projects) and Reserved Instances (up-front payments that get users a lower cost and one or three years of ready-to-go compute power) categories.

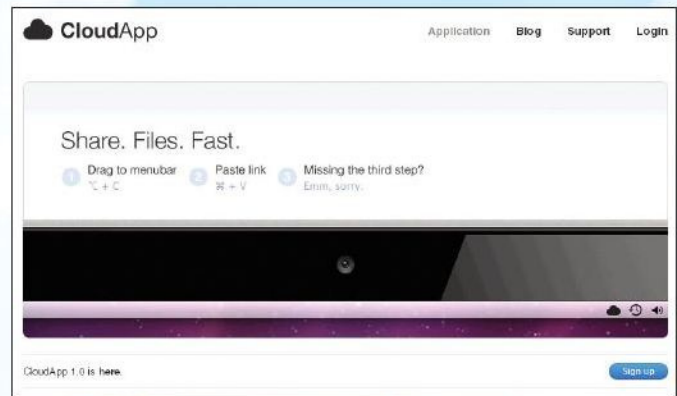
Spot Instances is another way that Amazon can make use of their massive server capabilities. Because workloads fluctuate constantly, cloud providers such as Amazon have to be able to handle peak loads. Therefore, during moderate or low workload periods, those capabilities are untapped, like a souped-up sports car puttering through a residential neighborhood. By selling Spot Instances, Amazon can utilize their extra space and compute power without having to commit to anything permanent.

CloudApp

■ Launched on April 1, 2010 (of all days), CloudApp is a new tool designed to make files, folders, screenshots, music, and whatever else strikes your fancy easy to share with others. Basically, you can sign up for an account at www.getcloudapp.com, download the desktop client, drag and drop a file (50MB or smaller) to the CloudApp menu bar, and the item will upload to your online CloudApp space. A link to that item will automatically be copied to your clipboard, so you can paste the link to your browser, send it to someone else, tweet it, or share it in another way. From your online account, you can edit, archive, and delete the files you uploaded.

CloudApp isn't online storage per se, although it does technically provide some Web storage. Instead, the idea is that you can share items with others and store them in the cloud—permanently or temporarily—for reference purposes. Using plug-ins called "raindrops," you can also share files from specific applications, such as Firefox, Photoshop, and Spotify with a hotkey. You can even easily compress a group of files and share them as a .ZIP file.

CloudApp is a Mac-only application, but Mac users with OS X earlier than 10.5 won't be able to use the desktop client. The tool is currently free. It's likely that additional features, including paid upgrade plans and additional raindrops, will be forthcoming.



CloudApp (getcloudapp.com), a tool for Mac OS X 10.5 and later, is designed to make sharing files, such as screenshots, music, and more, simpler than ever.

McAfee Crashes Thousands Of Computers

■ Although in retrospect it's surprising that this sort of thing doesn't happen more often, thousands of Windows XP users awoke to find that security software provider McAfee had inadvertently caused their computers to crash.

In what was supposed to be a routine virus definition update for McAfee security software, an error slipped through the company's test bed; it inadvertently identified as a virus a file that was benign. The mistake delivered a false positive, causing startup and shutdown problems. The problem apparently only affected computers running WinXP SP3 and did not affect Vista or Windows 7 machines.

It's disconcerting for computer users to be attacked (albeit inadvertently) by the thing that was supposed to be protecting them from attacks, like being bitten by your own guard dog, and such an event reinforces the case of those who fear the vulnerabilities of the cloud.

Although this wasn't a problem with a cloud application exactly, it was the always-on nature of the cloud that caused this error to go on unchecked for several hours. It could have been much worse; many who would have been affected by the faulty update did not have computers with active Internet connections overnight and thereby dodged the proverbial bullet. In a sense, their lack of connectedness saved them—not exactly a ringing endorsement for cloud computing.

McAfee, for its part, has pledged to reimburse its affected home and home-office users for repair costs and will apparently extend those customers' subscriptions for an additional two years. Business users' compensation will be determined on a case-by-case basis.



A routine McAfee security update ended up crippling thousands of computers running Windows XP, fueling the flames of cloud-related discontent.

Newsweek Switches To The Cloud & Is Put Up For Sale

■ According to a report by Media Week, The Washington Post Co., Newsweek.com's parent company, will no longer host the news outlet's Web site. Instead, the company will hand Newsweek.com's hosting duties to Amazon. The move will reportedly save Newsweek half a million dollars annually and represents a substantial shift to cloud computing for the news corporation. In addition to farming out its hosting needs, Newsweek.com received a major Web site facelift and switched its search feature from its own branded Newsweekopedia to Topic Finder.

On the heels of these exchanges, the Washington Post Co. announced that it is selling Newsweek. The news magazine has suffered three consecutive years of heavy financial losses, and 2010 predictions are also dire.



Newsweek.com, formerly hosted by parent company The Washington Post Co., made the jump into cloud computing by switching to Amazon's hosting services.

Web Basics

A Business Guide To Getting Started

No matter what your business is, it can't exist these days without a Web site. Not only are there more people relying on the Internet every day for research and communication, a Web site allows you to serve information, content, tools, and services in a powerful way.

To get a Web site up and running, you need a domain name, a Web site host, and content (that is, the site itself). You can do all of these things yourself, hire someone else to do them for you, or employ some combination thereof. What will best suit your business depends on what type of Web site you need and what kind of resources it will consume.

Domain Names

When you're building a Web site, don't forget the importance of selecting a domain

name and registering it. Your domain name is the URL or address of your site; for example, if you sold widgets, you might choose www.mywidgets.com as your domain name.

Although coming up with a domain name may seem like a trivial task, it is as important as the name of your business. It should be something that clearly correlates to your company's actual name, is easy to remember (or, if you can swing it, something catchy), and is simple to type. For example, if your company is John Doe Widgets, Inc., a good domain name would be www.johndoewidgets.com.

You must register your domain name in order to use it and prevent others from using it. Almost every Web host will take care of domain

name registration as part of its service, but you should have multiple names in mind when you begin the

process of setting up an account with your Web host. Registering a domain name costs very little—usually less than \$50 per year, and sometimes less than \$10 a year.

Web Site Hosting Services

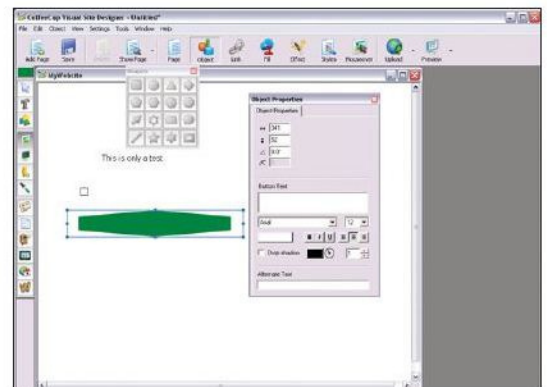
Which hosting service you use is the most crucial decision in the

process of launching a Web site because your site will be constrained or liberated by the capabilities of your host. Also, your costs will vary widely depending on the host you choose.

The simplest function of a hosting service is to store your Web site's files (that is, its



Free or very inexpensive services such as Weebly (www.weebly.com) offer intuitive drag-and-drop Web site-building tools.



Software WYSIWYG tools such as CoffeeCup's Visual Site Designer (www.coffeecup.com) enable you to construct Web sites on your own.

pages, documents, images, and so on) and serve them on request. When you open any Web site, you're effectively sending a request to a server to display the Web site's content. The host's server instantly replies and allows you to view and interact with the site's pages.

However, Web site hosting services usually offer many additional features, including email accounts with your domain name (such as

myemailaddress@mywebsite.com), FTP (File Transfer Protocol) accounts for posting and exchanging documents and other files, SEO (search engine optimization), analytics and reports to let you monitor site traffic, domain name registration, marketing tools, ecommerce solutions, and site-building tools.

When choosing a Web host, be sure that you select a provider and a plan that has enough storage for all of your content, sufficient monthly bandwidth to enable you and your customers to conduct business with no

interruptions in service, and any other features you want for your site, such as email addresses or multiple FTP accounts.

Building A Site

Your Web site, of course, must have content. That is, it needs pages, images, and text for those pages, and anything else you want on your site, such as downloadable files, forms, and interactive features.

If the prospect of building a Web site from scratch sounds daunting, that's because it is.

At the most basic level, a Web site requires good, appealing design that incorporates your company's mission, purpose, and style. It requires well-planned navigation. And it must be updatable. Web sites are written in HTML and frequently include CSS, JavaScript, Flash, and other coding languages.

Nailing down the cost of hiring a Web designer to build your site is difficult because it's very specialized design work, and every client needs something different. Jeff Venn of Create Web Studios (www.createwebstudios.com) in

WEB HOSTING SERVICES

	URL	WEB HOSTING	DOMAIN NAME REG.	SITE-BUILDING TOOLS	TOTAL COST
1&1	order.1and1.com	\$3.99 to \$19.99 per month	Free	Included	\$47.88 to \$239.88 per year
Doodlekit	www.doodlekit.com	Free to \$99 per month	Free with most hosting plans	Included with most plans	Free (without domain) to \$1,188 per year
Go Daddy	www.godaddy.com	\$5.49 to \$14.99 per month (discounts may apply)	\$1.99 with hosting plan	Minimal	\$67.87 to \$181.87 per year
Homestead	www.homestead.com	\$4.99 to \$49.99 per month	None with Starter Plan; included with Gold & Platinum plans	Included	\$59.88 (without domain) to \$599.88 per year
Hostway	www.hostway.com	\$13.95 to \$71.95 per month	Free with most hosting plans	Included	\$167.40 (without domain) to \$863.40 per year
InMotion Hosting	www.inmotionhosting.com	\$3 to \$5.95 per month	Free	Included with most plans	\$36 to \$71.40 per year
iPage	www.ipage.com	\$3.50 per month	Free	Included	\$42 per year
Just Host	www.justhost.com	\$3.45 to \$6.95 per month	Free	Included	\$41.40 to \$83.40 per year
Lunarpages	www.lunarpages.com	\$2.95 to \$99 per month	Free with most hosting plans	Included	\$55.35 to \$1,188 per year
Verio	www.verio.com	\$9.95 to \$29.95 per month	Not included	Included	\$119.40 to \$359.40 per year (no domain)
Webnode	www.webnode.com	Free to \$19.95 per month	Free with most hosting plans	Included	Free (without domain) to \$239.40 per year
Weebly	www.weebly.com	Free to \$3.99 per month	\$39.95 per year	Included	\$39.95 to \$87.83 per year
Yahoo! Small Business	smallbusiness.yahoo.com	\$9.95 to \$12.95 per month	\$34.95 per year	Included	\$154.35 to \$190.35 per year
Yola	www.yola.com	Free to \$4.17 per month	Free with Silver plan	Included	Free (without domain) to \$49.95 per year

Jacksonville, Fla., says that prices for freelancers vary, "but you can get sites from \$600 up to the low \$1,000s. Design firm prices would start at \$1,200 and go up to \$10,000 for a brochure-ware site with some capture forms and a great design."

Joe Smith, owner of Nebraska Networks in Omaha, Nebraska (www.nenet.net), agrees that there's a big price range for services. "It depends on the specific needs of the business—but you're talking a low end of around \$500. That's to get a nice-looking site up and running," albeit one with very few frills. He said that he charged \$4,500 for the most expensive site he built last year, but even that is low; after learning that one of his clients sought other bids for their Web design services, he discovered that "what we did for \$4,500, the next closest bid was \$16,000."

Much of the cost, Smith notes, is from specialized work such as search engine optimization, which is important if you want

WEB SITE CREATION SOFTWARE

Adobe	Dreamweaver CS5	\$399	www.adobe.com
CoffeeCup	Web Starter Pack	\$99	www.coffeecup.com
CoffeeCup	Web Designer Pack	\$149	www.coffeecup.com
Ewisoft	Website Builder	\$39.99	www.ewisoft.com
EZGenerator	Website Builder	\$129	www.ezgenerator.com
Kompozer	Kompozer	Free	www.kompozer.net
NetObjects	Fusion Essentials	\$199.95	www.netobjects.com
SiteSpinner	SiteSpinner	\$49	www.virtualmechanics.com
Web Studio	Web Studio 5.0	\$179.99	www.webstudio.com

a great deal of the heavy lifting is done for you if you decide to go it alone.

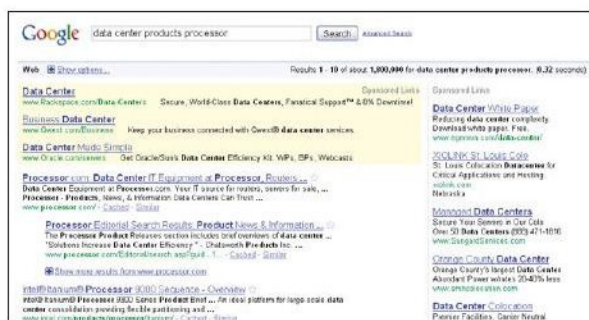
There are also many software applications that use WYSIWYG (short for "What You See Is What You Get" and pronounced "whizzy wig") editors to help you create a site with very little coding know-how.

Venn believes there's a place for free hosting and site-building services as well as software, but advises users to be aware that time is money, too. "Most small business owners don't know what they don't know about Web design. So after fiddling with a tool for

upwards of 10 to 20 hours, they may come out with a mediocre

or online tools and going with an inexpensive Web host; if you need a big site with enhanced functionality, you may opt to pay third parties to handle everything from creation to management and spring for an unlimited hosting plan.

Domain names cost very little, and are in many cases complimentary with your hosting plan. Some hosting plans are free, many cost less than \$100 per year, and few exceed \$1,000 per year. The biggest wild card in terms of building a site is cost; you can build your own site free with tools provided by your Web host, purchase software (ranging from approximately \$40 to \$400), or hire a Web designer—which can cost as little as a few hundred dollars for simple design and



Search engine optimization is paramount to your Web site's success—your site should appear high on search engine results; many hosts and site designers offer SEO services.

your site to come up in Google searches. "We'll see people that'll spend \$20,000 on a Web site. It looks beautiful; it's got every bell, every possible whistle, but no one on God's green earth can find it. They just wasted their entire budget. If you've got a reasonable, functional site, but it's got placement in Google, placement in Yahoo!, you're going to do business."

Some online services let you design and build Web sites with pre-made site templates and simple drag-and-drop tools, obviating the need to know anything at all about HTML or other coding languages. Clearly, in some cases, you should definitely hire a professional to design and build your site for you, but because of the wealth of capabilities afforded by Web hosts and software makers,

site at best. For \$500, a freelancer could probably use the same tool and come out with something significantly better."

If you're going to create a site on your own, though, choose a host before you buy any site-building software. Many hosts offer free or deeply discounted software as part of your plan.

Counting Costs

The cost of launching a Web site from scratch is proportional to your needs as well as to the extent to which you want to be involved in the whole process. If your requirements are relatively spare, you can get by with creating the site yourself with software

Most Web hosts have a variety of plans you can select from to best suit your particular Web site needs.

creation and as much as tens of thousands of dollars for design, creation, SEO optimization, and other related services.

In other words, you can have your site for almost nothing, break the bank for all the trimmings, or find a happy medium somewhere in between.

by Seth Colaner

Web Success

A Guide For SMBs

It takes a lot for a business to find success online, and simply having a Web site isn't enough. Businesses that have effectively increased both online visibility and online sales have wrapped their Web site into a larger online marketing strategy designed to drive traffic to the corporate Web site. And it's not something that can be done in a week, a month, or a year. It's an ongoing process that takes time and long-term dedication.

Your site should be more than a place to project information about your company, products, and services. Companies that embrace the interactive and information-sharing nature of the Web 2.0 climate are often the most successful. By engaging users and offering collaborative content and tools on your Web site, you can make a visitor's experience more meaningful, useful, and memorable, which can potentially lead to more inquiries and sales.

"The biggest mistake is to treat your Web site as if it's a digital brochure. When you do that, you're really not leveraging the fact that the most powerful thing the Web can do for your business [is to] create connections. That's the most powerful thing. It is a proxy to leads," says Adam Singer of TopRank Online Marketing, creator of The Future Buzz blog (www.thefuturebuzz.com).

Finding true success with Web presence includes mixing content marketing, SEO (search engine optimization), social networking, and online advertising. All of these efforts combine to increase site traffic and sales inquiries.

Content & SEO

The content you add to your Web site should be linked to a comprehensive SEO strategy. An SEO strategy aims to rank your Web site high when certain keywords are queried. By including the right combination of keywords and phrases on your site, potential customers will be able to quickly find your products and services when researching their options. Because

B2B Marketing Blog
Strategies, Insights & Perspectives on Business-to-Business Marketing

Meaningful Metrics for B2B Blogging
Julie De Young | October 17 | 10:28 AM (Thu) | April 28, 2010

Whether you're just starting a B2B blog or have been blogging for a long time, you should be happy to see results. After all, a lot of time and effort is going into creating new content, and it's a hard to consistently keep this content reaching its target. But if you're looking to traditional, you may have missed to evaluate your success and impact. You may be disappointed. (more...)

Don't Miss MarketingProfs' B2B Forum: May 3-5, Boston
Julie De Young | October 17 | 10:28 AM (Thu) | April 28, 2010

It's only a few weeks away now, and it's time to be one of the first ones to experience and actively engage in B2B marketing.

Choosing The Right Social Sharing Options for B2B Content
Julie De Young | October 17 | 10:28 AM (Thu) | April 28, 2010

There's a lot to be said for social media sharing options. From the bottom of blog posts, and pages, and other content marketing assets, I've seen some great results and some not so great. I've seen some great results and some not so great. I've seen some great results and some not so great. (more...)

Inbound Marketers Report a 60% Lower Cost Per Lead
Julie De Young | October 17 | 10:28 AM (Thu) | April 28, 2010

Internet marketing technology provides inbound marketers with a ready-made 2010 State of Inbound Marketing. The study included 231 marketing professionals, 10% of whom worked for B2B companies in a wide variety of industries. The report indicates that inbound marketing is the most effective marketing strategy, with a 60% lower cost per lead than other strategies. (more...)

Where Should B2B Bloggers Set Up Their Corporate Blog?
Julie De Young | October 17 | 10:28 AM (Thu) | April 28, 2010

The answer of where B2B marketers should place the corporate blog is a tricky one. In a previous post, we discussed the pros and cons of having a corporate blog on a third-party site, like WordPress or Blogger. The post addressed some of the pros and cons of having a corporate blog on a third-party site. (more...)

Average Cost Per Lead

Marketing Strategy	Average Cost Per Lead
Outbound Marketing (Traditional)	\$300
Inbound Marketing (Digital)	\$100

Reported by: [Source]

Your corporate Web site should have a blog to drive consistent traffic to your site and better your SEO. This example is from Proteus Marketing.

B2B organizations, such as the Greater Omaha Chamber, have found success using Facebook and other social networking sites.

Greater Omaha Chamber

Supporting the Greater Omaha Chamber of Commerce and Industry. We are committed to the economic development of the Omaha area.

Greater Omaha Chamber of Commerce and Industry

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many industries don't adhere to standard vocabulary, it's important to research which terms are most commonly used by your audience. Then, include a broad range of those terms and phrases in the content you produce for your site.

Pete Fabian, the creative director for Risdall Advertising Agency (www.risdall.com), says comprehensive research must be done before the Web site creation process starts. The biggest mistake SMBs make, Fabian says, is hurrying through the initial research process and jumping right into the design and deploy stages. "Some of the strategic thinking, and the time spent discovering what the Web site needs to be, gets rushed because the client wants to get something up, and they rush right into design," Fabian said. When the goals and objectives for the site are clearly defined, it makes the design and deployment steps smoother and more successful.

Your initial research will also help you pick which types of content are going to be the most beneficial to potential customers. Content can include white papers and case studies, videos, podcasts, slide presentations, webinars, and press releases. By providing resourceful and valuable content, you are reducing the perceived risk of doing business with your organization and enhancing the chances that your audience will pass on the content to other potential customers.

In addition to engaging content, having a corporate blog that is updated frequently is also important. Not only does it add to the credibility of your company, it's also a way to draw people back to your site on a regular basis. And finding subjects for your blog posts is easier than you might think. Blog entries don't have to (and shouldn't) focus solely on the products and services you provide. You can blog about industry trends, news, and future technologies, in addition to posting about the white papers, case studies, and other data on your Web site. When you do talk about your products, Singer recommends emphasizing the benefits your product will bring the user, rather than just the product features.

If you have an interesting case study or white paper, or other information uncovered by your company, Derek Edmond, managing partner at KoMarketing Associates (www.komarketingassociates.com), suggests breaking it down into three or four blog entries. Not only does it help you come up with topics for

multiple blog posts, it can also increase SEO keywords and phrases that help your Web site turn up in both broad and specific queries. Edmond also advises putting together an editorial calendar to be sure your site stays up-to-date and doesn't stagnate.

Purposeful Networking

For some SMBs—particularly business-to-business companies—getting into social networking might not seem like a productive way to spend limited time and resources. However, social networks can play an important role in increasing visibility and credibility as part of your SEO strategy because they offer a new space for page referrals and dynamic content.

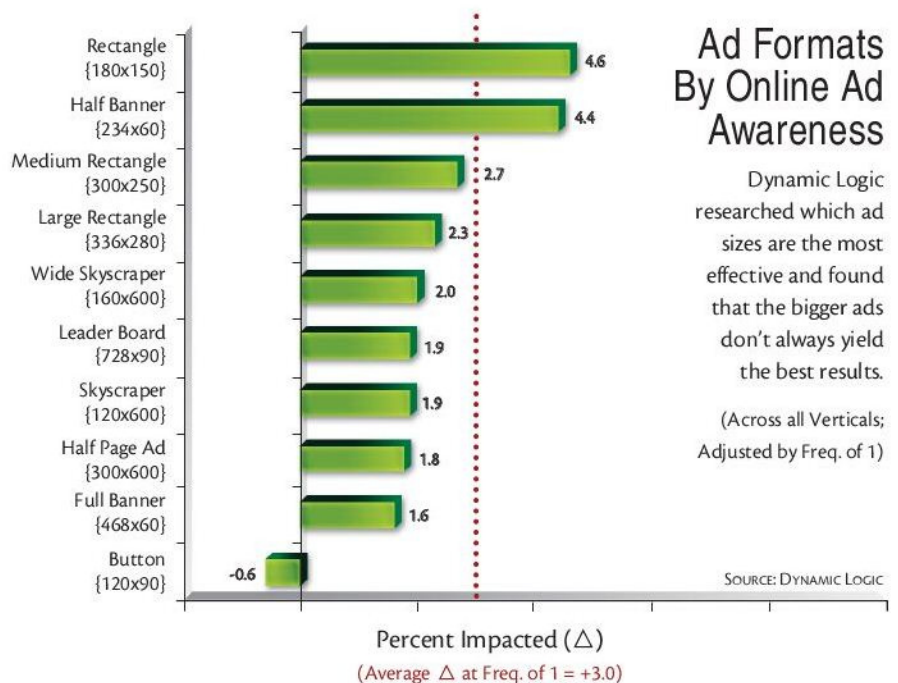
"Certainly social networking has value because you can reach a variety of different audiences," says Edmond. "You can reach different decision makers by getting to different communities, or the users of the products or solutions that you provide. But purely from the SEO world, we are using social media and social networking sites with our clients to find link opportunities."

For businesses with limited resources, Singer suggests using Twitter and Facebook as outposts for existing material on the Web site, and not new content. Regardless of whether you have new or recycled content on your social networking page, it will increase

your chances of ranking highly on search queries and provide another chance to be discovered by potential customers. It also shows prospects that you "get" social networks and their value—provided that you are engaged in the right way.

Like content creation and SEO planning, you need to find out which social networks your audience participates in so that your own participation in those networks can maximize ROI. Because there are so many social networks to choose from, it's better to focus on two or three places your audience is most likely to be, rather than try to be everywhere. Additionally, when you post content to social networking sites, it's important to provide ways your audience can link back to your corporate Web site. You don't want them to spend too much time consuming content on the social networking site because your corporate site is where they will submit sales inquiries and get more detailed product information.

Social networking falls under the umbrella of social media. Social media can be used to define any type of interactive online communication, which may or may not be part of your corporate site or a social networking site. Galen De Young, managing director of Proteus Marketing (www.proteusb2b.com), says B2B companies wanting to engage users through social media need to recognize the





Google Analytics can show traffic sources, visitor location trends, and number of visitors.

same study uncovered that ads with rich media and videos had a stronger impact than those with simple Flash usage or without video. So-called "reveal" ads (in which numerous frames are displayed sequentially, ending with a

company brand or logo) were the least effective, while those with simple messages and human imagery were the most effective.

Using Web Analytics

Once your content and SEO strategy is implemented, you'll need to track its progress and find out what's working so you can fine-tune the process as you go along. Many organizations establish success metrics for increasing sales inquiries by a specific amount over a specific time period (three to six months, generally).

Web analytics programs, such as Google Analytics (www.google.com/analytics), provide information such as how people get to your site, how they navigate through it, and how they become customers. Additionally, you'll find trends regarding which sites are producing the most links to your site, how many returning vs. new visitors you have, and the number of page views. Analytics programs can also help you discover which keywords and phrases are drawing attention and driving traffic to your site. You can sign up for a Web analytics program that will charge you per month (anywhere from around \$20 to a few hundred dollars), or you can use a free program, such as Google Analytics.

In addition to Web analytics, you can also track referral sources and where sales are coming from in a spreadsheet or marketing application. When you understand

where sales leads are coming from and which referral pages are producing the most leads, you can make your SEO and content management strategies more efficient and increase your online marketing ROI.

A Marathon, Not A Sprint

SEO, content marketing, and online advertising all require research, preparation, and follow-through. If ranking highly on a search engine or increasing your visibility and traffic is important, consider getting help from an agency that focuses on online marketing. For an advertising agency to build a Web site for you using an SEO and content marketing strategy, you can expect to pay between \$15,000 and \$50,000, says Fabian. Otherwise, surround yourself with people who are well-versed in online marketing and know how to implement a successful strategy. The key is getting a plan in place and then dedicating time and resources to keep it relevant and useful to potential customers.

by Tessa Warner Breneman

broader sense of community it represents. De Young says your company should spend the majority of its time focusing on contributing to the community, as opposed to always benefiting from it through promotion. This will send the message that you are a strong community contributor, which is another way to increase your credibility.

For example, American Express's Open Forum campaign aims to help small businesses be successful. Open Forum (www.openforum.com) is a site where business owners can congregate to share ideas, network, and learn new strategies for their companies. If you head up an SMB, consider what you can contribute to your community using your resources and expertise.

B2B Online Advertising

Online advertising is another way to increase your Web presence. Although 2009 Internet advertising revenues were down 3.4% from 2008 totals, according to the Interactive Advertising Bureau and PricewaterhouseCoopers, the 13.8% surge in Q4 over Q3 last year showed that the demand is increasing once again.

Because online advertising is still relatively new and constantly changing with Web usage trends, it can be difficult for SMBs to figure out what works. Marketing research firm Dynamic Logic (www.dynamiclogic.com) tested and researched the effectiveness of more than 170,000 online ads and found that the creative aspect was more important than size and placement. Also, note that the same creative principles apply to both online and print advertisements.

According to Dynamic Logic's report, the most effective digital ads are those that were integrated into the content of the page, including ads that were relatively small. Half banners and rectangles outperformed the larger leaderboard and skyscraper ads. The

The Open Forum Web site by American Express is an example of a social media campaign.



Cloud Computing

A Security Perspective

No doubt you've been hearing—and possibly talking about—the buzzword that's been on everyone's lips: The Cloud. It's all the rage. It's the latest and greatest thing to come down the technological pike, and it's going to save your company.

Except that it's not really new. And it's not a silver bullet. And it's not without problems of its own.

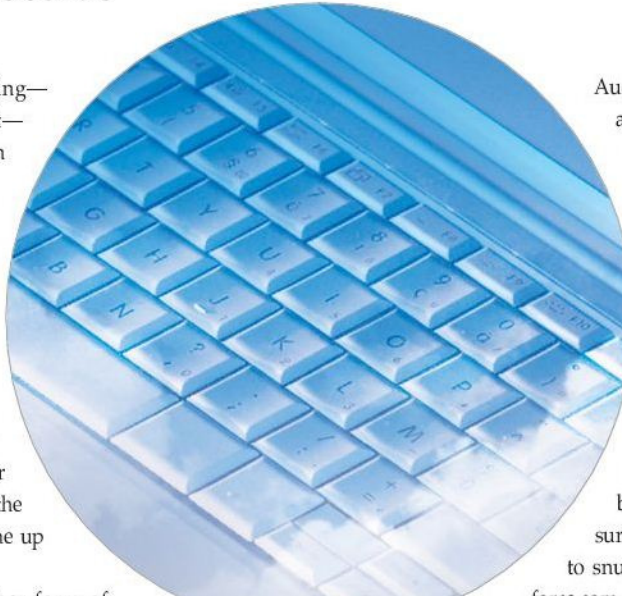
"There's really nothing new here," says Gartner research director John Girard. "This issue came up in the 70s, it came up in the 80s, and it came up in the 90s."

Cloud services are simply another form of outsourcing. In this case, you're outsourcing important infrastructure functions (HR, data processing, CRM, etc.) and entrusting them to providers who use a Web-based cloud environment to help provide those services. Because the providers can use a shared infrastructure to do their jobs, in theory you can be assured that the functions you outsource in this fashion will cost you less than if you had attempted to provide those services yourself. Ideally, you save money, time, and trouble.

Is The Cloud Safe?

But all is not perfect; dangers lurk in the cloud, and security (and other) worries abound. Companies run on data; as a business owner or manager, you spend a good deal of time, money, and effort ensuring that your data is safe. Will your cloud-based service provider do the same? Is it even *possible* for the provider to do the same?

"If you were to go to AT&T and ask them to host your data center," says Gartner vice president and security analyst John Pescatore, "you'd want to make sure that AT&T is going to run the data center as securely as you would run it."



What To Look For When Considering Cloud Services

Outourcing to a cloud-based provider is no different from outsourcing to any other vendor. In order to gain efficiency and save money, your data and processes are exposed to a certain amount of risk. To mitigate that risk:

- Ask to see the results of a SAS 70 audit
- Require an ISO 27001 report on the vendor's security management systems and processes
- Decide whether the physical location of your data matters to you; keep in mind that requiring that your data reside in a specific country may cost you more

That's an assurance you may or may not be able to bank on, but companies are trying hard to win your trust.

"Recently," says Pescatore, "Google and Microsoft have gotten SAS 70 (Statement on

Auditing Standards, No. 70) service provider audits," because these days internal auditors insist on it. Now the security people are also demanding assurances, so companies are also having ISO 27001 security audits done.

Salesforce.com is a good example. Five years ago, the company started selling services to larger enterprises, and those larger businesses wanted to see the results of a SAS 70 audit. Then they demanded a security audit. Salesforce.com provided both forms of audit, and can now give assurances that their security processes are up to snuff. "In general," says Pescatore, "Salesforce.com can prove that it runs its data center as securely—or more securely—than you do."

What it boils down to is the same tradeoff you've always made when outsourcing. If you're going to use cloud-based services, you need the service provider to demonstrate that it's just as secure as any other outsourcer, cloud-based or not.

What About Loss Of Control?

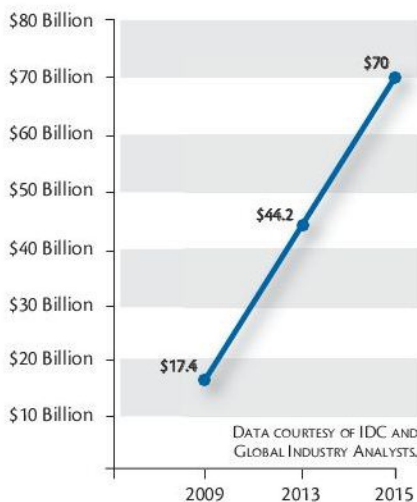
Another related worry looms for owners and managers: If infrastructure and data processing become the domain of cloud-based outsourcers, who is in control of the data? And where is that data physically located?

Control *should* be a nonissue, says Gartner's Pescatore. "It's human nature to feel more secure if I'm in control. Many companies that outsource feel like they've lost control of how things are being done, but in reality it'll probably be done *better* than when they were doing it."

Of course, by using a cloud service you do lose some control. After all, businesses pride themselves on being quick and nimble, able to react almost immediately to local conditions. And, while you may wish to change very quickly, you may find that you're unable to do so. If you're using a cloud-based provider, you

Cloud Computing Market Explodes

Cloud computing is growing so rapidly that revenue estimates vary wildly. In any case, expect cloud-generated revenues to more than double over the next couple of years, and then jump to at least \$70 billion by 2015. In fact, some analysts predict that the segment will generate over \$222 billion by that time. One possible scenario:



can't simply push out a fast function change; instead, you may have to *request* a change from your provider, which limits your ability to react quickly to changes and threats.

The question about the actual location of the data may betray a politically motivated concern that's sometimes as much about ideology as security.

"In a true cloud, Google or Amazon can scatter storage all over the world, in the cheapest possible places," says Pescatore. "From a technologist's point of view, this is great, but managers may be saying, 'My intellectual property might be stored in China?! I don't want my stuff stored in China!'"

To combat this problem, Google and Microsoft have come up with "overlays," tools that guarantee your data will only be stored in the United States. Of course, this added functionality costs you more money, because it limits the providers in terms of which storage and hosting options they're allowed to use.

It's Nothing Special

The real decision businesses must make has little to do with a specific technology; it's

simply a question of whether to outsource. Deciding to use (or not use) the cloud is really the outsourcer's problem, not yours. If service providers can use cloud technology and still guarantee an appropriate level of security, then you can outsource to them. By using a distributed and cost-efficient infrastructure, they can make more money and, one hopes, pass the savings on to you.

In the end, says Pescatore, "The cloud is not something users should care about; it's something the *service providers* should care about. Salesforce is a good example. You're not buying cloud—you're outsourcing sales force automation. The fact that Salesforce.com can do it in a cloud-based, shared-service infrastructure is what enables them to make money, and it's what lets you outsource to them at a lower price."

No matter how you slice it, though, that reduced cloud-based price adds some security risk: Where's my data stored? Am I guaranteed that it won't be compromised? How strong is that guarantee? The key is deciding what level of risk is worth a specific level of return. Again, that's nothing new; it's exactly the same question that 20th-century automakers had to answer when deciding to outsource the production of batteries and lamps, and it's the same question you must



Gartner vice president and Internet security expert John Pescatore says that cloud-based service providers that have gone through multiple audits may offer data centers that are more secure than those run by the companies themselves.

now answer when deciding whether to farm out your CRM functions.

Finding Safe Passage

As Gartner's John Girard puts it, "If you're sending your databases and your processing to an outside agency, you're going to have to be able to accept the risk and reach some level of understanding about how your information and your systems will be cared for."

If you're a medium-sized business, look for a SAS 70 audit. Also look for evidence that your supplier has undergone a security audit, such as ISO 27001. Finally, you need to decide whether the physical location of the storage is important to you.

Using the cloud is no different from any other form of outsourcing. You have a fiduciary duty—and often a legal obligation—to protect your data, and that is true regardless of whether your provider is the print shop around the block or a huge telco that operates server farms all over the world.

by Rod Scher

Playing In The Clouds

Everyone's in the cloud these days, but some of the biggest players are names we all know:

- **Google:** Google's Gmail is merely the visible tip of a cloud-based iceberg. All of the company's software and hardware are managed in the cloud, which means that upgrades and fixes are transparent and automatic.
- **eBay:** The vast majority of eBay's consumer services are provided in the cloud, which allows the company to track—and charge users based upon—usage.
- **Salesforce.com:** The 900-pound gorilla in the cloud-based SaaS (software-as-a-service) market, Salesforce.com may have been the success story that made cloud computing viable. Its services are scalable, reliable, pay-as-you-go, and astoundingly popular. In 2009, Salesforce.com became the first billion-dollar cloud computing company, posting a 44% increase in revenues from the previous year.
- **Amazon.com:** Not only does Amazon base much of its own infrastructure in the cloud, it also sells cloud-based services to other businesses via its Amazon Web Services or EC2 (Amazon Elastic Compute) offerings.

Audio & Video NOTES

by Blaine Flamig

"Your Eyewear Never Sounded So Good"

■ We're all for products that fill multiple needs. Take the eyewear from Energy Telecom (www.energytele.com), for example. Featuring clear and tinted impact-resistant Uvex lenses (you can have prescription lenses inserted, as well), the Basic (\$179), Recreational/Entertainment (\$219), and Sight and Hearing Protection (\$279) glasses also support



voice communication with paired cell phones, VHF/UHF radios, and various adapters via integrated Bluetooth. Further, you can listen to stereo audio streams from a music-playing smartphone by plugging in the glasses' integrated Howard Leight replaceable earplugs.

Energy Telecom says when combined with the earplugs, onboard dual microphones and Samsin

Noise Attenuation software cut undesirable noise by 20dB on average. The glasses include a built-in battery that's rechargeable via USB port and supports six hours of talk, eight hours of audio, and seven days of standby time.

Rhapsody, Bing Spin New Music Choices

■ Rhapsody (www.rhapsody.com) and Melodeo (www.nutsie.com) recently gifted iPhone, iPod touch, and iPad owners with features that nearly any music fan should happily embrace. First, a subscriber to Rhapsody's all-you-can-listen-to music service (\$9.99 per month) who downloaded the company's free iPhone app could already access and listen to any track in Rhapsody's 9-million-plus song catalog from the iPhone with an active Internet connection. Now, a recent update to the app lets subscribers also create, download, and listen to playlists consisting of Rhapsody songs on the iPhone even when an Internet connection isn't available. A major benefit of offline listening, of course, is that it saves the iPhone's battery life. In the future, look for Rhapsody to add the ability to download albums and individual tracks.

Melodeo's Top 100s By Year app, meanwhile, typically costs \$1.99. For a limited time, however, it's being offered free via sponsorship from Microsoft's Bing search engine. You must put up with some advertising (which you can decrease by downloading the free Bing iPhone app), but in exchange, the app slickly presents a list of the Top 100 songs for each year from 1947 through 2009 that users can listen to. That's 6,200 free songs if you're keeping score. One caveat is you can't queue up individual tracks. Instead, songs stream in "shuffle mode like a Web radio station." Dialing up an individual track will let you preview its lyrics and artist info as provided by Bing, plus buy the song via iTunes. Also noteworthy is that song choices "are not solely based on the *Billboard* charts and record sales" but are songs that "have stood the test of time based on their initial and lasting popularity, and on their impact on the overall scope of musical history."



Rolling Stone's Entire Long, Strange Trip Available Online

■ We can't imagine Hunter S. Thompson would approve, but iconic music magazine *Rolling Stone* (www.rollingstone.com) officially entered the digital print domain recently by making every issue published during its 43-year history available online—with a subscription. Although some material will remain free to readers via the site's home page, acquiring the ability to digitally flip through every page published going back to 1967 requires a monthly (\$3.95), yearly (equals \$2.50 per month), or two-year (equals \$1.87 a month) subscription. A sub also nets readers a print subscription and access to viewing the magazine's renowned magazine covers. "We're taking control of our digital destiny," stated the magazine's Steven Schwartz. "This is not, 'Let's rush to the Web because print isn't strong.' This is our brand's ability to tap into a new medium." Reportedly, Rollingstone.com amassed roughly 1.3 million unique visitors and 9 million page views in March 2010 vs. Pitchfork.com's 906,000 unique visitors and 19 million page views.

MobiTV Brings TV To The iPhone

■ If you've been delaying buying an iPhone until the day you could watch live and on-demand TV shows, sports, news, and other programming on its screen, the wait is over. With MobiTV's (www.mobitv.com) recently released free app (available via Apple's App Store), you can tune into hundreds of full-length shows from ESPN Mobile TV, Comedy Central, ABC, NBC, CBS, MTV, Disney Channel, SyFy Network, Bravo, Spike TV, and 35 channels total that MobiTV says it "refreshes every hour of the day." A major catch is the app only includes one free channel (ABC News Now), plus some prepackaged videos and classic cartoons. Accessing all of MobiTV's content requires plunking down for one of three subscriptions, which start at \$9.99 per month. Wi-Fi and 3G connections are supported, but iPad and iPod touch compatibility is missing, although MobiTV hints iPad support is coming.



Give Credit To The GizmoCase

■ Upon first appearances, Barefoot Innovations' GizmoCase (www.gizmocase.com) doesn't appear all that different from scores of other silicone cases for iPhone 3G/3GS models. Look closer and you realize the GizmoCase does a nice job implementing wallet-like features in an iPhone case with the aim of simplifying exactly how much stuff you have to carry about. Combine a GizmoCase (\$16.99 each; available in nine color choices) with the related Credit Card & Multi-clip attachment (\$9.99) or Credit Card & Bottle Opener attachment (\$9.99), for example, and you can securely store four credit card-sized cards in a patented "friction lock" design alongside your iPhone. While the bottle opener attachment will have you quickly twisting off the lid on your favorite refreshment, the multi-clip attachment can hold your headphones and secure the GizmoCase and iPhone to a belt, purse, or pants pocket. A lanyard is also included, but an optional holster is \$4.99.

Sony Introduces Water-Resistant MP3 Player, PIIQ Headphones

■ You are free to buy Sony's new 2GB Walkman W Series NWZ-W252 MP3 player (\$59.95; www.sonymstyle.com) and one of the five models in Sony's new PIIQ headphone series. Just don't plan on plugging your new headphones into your new player. That's because the water-resistant NWZ-W252 integrates its own 13.5mm EX headphones via its one-piece design. Sony bills the wearable NWZ-W252, which weighs 1.6 ounces, as perfect for workouts and for ensuring "proper functionality during extended periods of activity inside or outside—even if used in the rain." When using the included USB cable, Sony also states a mere three-minute charge will supply the player's

built-in battery with 90 minutes of life. A full charge supplies up to 11 hours of life. Additionally, using the included Content Transfer software, you can move nonprotected songs from a Windows- or iTunes-based library via drag and drop.

What to make of the PIIQ series headphones, meanwhile? Sony's blog states that if "a fashion maven met a techno

geek, the new PIIQ line would be their offspring." Overflowing with funky neon color combinations and a range of price points, the series' high-end Marqii model runs \$99.99 and includes 40mm drivers built in, over-the-ear cushioned earpads, a detachable cord, and an adjustable padded headband. The Exhale earbuds at the PIIQ's low end are \$14.99, come in four

eye-popping color options, and include 13.5mm drivers with bass boost abilities. In the middle you'll find the Giiq (\$49.99), an on-the-ear model with padded headband; the on-the-ear, scratch-resistant Triqii (\$29.99) that omits a padded headband; and the Qlasp (\$24.99) earbuds with flexible clip-on attachments.



The Web On Your TV

Full-Featured Video Streaming

You can now watch Web video on more devices than ever and your TV is no exception. However, it takes more than just a flat-panel and remote control to stream content to your TV. Basically, you'll need a wireless connection, a streaming device, and a compatible content provider. Let's take a look at how it's done.

The Hookup

Streaming online content is all about getting your components to communicate with each other and with the Internet. A high-speed Internet connection is the virtual bond that ties components (computer, television, etc.) together. Whether you're setting up an HDTV in your office break room or adding media streaming to your current home wireless network, you must start by establishing the connection through which you will stream movies and videos to the TV.

The basic requirement, then, is a wired connection to the Internet, which travels via Ethernet cable either directly to your components or to a wireless router, which transmits signals that your wireless components can receive. Standard TV sets typically require a direct connection to an intermediary device such as a tuner or a computer, but many of today's "all-in-one" Internet-ready HDTV models use a broadband connection (Ethernet or wireless) to stream Web content directly without the need for an intermediate device.

To get the fastest streaming from a broadband connection, ensure that you use a wireless router that supports 802.11n, the newest Wi-Fi standard. Routers that support the 802.11a/b/g protocols will suffice in some circumstances. The 802.11n wireless standard

is designated for HD video content, however, so if you desire seamless connectivity between all of your wireless and HD devices, invest in 802.11n (aka Wireless N) products from a single manufacturer.

Next, decide which streaming device is most appropriate for "slinging" Web video to your HDTV. If you prefer to stream from your notebook or PC, you'll need a wireless media extender. Install the media extender software on your computer in order to access Web sources. Alternatively, some media extenders, such as the Roku HD Player (\$99.99; www.roku.com), can act as standalone streaming devices; the Roku HD Player features built-in Wi-Fi and an HDMI (High-Definition Multimedia Interface) connection for the best HD picture.

It's possible to wirelessly connect your PC or laptop to your HDTV and not use a secondary streaming device if your HDTV is Internet-connected and DLNA (Digital Living Network Alliance)-certified. To pair wireless DLNA-certified products, use the DLNA official Web site (www.dlna.com) Search & Match tool.

The stripped-down version of the media extender is known as an A/V wireless kit. A full kit, such as the Iogear Wireless Audio/Video Kit (\$279.95; www.iogear.com) includes a wireless USB transmitter for the

PC, a VGA/DVI receiver for the TV, and the audio adapter for the stereo. This particular product will stream in 720p HD and support resolutions up to 1,600 x 1,200 and 1,680 x 1,050. A kit such as this one can stream videos stored on your PC's hard drive to your HDTV.

Get Equipped

We've highlighted a couple of online streaming devices, but there are other products designed for media streaming. You might be familiar with some of these, yet surprised by their versatility. Regardless of which piece of equipment you use, each device must be connected to your HDTV via HDMI or composite cable. HDMI is the superior standard because it transmits all-digital, uncompressed video and audio signals.

If you already own a gaming console, such as a Microsoft Xbox 360 (\$199.99; www.xbox.com) or a Sony PlayStation 3 (\$299.99 for the 120GB version; www.playstation.com), you can access built-in Wi-Fi connectivity. These types of gaming consoles support specific Web services that allow you to watch movies and TV shows instantly (more on this below) and listen to uninterrupted personal radio stations. They essentially function as a type of media extender.

Your DVR (digital video recorder) can operate as a video-on-demand device, as well, if it's Internet-connected. For instance, the TiVo DVR (\$299 for TiVo Premiere; www.tivo.com) with optional Wi-Fi adapter retrieves Web videos and Webcasts. A Season Pass will



The Roku HD media extender (www.roku.com) streams Netflix movies in high-definition format.



The D-Link DSM-750 Wireless N ND Media Center Extender (\$289.99; www.dlink.com) streams HD content to 1080p-supported HDTVs.



Logitech's Wireless Audio/Video Kit (www.logitech.com) streams video content from your PC to TV using a wireless USB transmitter, so you can view Web sites on your flat-panel display.

download all episodes of a particular video broadcast or you can stream one broadcast at a time from various sites, including YouTube.

Blu-ray players give you the best of a few worlds when they're Internet-connected. You can play your DVD collection, watch Blu-ray Disc movies, instantly stream movies, and use the built-in wireless feature to connect to your HDTV or other devices in your home theater. Certain Blu-ray player models also feature the BD-Live standard that expands the feature options for Blu-ray movies. Through BD-Live, you can stream featurettes, movie trailers, additional scenes, and games.

Available Services

Setting up the hardware is worth it when you realize the variety of content you can stream. The online movie rental Web site Netflix (www.netflix.com) grants its members an unlimited streaming plan for \$8.99 per month. With this subscription you can instantly watch select movies and TV episodes.

Depending on whether you've purchased a new streaming device or you're taking advantage of the hardware you already have installed, you're required to activate your device. In the latter scenario, you'll go to www.netflix.com/activate on your computer to activate most devices, such as game consoles, certain HDTVs, compatible media extenders, and Blu-ray Disc players.

Roxio CinemaNow (www.cinemanow.com) offers a similar service, but you won't simply click and watch with unlimited access. Instead, you can "download-to-own" an unlimited number of movies, TV shows, and music videos on one to three devices. Movies are available from \$9.99 to \$19.99; TV shows and music videos are priced at \$1.99.

For anyone who doesn't want to commit to a subscription, the obvious choice is YouTube (www.youtube.com). However, YouTube is dedicated to clips, music videos, video blogs, and other entertainment shorts, rather than full-length movies or hour-long dramas.

If you're already streaming the latest episodes of your favorite TV shows, you're likely familiar with Hulu (www.hulu.com). Providing free video content for users in the States, Hulu features more than 1,700 prime-time TV shows as well as movies, clips, and documentaries. The drawback of streaming Hulu is that it's not supported by manufacturers, but rather streamed to your PC or laptop. Because HDTVs don't include software for Hulu, you'll have to connect your PC or laptop to the HDTV with an HDMI cable. The same goes for network-based streamed sites, such as ABC's full episodes (www.abc.go.com/watch), NBC (www.nbc.com), and TNT (www.tnt.tv).

Beyond these offerings are sites such as StreamTVGuide (www.streamtvguide.com) and Livestream (www.livestream.com) that are ideal for streaming via an A/V wireless kit, because they're Web-based like Hulu. The StreamTVGuide beta is a directory of external streaming sites that are organized by genre. Categories include Animation, Biography, Crime, and Western, among many others. StreamTVGuide provides a brief description, rating, and direct link to the streaming site. Livestream's plans are divided into a Free plan with 10GB download limit (SD quality); the Channel plan that features 3,000 hours of streaming; and the Network plan, which includes 15,000 hours of streaming. The Channel (for professionals) and Network (for corporations) plans are both offered in HD.

by Joanna Safford

If you own an Xbox 360 (www.xbox.com), you can stream Netflix movies with the following features: a broadband connection, Xbox Gold LIVE membership, and a Netflix unlimited plan.



Business Travel Emergency

Unexpected things happen when you're traveling. You lose the ability to access the corporate network. A customer sends you an important file, but you can't open it. You need some quick help creating a formula in Excel. Your smartphone crashes. Batteries die. Credit cards get stolen or lost. If these or other urgent situations happen to you when you're on the road, our Business Travel 911 articles can help.

Business Travel 911 articles are available to anyone with Internet access, even if you don't subscribe to *PC Today* magazine. Simply point a browser to www.pctoday.com and click the Business Travel 911 link on the left for a complete menu of helpful articles.

Business Travel 911 articles, including online versions of those printed on the following pages, are updated regularly. For articles that help you when you can't access the Internet, we suggest you print and take them with you when traveling. If you're a subscriber and you logged in on the home page, you can use the Print This link at the top of any article for a printer-friendly version.

While you're visiting the site, also check out the links under Services. There you'll find an abundance of domestic and international travel resources, including airline, airport, hotel, and vehicle rental information.

GET MORE ANSWERS

PCToday.com also offers numerous resources designed to make life easier for business travelers. Scroll down a little on the home page to find our **Wi-Fi Hotspot Locator**, powered by JiWire. Or check out the **Search For Flights, Hotels & Rental Cars** box to start making your travel plans. And the **Services** menu on the left side of the home page offers links to Web sites and phone numbers for airlines, airports, hotel chains, and more.

The screenshot shows the PC Today website interface. At the top, there's a navigation bar with 'Log In', 'Forgot Your Password?', 'PCToday.com Daily', and 'Monday, February 8, 2010'. Below this, a sidebar on the left lists various site sections, with 'Business Travel 911' highlighted. The main content area is titled 'Business Travel 911' and lists numerous articles, each preceded by a 'FREE' tag. The articles are organized into several categories:

- Emergencies**
 - Deal With Identity Theft
 - Lost Credit Card
 - Lost Wallet Or Purse
- Equipment Problems**
 - Cope With A Failed Navigation System
 - Crank It Up
 - Dead Batteries
 - Deal With A Crashed PDA
 - Modem Problems
 - Notebook/Projector Setup Problems
 - Projector Problems
- Health**
 - Jet Lag & Other Sleep Difficulties
 - Motion Sickness
 - Travel & Your Health
- Remote Connections**
 - Can't Go To My PC Problems
 - No Hotspots? Time To Dial Up
 - Solve Network Connection Problems
 - Solve Wireless Internet Connection Problems
 - Symantec pcAnywhere 11.5 Troubleshooting
 - Use Your Cell Phone As A Modem
 - Use Your Nokia Phone As A Modem
- Software Problems**
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 - Can't Open A PowerPoint File
 - Can't Open That File
 - Cope With A Malware-Infected Notebook
 - Crack Open That Compressed File
 - Fast Number-Crunching With Excel
 - Password Management
- Travel**
 - Airline Reservation Status
 - Getting Bumped
 - Gratuity Guidelines For Business Travelers
 - Jet Lag
 - Lost Luggage
 - Lost Passport
 - Lost Traveler's Checks
 - Mishandled Luggage
 - Rental Car Wreckage



Need Help Right Now?

If you don't find the help you need in the Business Travel 911 department in this issue or on PCToday.com, visit our online Tech Support Center at www.pctoday.com/techsupport.

Search Or Browse

You can look for answers first by entering a search term in the search box toward the top of the page and clicking the Search button. You can also browse the list of Top Subjects to find answers to common problems or click the link under Solutions Knowledgebase to browse a list of common problems and frequently asked questions.

Fight Error Messages & Bugs

Click the appropriate link under Error Messages to find out what a particular message means. Or scroll down to Security & Privacy to learn how to tackle malicious software (such as viruses and worms), spyware, and spam.

Learn More

At the Tech Support Center, you'll also find links to troubleshooting articles on a variety of topics. Browse the headings on the main page to find a wealth of additional information, such as advice on setting up a wireless network and installing just about anything.

Exclusive Phone Number For *PC Today* Readers

If you don't find what you're looking for on *PC Today's* online Tech Support Center, dial (800) 414-3491 for assistance. Representatives are available from 8 a.m. to 8 p.m. CST Monday through Friday to take your call. You may also click the Email Us link under the heading "Still Can't Find A Solution?" at www.pctoday.com/techsupport.

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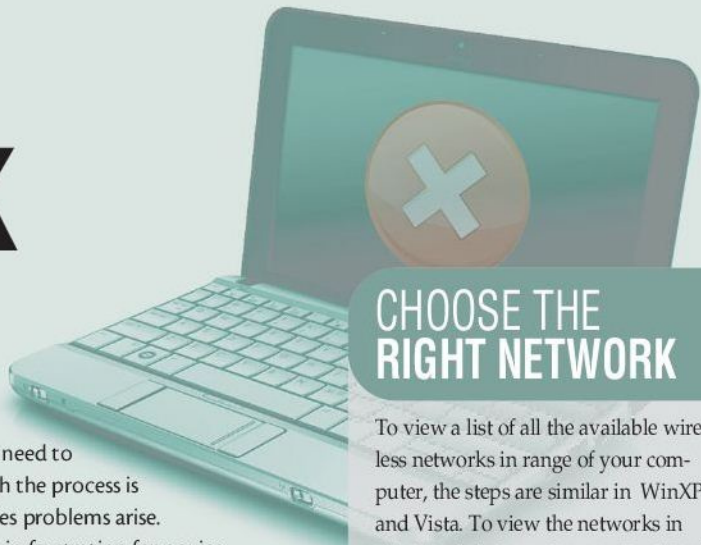
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Basic Troubleshooting Articles

Solve

NETWORK Connection Problems

As the global workforce becomes more and more mobile, the need to connect to various wireless networks becomes greater. Though the process is normally streamlined for easy access for most users, many times problems arise. These problems are not always difficult to solve but can result in frustration for novice users. We cover a few of the major issues faced by road warriors when trying to connect to a wireless network.



CHOOSE THE RIGHT NETWORK

To view a list of all the available wireless networks in range of your computer, the steps are similar in WinXP and Vista. To view the networks in WinXP, click Start, Connect To, Wireless Network Connection, and then View Wireless Networks or right-click the icon in your System Tray and select View Wireless Networks. In Vista, click Start and then Connect To. One option available only to Vista users is the ability to sort by connection type: The drop-down menu labeled Show can be changed between All, Dial-up And VPN, and Wireless, depending on what type of network you're looking for.

If you're using a public network, it's likely that the SSID (Service Set Identifier) will be broadcast. Often, this is the name of the establishment offering the service or some derivation thereof. Talk to an employee of the provider to verify that you're trying to connect to the appropriate network. Many times, a password will be necessary to gain access to the network. This will also be provided by the service provider; we'll discuss this later.

COVER THE BASICS

If you're having trouble connecting to a wireless network, you should eliminate the easiest problems first. Check to see that the wireless network card you're using is turned on and active. Most Windows systems show an icon in the System Tray that indicates the status of the wireless network card. A red "X" through the icon indicates that your card is turned off or not connected to a network.

To check the status of your network connection in Windows XP, click Start, select Connect To, and click Network Connections; in Windows Vista, click Start, select Control Panel, and choose Network And Internet, and then click Network And Sharing Center and Manage Network Connections. The resulting dialog box shows all of the network connections available on your computer (WLAN, LAN, FireWire, etc). Right-clicking an icon gives you the option to enable or disable the connection, repair the connection, or change other properties.

One of the simplest ways to fix a network connection problem is to let Windows repair the connection by right-clicking the network icon and

selecting the option from the menu: In WinXP, you'd select Repair, while in Vista, you'd select Diagnose And Repair from the pop-up menu. The operating system will go through a series of steps to diagnose and repair your connection, if possible, or offer advice if it can't fix the problem.

Many factors can adversely affect the strength of the wireless signal reaching your computer, such as the structure of the building, the number of people, distance, or electronic interference. Letting your mouse pointer dwell over the wireless connection icon in the System Tray will also provide you

with some information about the signal strength of your connection. The Windows Vista pop-up is just like the signal indicator on most cell phones: a series of bars. The more bars you have, the stronger the signal. In WinXP, the indicator is text-based: weak, strong, excellent, and so on. If you have a weak signal, try moving to another area. Sometimes, simply getting closer to the access point or eliminating sources of interference is all that's needed.



The strength of the signal of the wireless network you're connected to shows up as a series of bars in Windows Vista and as a textual description in Windows XP. Let your mouse pointer dwell over the wireless network connection icon (the middle icon) in your System Tray.



When adding a new wireless network connection in Vista, you can manually add a network profile to include networks with non-broadcast SSIDs or security protocol information.

ENTER THE PROPER SSID

An extra level of security is possible when network administrators choose not to broadcast the network ID, or SSID. To connect to this type of network, this additional piece of information is necessary from the service provider.

To connect to an anonymous network in WinXP, navigate to the Wireless Networks tab of the Wireless Network Connection Properties window as described previously. Here, click Add and then enter the SSID and Wireless Network Key (if necessary) provided by the network's administrator. In Vista, click Start, Control Panel, Network And Internet; select Manage Wireless Networks, Add, and Manually Create A Network Profile. The information required for this step is the same as in WinXP: the SSID and network key.

Note that this is a one-time process, as this network should appear in the list on the Wireless Networks tab from now on. If not, you can always repeat the process.



In WinXP and Vista, you can view a list of all the network connections available to your system. This lets you edit the properties or make repairs to the connections as well as view the connection's status.

BYPASS SECURITY

In some cases, the provider of a wireless network will want to keep his network secure using one of the Windows security protocols. The specifics of security types are outside the scope of this article but will be carefully selected by the network administrator. Password and security protocol information should be available from the service provider and is accessed in similar manners for WinXP and Vista systems.

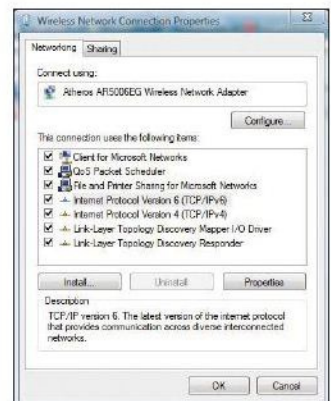
To access the security protocol in WinXP for a connection you've used before, navigate to the Wireless Network Connection Properties by right-clicking the icon in the Network Connections window. Right-click the network connection you're trying to access from the list and click Properties. The Association tab will let you set the Network Authentication, Data Encryption, and Network Keys provided to you by the network provider. If you need to set up a new connection to an encrypted network, right-click the Wireless Network Connection and select View Available Wireless Networks to view a list of all the available networks. Select your desired network and click Connect. If the network is encrypted, the network administrator will prompt you to enter the Network Key.

In Vista, click Start and Connect To and then select the wireless network you're trying to access. Right-clicking the network and selecting Properties will present you with options to add or change the Security Type, Encryption Type, and Network Security Key.

AUTOMATIC IP ADDRESSES & YOU

Most public networks automatically assign an IP address to your computer. You won't need to manually change your computer's IP address to access the network, but you may have to enable the protocol. In WinXP, click Start, select Connect To, choose Wireless Network Connection, and then select Properties for your desired network connection. Scroll down to the Internet Protocol (TCP/IP) menu item and click Properties. Make sure that the radio buttons for Obtain An IP Address Automatically, Obtain DNS Server Address Automatically, and Automatic Private IP Address are selected on the two tabs.

In Vista, click Start, Control Panel, View Network Status And Tasks, and Manage Network Connections (on the left side under Tasks). Right-click the wireless network icon and select Properties. In Vista, you'll have to make the same changes (automatic DNS and IP selection) for both IPv6 and IPv4 menu items unless you're sure which protocol the network uses. In most cases, it's best to play it safe and change both.



In Vista, you'll need to make changes to both IPv4 and IPv6 TCP/IP settings. WinXP only has one set of TCP/IP settings per connection. Use these items to make changes to your DNS or IP address settings.

ASK AROUND

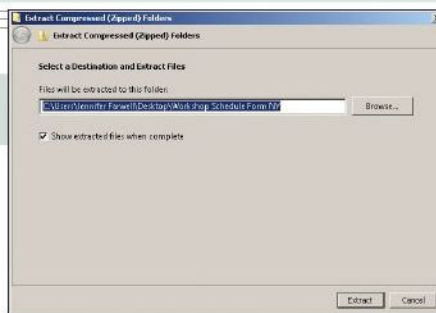
We've covered a few of the simple fixes for common problems experienced when connecting to a wireless network. Keep in mind that many locations that offer Wi-Fi display specific instructions for connecting to the network. If all else fails, ask someone; it's likely that if you're using a public network in a coffee shop, airport, or library, there will be someone onsite who's helped someone like you with a similar connection problem.

Open That Compressed FILE

Receiving a compressed file, especially when you're on the road, can be a headache and a hassle. Compressed files, which are actually single archives composed of one or more files, can substantially save on file size and transmission time compared to a standard file format. However, they require special software to unpack (uncompress). Most of us recognize and can open the .ZIP file format (we'll tell you how in case you don't know), but what if the file extension is something arcane? Archived file extensions now run the gamut from .ARC to .ZOO and can originate not only from a compression utility but also from compression features inside a program. Fortunately, current tools can handle nearly anything you'd want to compress.

UNZIP IT

Windows XP, Vista, and 7 include a free utility that can unpack compressed files and display them in their original formats. WinXP/Vista/7 users can right-click the file and select Extract All. The utility lets you choose where to place the extracted files and whether to open the folder and display its contents when the operation completes. If you are running an older version of Windows (Win2000 or earlier), you'll need a separate utility.



Built into Windows XP and Vista is the capability of unpacking files compressed using the ZIP file format.

EXPAND YOUR HORIZONS

If a compressed file has a file extension other than .ZIP, it will require a specialized compression utility to unpack it. Most compression/decompression software can extract the original files from a dozen or more compressed formats. One such program that has been around for quite some time is WinZip (\$29.95 for the Standard edition, \$49.95 for WinZip Pro; www.winzip.com). We also like WinRAR (\$29; www.rarsoft.com), especially if you also plan to compress files and send them out. (Both give free trials, so you can compare before you buy.) However, if you only need to unpack files, a free utility might suit your needs just as well. For example, IZArc (www.izarc.org) opens more than four dozen archive types (more than many fee-based compression utilities), and you can configure it



Most compression utilities, such as IZArc, let you preview what is in the archive before you unpack it.

to run your virus scanner as you start unpacking the archive. ZipGenius (www.zipgenius.com) is another option, and it supports more than 20 file types.

OFFER AN EXTENSION

Some OSes (notably Apple's OS) store the file-type information as a header inside the file and don't require a file extension. Mac users sometimes use file extensions to make life easier for their Windows-loving friends, but it isn't necessary. If a file unpacks and has no file extension and you know what type of file it is, you can simply add the extension to the end of the filename. Turn Officemeeting into Officemeeting.jpg, and you will be good to go, assuming it is actually a JPG file. This plan will fail miserably if you provide the wrong extension, leaving you to query the sender. However, if you at least know the file type (video, digital photo, and so on), and there are a reasonable number of options, a little experimentation may take you a long way. For example, if you know Johnsbirthday is a digital photo file, try .JPG, .TIF, .EPS, and maybe even .GIF or .PNG file extensions. You should get there eventually.

COMPRESSED OR NOT?

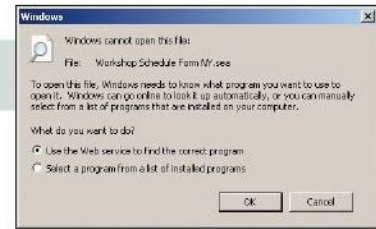
If you can't find a program to decompress a file, and you are not certain it is an archive, then it might not be. There are many more file extensions than most of us will ever encounter. Many of these represent files from proprietary programs not in common use. For example, the information needed to portray data spatially through a GIS (Geographic Information Systems) program often comes divided among a half-dozen or so files; these are usually zipped into a single archive for ease of transport (and because they are pretty useless alone). If you accidentally obtain one by itself, say an SHP (shapefile, which describes geometric forms) file, you won't be able to do a darned thing with it unless you have its partner files (usually at least SHX [spatial index] and DBF [database] files). Fortunately, a quick search on Google will at least tell you what you have.

SOFTWARE LOCKDOWN

Are you on a corporate laptop or public computer where you cannot install software? Don't worry. You can install a compression utility on a USB drive and access it simply by inserting the drive into an open USB slot on any PC. IZArc2Go (free) is USB-based. Best of all, for people working from a public computer, the utility leaves behind no trace of your activities when you decide to move on.

CAN'T TOUCH THAT

Compressed archives originate from many programs and OSes. Consequently, just because you can unpack a compressed program doesn't mean your PC can open it. If you double-click an unpacked file that has a three-letter file extension and Windows doesn't associate it with a particular program, Windows will ask if you want to look for a program online or tell it which program to use. With some file types, Windows does a decent job of determining what program created the file. It may actually lead you somewhere useful. If not, try searching Google for the file extension to see what pops up. If you can determine the file type (video, graphic, or document,



If Windows cannot open a file, it will prompt you to search online or choose a compatible program.



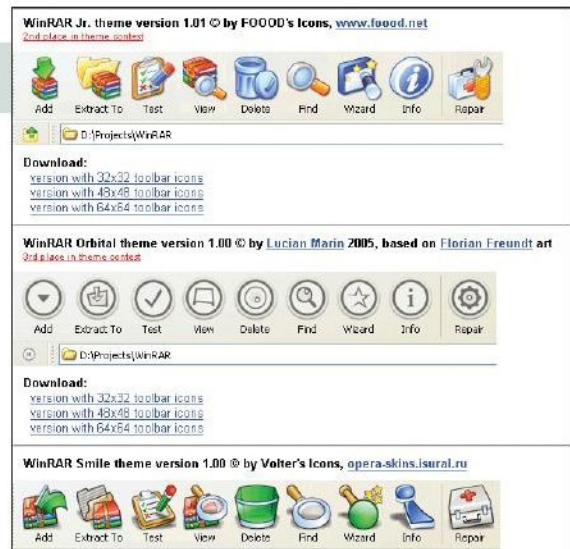
for example), you may be able to convert the file to another similar but usable format. Zamzar (www.zamzar.com) supports an array of file types, and it is free. (But you should expect ads and pop-ups.) Media Convert (media-convert.com), although ad-supported, is free, as well.

If you know the type of information an uncompressed file contains, a utility such as Zamzar may be able to convert it to a similar-type file you can open.

KEEP IT SMALL

When size limitations or bandwidth restrictions affect your ability to send large files, a compression utility can be your best friend. There are many available, but beware that most compression tools can create far fewer archive types than they can unpack. Some tools, including WinZip and WinRAR, can divide extra-large files and folders among multiple archives when you compress them. In some instances this is ideal for moving a group of large files through without having to compress each one individually.

The most universally compatible option for sending compressed files when you are uncertain of the recipient's capacity is a SEA (self-extracting archive). SEAs don't require the recipient to have any other program on his machine because they contain applets that perform the unpacking internally. Some SEAs have the .EXE (executable) file extension. Many virus programs flag EXE files as troublemakers, and some companies and public locations won't let computer users download those files. If you send out an EXE file, make sure you alert the recipient that it is safe to open.



WinRAR, one of our favorite compression programs, offers user-created themes to customize the interface of the program.

Solve

Notebook-Projector Setup Problems

You've struggled through security, dealt with delays, fought fatigue, and shrugged off stress to make it to your presentation on time, so the last thing you want to encounter is a no-go notebook and projector setup. Read on to get the show on the road.

COVER THE BASICS



Remotes come in Bluetooth, infrared, and wired varieties.

First, with all devices powered down, connect the VGA (Video Graphics Array), DVI (Digital Visual Interface), or S-Video cable for the projector to the corresponding port on your notebook. If your projector has a different interface than that of your notebook, you may need an adapter, such as a DVI-to-VGA adapter. Next, connect the power cord for the projector to an outlet. Also, connect the notebook's auxiliary power cord to an outlet.

If your setup includes a Bluetooth or an IR (infrared) dongle for a remote, plug it in to an available USB port on your notebook. Some IR remotes require direct line of sight to function properly, so make sure the path between the adapter and the remote is unobstructed. If your setup lets you use the projector remote to control the pointer on the notebook, connect the cable to the USB mouse port, PS/2 port, or serial port on your notebook and the corresponding port on the projector, commonly labeled Control or Mouse.

If you're using the projector's built-in speakers, make sure your notebook's headphone or line-out jack is connected to the projector's audio-in or line-in jack. If you're using an external sound system, look for a similar audio-in jack and make the connection. If your notebook features line-out and headphone jacks, use the line-out jack. Turn down the volume on your

notebook and test the sound prior to beginning. Some sound-enabled projectors and auditorium sound systems have dedicated volume controls, so adjust those first.

Next, turn the projector on and boot up your notebook. Turn off the screen saver using the Display Properties dialog box. In Windows XP, right-click the Desktop, select Properties, click the Screen Saver tab, select None from the drop-down menu, and then click OK. In Vista/7, right-click the Desktop, select Personalize, click Screen Saver, select None from the drop-down menu, and then click OK. You'll also want to adjust your notebook's power scheme to make sure your presentation goes smoothly. In WinXP, navigate to the Screen Saver tab of the Display Properties dialog box, click Power, select Presentation (With Projector) from the Power Schemes drop box, and then click OK. In Vista/7, navigate to the Screen Saver Settings dialog box, click the Change Power Settings link, click the radio button in front of High Performance, click Change Plan Settings, set the Turn Off The Display setting to Never, click Save Changes, and click OK.



Connect the external display port on the notebook to the appropriate video input port on the projector.

IMAGE TOO DIM

If the projected image appears too dim, try moving the unit closer to the projection surface. This will shrink the overall size of the projection but

improve brightness. Reducing the amount of light in the room will also improve the projection's apparent brightness. Shut off the lights, close window

blinds, and/or draw the curtains.



OUT-OF-FOCUS IMAGE

Most projectors have a manual focus ring around the lens that lets you make subtle adjustments. The projector's control pad, menu, or remote may also yield focus-adjusting controls. If you're using JPEG pictures or other compressed image files in your presentation, these photos may appear blurry when projected. To avoid this, try using higher-resolution photos.

POOR RESOLUTION

If the projected image is cropped on the edges, then you need to adjust the notebook's resolution to match the projector's native resolution. Vista/7 users can adjust the Resolution slider directly from the Display Settings dialog box. In Windows 2000/XP, click the Settings tab and then adjust the Screen Resolution slider to the projector's native resolution. Click Apply and then click Yes if everything looks good. If you don't know the native resolution of your projector, adjust your notebook's resolution to 800 x 600 and then click Apply. If the projected image is framed with black borders, then try 1,024 x 768. Continue trying higher resolutions until the image looks perfect.



OUT OF RANGE

If your projector appears distorted or displays a "signal out of range" message, you may need to adjust your Display Properties. In WinXP, click Start, click Control Panel, and then double-click Display. (In Category View, click Appearance And Themes and then click Change The Screen Resolution.) On the Settings tab, click Advanced. In Win2000, click Start, Settings, and Control Panel; double-click Display; click the Settings tab; and then click Advanced. Vista/7 users, right-click the Desktop and then click Personalize, Display Settings, and the Advanced Settings button.

Although the Advanced Settings dialog box varies depending on your notebook's hardware, you should see a Monitor tab; click it to continue. In the Monitor Settings box, set the Screen Refresh Rate to 70Hz and click Apply. If this doesn't fix the image, continue trying successively lower refresh rates until the projected image looks right.



IMAGE IS UPSIDE DOWN

If the projected image is upside down, then your projector is most likely configured to display from a ceiling-mounted position. If the upside-down image is coming from a projector that is mounted to the ceiling, then it is probably configured to project an image in front-projection mode. To fix either of these problems, navigate the projector's menu or control panel and set the projector to the appropriate mode.

IMAGE TAPERS AT TOP OR BOTTOM

This trapezoidal effect usually occurs if the projector is aimed toward the projection surface at an angle. Most projectors have a setting for adjusting this effect, called keystone distortion. If the projector points up at an angle toward the projection surface, adjust the image's keystone setting to taper the top of the image. Alternatively, adjust the keystone to taper the bottom of the image if the projector points down at an angle.

IMAGE IS TOO SMALL

If the projected image is too small, try moving the projector farther away from the projection surface. Also check to see if the projector has a zoom feature.

NO IMAGE

If the image on your notebook doesn't display on the projected surface, you should check to make sure that your notebook has enabled the external video (or monitor) port. Some notebooks detect the projector and automatically enable the video output. If this is not the case with your notebook, you'll need to enable external video manually. Consult your notebook's manual to enable your notebook's external video output.

Some notebooks let you enable external video output with a key combination, such as CTRL-ALT-F10. Others require specialized function keys or internal settings. You may need to press the video-switching key (or key combination) multiple times to enable the display from both the projector and the notebook. This is called simulscan.

If your projector displays a blue screen or fails to display an image, look for a Source or Input button or browse the projector menu for a source or input option. Press the button or select the option until the video from the notebook is the selected source.

You may need to press the Input button multiple times to select your notebook as the source.



■ The Traveler's 911 Directory



HELP WHEN YOU NEED IT

No matter how hard we try, we can't ensure that our travel plans will always go smoothly. Thankfully, when things go wrong, help may be just a phone call away. Here's a list of phone numbers and Web addresses for airlines, car rental agencies, travel services, and hotels to assist you when your travel plans go awry.

AIRLINES



American Airlines

www.aa.com; mobile.aa.com
Reservations (800) 433-7300
TDD (800) 543-1586
Flight information (800) 223-5436
Baggage delayed less than five days (800) 535-5225
Ticket refund requests (918) 254-3777

British Airways

www.britishairways.com
ba2go.com
Information and reservations (800) 247-9297

Continental Airlines

www.continental.com
pda.continental.com
Reservations to U.S. and Mexico destinations (800) 523-3273
Reservations to international destinations (800) 231-0856
TDD (800) 343-9195
Flight information (800) 784-4444
Baggage information (800) 335-2247
OnePass frequent flyer assistance (713) 952-1630

Delta Air Lines

www.delta.com
mobile.delta.com
Reservations (800) 221-1212
Flight information (800) 325-1999
Baggage information (800) 325-8224
SkyMiles members (800) 323-2323

Frontier Airlines

www.frontierairlines.com
Reservations (800) 432-1359
Customer relations (800) 265-5505

JetBlue Airways

www.jetblue.com
mobile.jetblue.com
(800) 538-2583

Lufthansa

www.lufthansa.com
mobile.lufthansa.com
Information and reservations (800) 399-5838

Midwest Airlines

www.midwestairlines.com
Reservations (800) 452-2022
TDD (800) 872-3608

Southwest Airlines

www.southwest.com
mobile.southwest.com
(800) 435-9792
TDD (800) 533-1305

Spirit Airlines

www.spiritair.com
(800) 772-7117

US Airways

www.usairways.com
Reservations to U.S. and Canada destinations (800) 428-4322
Reservations to international destinations (800) 622-1015
TDD (800) 245-2966
Customer service (800) 943-5436

United Airlines

www.united.com
www.ua2go.com
Reservations (800) 864-8331
International reservations (800) 538-2929
TDD (800) 323-0170

VEHICLE RENTALS



ACE Rent A Car

www.acerentacar.com

Assistance with an online booking (317) 248-5686

Advantage Rent A Car

www.advantage.com
Reservations (866) 661-2722 or (210) 344-4712 outside the U.S.
Customer service (800) 777-5524

Alamo Rent A Car

www.alamo.com
(800) 462-5266
TDD (800) 522-9292

Avis

www.avis.com
mobile.avis.com
Reservations (800) 331-1212
TDD (800) 331-2323
Customer service (800) 352-7900

Budget Rent A Car System

www.budget.com
mobile.budget.com
Reservations in the U.S. (800) 527-0700
Reservations outside the U.S. (800) 472-3325
TDD (800) 826-5510
Roadside assistance (800) 354-2847
Customer service (800) 214-6094

Dollar Rent A Car

www.dollar.com

Reservations (800) 800-3665
Reservations outside the U.S.
(800) 800-6000
TDD (800) 232-3301
24-hour roadside assistance
(800) 235-9393

Enterprise Rent-A-Car
www.enterprise.com
Reservations (800) 261-7331
TDD (866) 534-9270

Hertz
www.hertz.com
hertz.mobi
Reservations (800) 654-3131
Reservations outside the U.S.
(800) 654-3001
TDD (800) 654-2280
Extending a current rental
(800) 654-4174
Billing information
(800) 654-4173
Customer relations
(888) 777-6095

Holiday Cars
www.holidaycars.com
(800) 408-5370

National Car Rental
www.nationalcar.com
(800) 227-7368
TDD (800) 328-6323

Payless Car Rental
www.paylesscarrental.com
(800) 729-5377

Thrifty Car Rental
www.thrifty.com
Reservations (800) 847-4389
Emergency (877) 283-0898

TRAVEL SERVICES



AAA
www.aaa.com
aaa.mobi
Roadside assistance
(800) 222-4357

Expedia
www.expedia.com
(800) 397-3342

Hotwire
www.hotwire.com
(866) 468-9473
OCS (Overseas Citizens
Services) traveler's hotline
(202) 647-5225 or (888) 407-4747
After-hours emergencies
(202) 647-4000

Orbitz
www.orbitz.com
mobile.orbitz.com
(888) 656-4546

Priceline
www.priceline.com
priceline.mobi
(800) 774-2354

Travelocity
www.travelocity.com
mobile.travelocity.com
(888) 872-8356

HOTELS



Candlewood Suites
www.candlewoodsuites.com
mobile.candlewoodsuites.com
(888) 226-3539

Chase Suite Hotels
www.woodfinsuitehotels.com
(800) 966-3346

Choice Hotels International
(Cambria Suites, Comfort Inn,
Comfort Suites, Quality Inn,
Sleep Inn, Clarion, MainStay
Suites, Suburban Extended
Stay Hotel, Econo Lodge, and
Rodeway Inn)
www.choicehotels.com
(877) 424-6423

Courtyard Hotels
www.courtyard.com
courtyard.mobi
(888) 236-2427

Crowne Plaza Hotels & Resorts
www.crowneplaza.com
mobile.crowneplaza.com
(877) 227-6963

Doubletree Hotels
www.doubletree.com
doubletree.mobi
(800) 222-8733

Embassy Suites Hotels
www.embassysuites.com
embassysuites.mobi
(800) 362-2779

Four Seasons Hotels & Resorts
www.fourseasons.com
mobile.fourseasons.com
(800) 819-5053

Hampton Inn Hotels & Suites
www.hamptoninn.com
hamptoninn.mobi
(800) 426-7866

Hawthorn Suites
www.hawthorn.com
(800) 527-1133

Hilton Hotels
www.hilton.com
hilton.mobi
(800) 445-8667

Holiday Inn
www.holidayinn.com
mobile.holidayinn.com
(888) 465-4329

Holiday Inn Express
www.hiexpress.com
mobile.hiexpress.com
(888) 465-4329

Homewood Suites
www.homewoodsuites.com
homewoodsuites.mobi
(800) 225-5466

Hyatt Hotels & Resorts
www.hyatt.com
Hyatt Hotels & Resorts (888)
591-1234, TDD (800) 228-9548
Hyatt Place (888) 492-8847

Hyatt Summerfield Suites
(866) 974-9288

Marriott
www.marriott.com
marriott.mobi
(888) 236-2427

Radisson Hotels & Resorts
www.radisson.com
(888) 201-1718

Ramada Worldwide
www.ramada.com
(800) 272-6232

**Renaissance
Hotels & Resorts**
www.renaissancehotel.com
(888) 236-2427

Residence Inn
www.residenceinn.com
residenceinn.mobi
(888) 236-2427

Ritz-Carlton Hotels & Resorts
www.ritzcarlton.com
(800) 542-8680

Sheraton Hotels & Resorts
www.sheraton.com
(800) 325-3535

Staybridge Suites
www.staybridge.com
mobile.staybridge.com
(877) 238-8889

Westin Hotels & Resorts
www.westin.com
(800) 937-8461

Wingate Inns
www.wingateinns.com
(800) 228-1000

Wyndham Hotels & Resorts
www.wyndham.com
(877) 999-3223

Woodfin Suite Hotels
www.woodfinsuitehotels.com
(800) 966-3346



Motorola TD-LTE equipment deployed for ITU World Telecom.

Q&A With Motorola

The Company's Commitment To WiMAX & LTE

Motorola Networks focuses on the global wireless infrastructure with a commitment to 4G wireless technologies. The company provides WiMAX (Worldwide Interoperability for Microwave Access) solutions and is on the forefront of LTE (Long Term Evolution) technologies as it works to meet the growing demand for mobile broadband. The 4G technologies promise faster wireless downloads, better multimedia and video support, and enhanced reliability. To find out more about WiMAX, LTE, and their benefits, we spoke with Bruce Brda, senior vice president and general manager of Motorola Networks. Answers have been edited for clarity and space.

Q What are the primary differences between WiMAX and LTE?

A There actually are more similarities than differences between WiMAX and LTE. Both are all-IP technologies that shift the fundamental architecture from a circuit to a packet-based world, which means they both can deliver the lowest cost per bit for operators. Although WiMAX and LTE started in different places and are being embraced by different types of operators, there are no limits to the fixed and mobile applications of WiMAX and LTE. Both enable the media experiences people want while enabling new applications previously available only on a wired connection. They also offer new business models to the wireless industry—providing new revenue opportunities for operators.

Q What recent innovations has Motorola brought to these technologies?

A Motorola has brought innovation to both WiMAX and LTE in terms of network architecture and hardware configuration by drawing on our expertise in OFDM (orthogonal frequency division

multiplexing) technology and by reusing as much as 70% of our WiMAX engineering learnings in the development and design of our LTE solutions. Motorola has taken a leadership role in advancing the adoption of TD-LTE (Time Division Duplex

LTE). We have accomplished numerous world's firsts in this technology, including the operation of the world's first precommercial TD-LTE network at the World Expo 2010 in Shanghai, China. The network will provide indoor coverage at major pavilions during the event, which runs through Oct. 31.

Motorola's early commitment to WiMAX has given us vast experience and expertise in designing, planning, optimizing, and managing OFDM mobile broadband networks. Motorola is leveraging this extensive OFDM, MIMO (Multiple Input/Multiple Output), all-IP wireless broadband experience and expertise in the 4G

scheduler to deliver a complete LTE solution that will support FDD (Frequency Division Duplex) and TD-LTE. Also on the WiMAX front, Motorola's zero-footprint antenna design improves performance while saving operating costs. Advanced antenna technologies provide better capacity, coverage, and throughput.

Q How might WiMAX and LTE improve the mobile experience for business travelers and their companies?

A WiMAX and LTE will greatly enhance the mobile experience for business travelers and their companies as the technologies provide experiences and connectivity previously available only in a fixed-line environment.

WiMAX untethers broadband and makes it accessible and reliable in all regions of the world for fixed, portable, and mobile users. Motorola's



Bruce Brda, senior VP and general manager of Motorola Networks.

WiMAX option enables service providers to provide high-speed communications to customers—whether they are at home, in the office, or on the move—and gives them opportunities to blend their traditional lines of business and position themselves to deliver full suites of voice, video, and data wirelessly to fixed, portable, and mobile users.

LTE brings the realization of true mobile broadband experience nearly anywhere as it also allows operators to introduce new and exciting services, including HD video blogging, HD video on demand, media mobility, online gaming, video-based collaboration tools, and more. LTE will provide significant improvements to the user experience.

Q Can you provide some examples of how these technologies are being used today that may apply to business travel or mobile workers?

A WiMAX is providing remote, mobile, and high-speed connectivity to users via USB dongles. Users can download videos and files and use LBS (location-based services) or a host of other applications on their laptops while on the go. Desktop modems enable users to take their networks with them from one location to another by simply plugging the unit into a power source and connecting to their operator's WiMAX network to gain nomadic Internet access. Only WiMAX is available on a wide-scale basis today.

Q In addition to the benefits WiMAX brings to business and mobile computing, what other benefits does it offer?

A WiMAX has proven to be a key all-IP mobile broadband access technology and is driving the success of operators worldwide with a range of diverse business models including retail and wholesale access, smart grid applications, low teledensity, or retail-only broadband connectivity for users at home or on the go. Examples include Motorola customer SP AusNet, which is using WiMAX for its smart metering program; Clearwire, which is providing WiMAX for both retail and wholesale distribution; CaribServe, which is using

the ASN 1000 for its low-teledensity deployment; and Imagine, which is deploying an end-to-end Motorola WiMAX network to replace its existing wireless infrastructure across Ireland.

Q In addition to the benefits LTE will bring to business and mobile computing, what other benefits will it offer?

A LTE will offer similar benefits, and users on early networks in select markets are eagerly adopting the service. TeliaSonera, which launched its LTE network in late 2009 [in Norway and Sweden], recently conducted a survey of its 4G customers and found that more than half said they would not consider returning to 3G.

Q When do you anticipate that these technologies will be mainstream/widely available?

A WiMAX is available today and becoming more mainstream in select markets by leading operators such as Clearwire and Sprint in the United States. According to the WiMAX Forum, there currently are 555 WiMAX network deployments (fixed and mobile versions) in 147 countries worldwide.

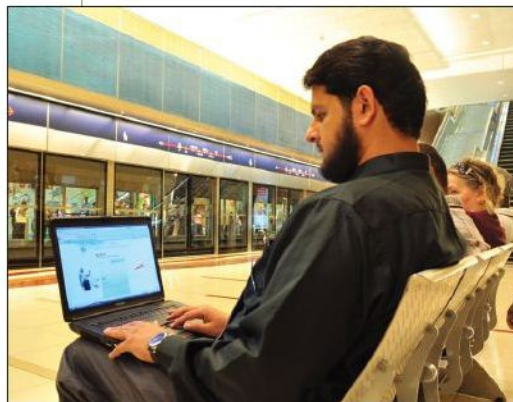
Research firm IDC recently issued a report noting that more than 12 new LTE networks are scheduled to go live this year. The GSMA (GSM Association) echoed that momentum for LTE by recently reporting that there are now 64 operators committed to deploying LTE networks in 31 countries worldwide, up from 31 operator commitments identified by the GSMA one year ago. Motorola has commitments for nationwide FDD-LTE networks from KDDI and Zain Saudi Arabia.

Q What issues or challenges has the industry faced with deployment of LTE and WiMAX?

A The issues and challenges have more to do with the economics of an operator's business case and

The Motorola CPEi 825 wireless broadband modem supports data and voice with an integrated VoIP port.

the competitive and regulatory environment (spectrum availability) vs. the technology. The burgeoning demand to deliver mobile data—from video to social media to navigational and LBSes—is creating pressure on operators to upgrade their networks. They are challenged by the needs for more speed,



Motorola and du, an integrated telecom provider in the UAE, implemented a WiMAX network for the Dubai Metro.

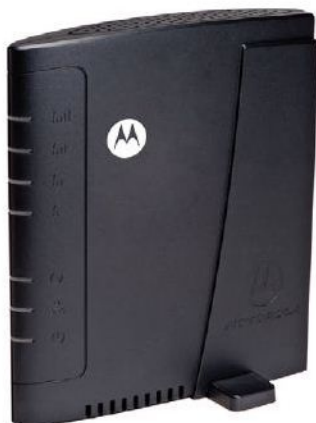
spectrum, capacity, and coverage—all at a time when the impact of flat-rate data plans and tough economic times are complicating their financial picture.

Q What will readers need to use these technologies with their mobile devices (notebooks, netbooks, smartphones, and so on)?

A Early introduction of WiMAX and LTE will rely on dongles to provide mobile connectivity. As the technology advances and networks are built out, users will begin to see multimode devices or smartphones that will use the 4G technology when and where it's available, and then roam to an existing 2G or 3G network when necessary.

WiMAX operators today are offering service using desktop modems and dongles, while U.S. operator Sprint has announced plans for availability of the world's first 3G/4G Android handset, a WiMAX device which uses the Android OS. At the World Expo 2010 in China, Motorola is showcasing the world's first TD-LTE dongle. During the Expo, delegates can experience the real-life performance of TD-LTE via USB dongles, including video streaming, remote monitoring, video stream session, high-speed Internet browsing, and more.

by Carmen Carmack



Happy Trails

by Calvin Clinchard

Intriguing Gear, New & Around The Bend

A Sturdy Legend

■ Taiwanese manufacturer HTC (www.htc.com) is known for designing smartphones that are easy to use and elegant in their simplicity. The new HTC Legend delivers the expected simplicity and adds some unexpected durability thanks to a seamless aluminum case. Like other recent entries from HTC, the Legend will run the Android mobile operating system and the now familiar HTC Sense experience, a social connectivity-oriented interface. But in some respects—most notably a new optical joystick and a 3.2-inch AMOLED (think “organic” and brilliant, even in sunlight) display—the Legend stands apart. The HTC Legend is currently available in Europe and will be available in other markets soon; HTC mentions Asia by name, but there’s no definitive word that the North American market will be included.



Ready For The Highway

■ Road warriors take note: If you’ve ever dreamed of having a smartphone that does double duty as an in-car GPS device, the Garminfone from Garmin (www.garmin.com) could be just what you’ve been waiting for. The Garminfone is the first smartphone to run Garmin’s navigation software and the Google-friendly Android mobile OS. You can use it as you would any Android smartphone for business productivity and staying connected with colleagues, friends, and family, and when you’re preparing to drive, you can attach the Garminfone to the included car mount and use its GPS and hands-free calling features. Traveling with ready access to Google also provides a wealth of local information. At press time the Garminfone was not yet available but was set for a June release through T-Mobile (www.t-mobile.com).

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